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## Rationing: Resource Allocation in the Current Health Care Delivery System

- ◆ Using a broad definition of rationing to include any mechanism that allocates health care resources, this *Issue Brief* examines the health care system along two dimensions: what differences exist in the utilization of health care services and who makes the decisions that create these differences. It finds that similar people are given different treatments as a result of decisions made by others.
- ◆ Proposals to reform the health care system implicitly or explicitly alter the way decisions are made on how health care services are rationed. The current system allocates health care services in a number of ways: by ability to pay, by physicians and hospitals, and by government decree. Understanding rationing as it currently exists is critical to making informed choices on the future of the health care delivery system.
- ◆ The U.S. health care delivery system has a number of characteristics that limit the market's ability to allocate resources efficiently or equitably. Income is one of the most important determinants in rationing health care services, but even individuals with relatively high incomes face some constraints on their choice of health plans.
- ◆ There are large differences in the way health care is rationed by type of health insurance coverage, characteristics of the local health care market, provider type, and employment situation.
- ◆ There are many decision makers in the health care delivery system, but decisions on the consumption of health care services—unlike decisions in other markets—are not primarily being made by the consumers of these services. Health care cost inflation has led to changes in the way health care is financed in both the public and private sectors. As a result, the choices available to consumers are constrained not only by income but also by employers, insurers, providers, and government regulators.
- ◆ Much of the debate on health care reform has centered on the notion that efforts to increase access to care and control costs may lead to health care rationing. However, we are rationing health care resources in our present health care system. More appropriately, the debate should focus on the mechanism for allocating health care resources and the tension between individual decision making and social objectives. This *Issue Brief* provides a basis for that discussion.

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## ◆ Introduction

Health care costs have been increasing at twice the rate of general price inflation for over a decade. More than 36 million Americans lack health insurance, which limits their access to health care services. Studies indicating that between 10 percent and 30 percent of selected procedures are inappropriately or unnecessarily performed have created concern about the quality of care Americans receive (Rustuccia, 1984). These issues have led to a number of proposals for reforming the health care delivery system that would shift the allocation of health care resources.

**Proposals to reform the health care system implicitly or explicitly alter the way decisions on health care services are made, affecting the type and quantities of services, the recipients, and the sites of services.** An important issue in the debate over health care reform is whether health care services will be rationed in the future. **The current system rations health care services in a number of ways: by ability to pay, by physicians and hospitals, and by government decree.** Understanding rationing as it currently exists is critical to making informed choices on the future of the health care delivery system.

The term *rationing* has eluded a widely accepted definition. The dictionary defines *ration* as “a fixed portion” and the verb *rationing* as: “to restrict to limited amounts” (American Heritage Dictionary, 1985). The authors of two recent studies on rationing health care defined rationing as occurring when “not all care expected to be beneficial is provided to all patients” and later modified this definition to “the denial of commodities to those who have money to buy them” (Aaron and Schwartz, 1984 and 1990). Other analysts define rationing as the “toleration of unequal access to beneficial and necessary care” (Hadorn and Brook, 1991) or more broadly as “any mechanism for allocating resources . . . under conditions of scarcity” (Baker, 1992).

The dictionary definition of rationing implies the existence of a centralized decision maker who determines each individual’s fixed share, while the broader definitions include the decentralized market as one of the mechanisms for allocating resources. However, the definition that most people associate with rationing focuses on the denial of beneficial care. This definition implies a centralized decision maker removed from the patient rather than “toleration” or rationing by impersonal systems.

**In this *Issue Brief* the term *rationing*, broadly defined as any mechanism to allocate scarce resources, is used interchangeably with the term *resource allocation*.** The broader definition of resource allocation is most relevant to the present health care delivery system. It is clear that many Americans are not now receiving “all care expected to be beneficial.” Why this occurs is an important question. Clearly, Americans differ according to income, health status, and risk of needing health care services. However, these factors alone do not explain the differences in health care services. Are Americans choosing different levels of care? Or are similar people given different treatments as a result of decisions made by others?

The health care delivery system is composed of several distinct interconnected markets. The market for health insurance affects the market for health services in many ways, including altering the price of services faced by consumers and the financial incentives faced by providers. The market for physician services is affected by and affects the market for hospital services. The incentives presented by the various sources of health insurance to providers affect the diffusion of new technology and the treatments provided to patients. The allocation of resources is determined by the interaction of these markets with federal and state regulation of health care.

Americans have generally found markets are an attractive way to allocate resources, largely because decision making is decentralized. This is especially appealing in

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health care, where decisions often involve the most fundamental and personal tradeoffs between comfort and pain and between life and death. However, because of the complexity of medical decision making, the amount of information necessary to make choices, and the pooling of risk through insurance, health care consumers—unlike participants in most markets—may not necessarily be the primary decision makers in the health care services markets.

It is important in understanding any health care delivery system to know not only who the decision makers are but also what criteria they are using to allocate scarce resources and what factors influence these criteria. The incentives faced by the various decision makers, the quality and type of information available to them, and the objectives and criteria they employ in making their decisions determine the ultimate allocation of resources among individuals.

This *Issue Brief* examines the allocation of resources in the U.S. health care delivery system. Although this system is private and market based, there are many factors that determine the allocation of resources that are not normally present in other markets. The *Issue Brief* begins with a discussion of the allocation of resources in a market system and then looks at the health care delivery system and why it differs from other markets. It examines the financing sources for health care services and their implications for the allocation of resources. Next, it analyzes these financing mechanisms, which affect and are affected by the characteristics of the providers of health care services. Finally, the report discusses the regulation of the health care delivery system and its effects on the allocation of health care resources.

### ◆ The Allocation of Resources through Markets

**Under perfect conditions, the market system allocates scarce resources across competing demands for these resources so that the costs to society of producing**

**that good is equal to the amount individuals are willing to pay for it. Conditions are hardly perfect, however. Several factors may constrain the market from allocating resources efficiently.** If the production or consumption of one good affects the consumption or production of another, the market will produce too much or too little of the good. Examples include education: individuals' consumption may benefit society, but because they can only reap the benefits that accrue to them personally, they may purchase an amount less than society would find optimal. Likewise, the market may not recognize the full costs to society of a production process that pollutes.

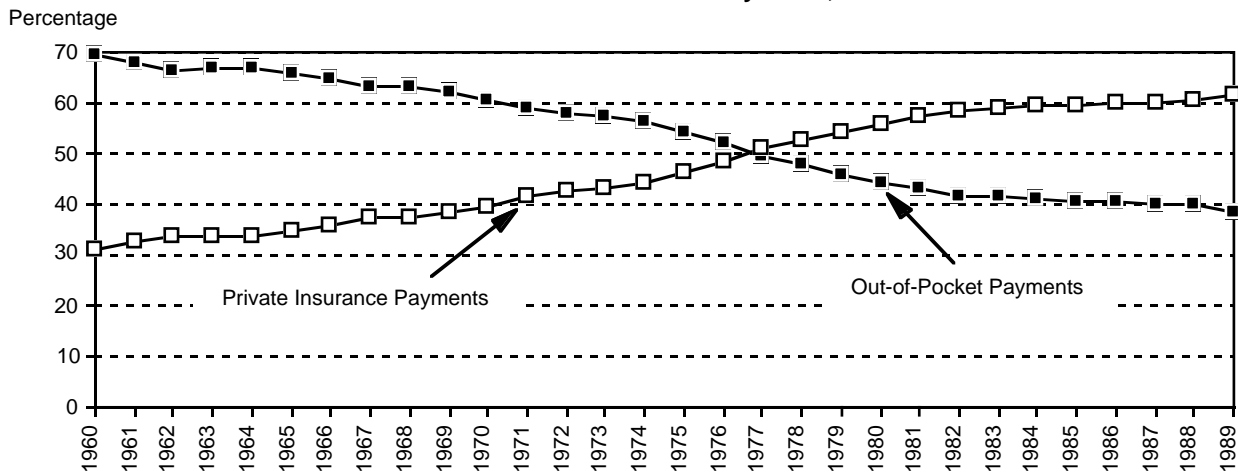
If information is limited, a market may not efficiently allocate resources. When the quality of a good is uncertain, or the costs of production can vary, too little or too much of a good may be produced, or over time the price of the good may change.

Finally, efficient markets need not be equitable. The notion that the cost of producing a good equals the cost of the amount of other goods individuals are willing to give up to get that good may be irrelevant to society if individuals are constrained by low incomes from purchasing the amount of the good society deems optimal. Society may find it desirable to redistribute income in that case, but the mechanisms for redistribution may introduce their own distortions in the allocation of resources.

### ◆ The Market for Health Care Services

**The U.S. health care delivery system has a number of characteristics that limit the market's ability to ration care efficiently or equitably.** Economist Kenneth Arrow, who would later win the Nobel Prize in economics, was given a grant by the Ford Foundation in the early 1960s to analyze the health care delivery system. His analysis suggested that many of the institutions that then characterized the health care delivery system arose because of uncertainty. He wrote, ". . . the special economic problems of medical care can be

Chart 1  
**Percentage of Private Health Care Expenditures That Are Out of Pocket  
 and Private Health Insurance Payments, 1960–1989**



Source: Helen C. Lazenby and Suzanne W. Letsch, "National Health Expenditures, 1989," *Health Care Financing Review* (Winter 1990): 1–28, and unpublished data.

explained as adaptations to the existence of uncertainty in the incidence of disease and in the efficacy of treatment” (Arrow, 1963). The uncertainty in the incidence of disease led to the development of health insurance, while uncertainty in the efficacy of treatment helped shape the characteristics of private insurance plans and public health policy. **The uncertainty in treatment effectiveness means that it is difficult to make a correct diagnosis given a set of symptoms, and that once the correct diagnosis is made a given procedure may produce different outcomes for people with the same diagnosis.**

The uncertainty in the efficacy of treatment has important implications for the allocation of resources. Physicians were traditionally, and in most cases still are, reimbursed under a fee-for-service system, which combined with comprehensive insurance coverage, frees both the patient and the physician from the risk associated with the uncertainty in treatment effectiveness. Fee-for-service reimbursement gives physicians a financial incentive to provide more services. As a result, new tests, procedures, and treatments are evalu-

ated and adopted into standard practice on very weak evidence of efficacy. Traditionally there has been little if any evaluation of the relative benefits and costs of new medical technology.

Hospitals are regarded as quasi-public institutions and as such have traditionally been reimbursed on a cost-plus basis to ensure their ability to maintain high quality services. Under cost-plus reimbursement, the amount hospitals receive is determined by the costs they incur in providing a service. Reimbursement under fee-for-service for physicians or cost-plus systems for hospitals gives providers little incentive to limit the number or quantity of services they provide. Increased health insurance coverage has raised the demand for medical services. Provider and patient incentives have promoted the consumption of more care.

**The increasing demand for health care services has led to a concurrent increase in the demand for new medical technology.** Medical researchers, with financial assistance from the government and other sources, have responded impressively. The number of diagnostic tools

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a physician can employ on a given set of symptoms and the number of potential therapeutic procedures for a given diagnosis have increased dramatically in the last 25 years.

**The supply of physicians has also grown rapidly. The number of physicians per capita grew by 40 percent between 1970 and 1985 and is projected to grow by another 20 percent by 2000** (Kletke, Marder, and Silberger, 1987). Although the simple economics of supply and demand imply that increasing the supply of physicians should lower their income, physician income did not significantly change, after adjusting for inflation, from 1975 to 1985 (Gonzalez, 1986). Some analysts have concluded that this implies that the increasing supply of physicians generates its own demand, and the physician glut is one of the causes of health care cost inflation.



**The number of physicians per capita grew by 40 percent between 1970 and 1985 and is projected to grow by another 20 percent by 2000.**



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This supposition ignores the demand side of the market for physician services. The demand for physician services is related to technology and the supply of new procedures. New technology increases the number of procedures that can be performed for a given condition and the number of conditions that can be treated, raising the demand for treatment. Concurrently, as the supply of physicians increases, they tend to specialize, performing fewer types of procedures (Baumgardner, 1988). Researchers project that, at current rates of increase in the intensity of care provided, the supply of physicians will roughly equal the demand from the present to 2000 (Schwartz, Sloan, and Mendelson, 1988).

Physicians have long considered price competition unethical. Providers have competed in quality, or more accurately, in quality signals. Patients, lacking the information necessary to evaluate the technical quality of care, look for signals they hope relate to technical quality such as location, office amenities, and the physician's hospital affiliation. Hospitals compete with each other for physicians and patients by offering the capability to perform more procedures and to deliver more amenities. The cost of the more expensive new technology required to perform new procedures is spread across all other procedures.

**Medical research has produced a rapid expansion in treatment options without concurrent research on the relative efficacy of each option. This has prevented the formation of a medical consensus on the proper treatment of a given set of symptoms.** Large variation in practice patterns has been documented among physicians practicing in the same geographic area.<sup>1</sup> Many physicians see too few patients with any specific condition to evaluate the relative efficacy of competing treatments. The paucity of research on medical outcomes results in the practice of medicine as an art rather than a science and limits the ability of purchasers of health care services to differentiate among providers on the basis of quality.

The preceding discussion provides some of the reasons health care costs have risen so rapidly over the last 20 years. It also implies that, rather than limiting care, the United States has produced an overabundance of services. Tests, treatments, and procedures are performed if they are perceived to have any benefit at all without regard to the costs. In many cases unnecessary or inappropriate procedures are performed.

Thus, Hadorn and Brook's addition of the word *necessary* in their definition of rationing. Denial of access to

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<sup>1</sup>For a review of the evidence, see John Wennberg and Alan Gittelson, "Variations in Medical Care among Small Areas," *Scientific American* (April 1982): 120-135.



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health care that is not both beneficial and necessary may not be rationing as they have defined it, but it clearly affects the allocation of resources and requires that decision making move away from the patient or the patient-physician relationship.

**However, while the United States may have devoted an abundance of resources to health care services, the distribution of the costs and benefits of these resources is uneven, as a number of studies have shown.** Individual Americans are receiving different amounts of health care services and different treatments for the same conditions. While a large part of the variation in the distribution of health care services can be explained by the source of an individual's health insurance, not all of the variation is due to differences in income or ability to pay. Other factors include access to health insurance, type of health insurance, access to health care providers, and the characteristics of the local health care market.

The market for health care resources suffers from a number of defects that may prevent it from rationing care efficiently. There is general, although not universal, agreement that the market for health care services has failed in the sense that the mix of health care services provided is not necessarily the one that fully informed consumers would wish to purchase. Information is costly to both providers and purchasers of health care services. Moreover, the health care delivery system is composed of interconnected local markets. Each of these markets has unique characteristics that determine the providers' and purchasers' relative market power. The diffusion of information is not uniform across these markets.

### ◆ Local Health Care Markets

Local health care service markets may have very different characteristics. **Physician practice patterns have been shown to vary significantly among areas even within the same state** (Mitchell et al., 1984). Competition among hospitals, physicians, insurance

plans, and other providers such as outpatient surgical centers and independent laboratories differs significantly from one local market to another. Private and public payers' relative market power, hospitals' ownership and goals, and local medical societies' political strength all affect the level of competition among providers and insurers. States differ in their eligibility requirements for public health care programs and in their reimbursements to providers. Public program reimbursements affect the pricing of their services to private payers. Finally, individuals' health status and their attitudes toward health care delivery may differ from one area of the country to another.



**Because of these differences in local health care services markets, the relative cost of health care services, and the cost of health insurance, individuals' access to health care services may differ by region or area.**



Because of these differences in local health care services markets, the relative cost of health care services, and the cost of health insurance, individuals' access to health care services may differ by region or area. These differences are reflected in the utilization of health care services. For example, the utilization of hospital services varies considerably by region as illustrated in table 1.

Moreover, changes in the incentives to providers and patients have different effects in different markets. The Employee Benefit Research Institute's studies of private health care cost management strategies found that employers in Houston, Texas indicated that 67 percent of the expenditures in their health plans were for inpatient care between 1985 and 1987. In the Southern California area in 1989, only 45 percent of expenditures

Table 1  
Hospital Utilization by Census Region

Region <sup>a</sup>	Average Length of Stay (days)	Occupancy Rate	Surgical Operations per Bed
United States	7.2	66%	22.86
New England	7.6	75	26.72
Middle Atlantic	8.6	80	22.73
South Atlantic	7.0	67	23.97
East North Central	7.1	64	23.88
East South Central	6.9	62	19.87
West North Central	8.4	62	19.54
West South Central	6.4	57	21.15
Mountain	6.5	60	23.02
Pacific	6.3	64	24.53

Source: American Hospital Association, *AHA Hospital Statistics: 1990–91 Edition* (Washington, DC: American Hospital Association, 1990).

<sup>a</sup>New England: CT, ME, MA, NH, RI, VT; Middle Atlantic: NJ, NY, PA; South Atlantic: DE, FL, GA, MD, NC, SC, VA, WV; East North Central: IL, IN, MI, OH, WI; East South Central: AL, KY, MS, TN; West North Central: IA, KA, MN, MO, NE, ND, SD; West South Central: AR, LA, OK, TX; Mountain: AR, CO, ID, MT, NV, NM, UT, WY; Pacific: AK, CA, HI, OR, WA.

were for inpatient care. The effect of utilization review (UR) programs also differed between the two markets. In Houston, UR shifted care out of the hospital and increased the utilization of outpatient services, while in Los Angeles there was no shift associated with UR, and in fact UR actually lowered outpatient expenditures (Custer, 1991).

The local health care market determines how health care resources are rationed. People with similar conditions may receive different care depending upon their health care market. Some of these variations in utilization are determined by variations in the sources of health insurance coverage, but differences may occur even with similar coverage. Although the source of health coverage is an important determinant of access to health care services, an individual's share of health care resources is also a function of the characteristics of the local health care market.

### ◆ Sources of Health Insurance Coverage

**The ability to pay is one of the most important determinants of an individual's allocation of health care resources. In the health care market, ability to pay is most often equivalent to access to health insurance.** The sources of health insurance coverage

depend on income as well as age. As family income increases, individuals are more likely to have private health insurance and less likely to receive coverage under a public plan or to be uninsured. The aged are primarily covered by Medicare, the poor by Medicaid or not at all. This sorting of Americans by source of coverage provides each group with different limits on the amounts and types of care available to it.

The sensitivity of the demand for health care services to changes in price is lessened by the spread of health insurance, which lowers the effective price of health care services to patients. As chart 1 indicates, total payments by private health insurance overtook total direct payments by consumers in the late 1970s and are increasing as a component of national health expenditures. Consumers of health care services can be categorized primarily by the source of their health insurance coverage. Table 2 shows the sources of health insurance coverage for Americans in 1991. Sixty percent of all Americans receive health insurance coverage through an employer. Just under 25 percent of Americans have health insurance coverage from a public plan, with 96 percent of those over age 65 receiving public coverage. More than 36 million Americans did not have health insurance coverage, the vast majority of them under age 65.



There are large differences in the benefits offered across these types of health insurance coverages, and within each category (table 3). Even those without health insurance face different constraints on their ability to procure care, depending on the characteristics of the local health care market and state and local programs to provide the medically indigent with access to care. State Medicaid programs differ in the benefits they cover as well as in eligibility requirements and provider reimbursement. Medicare recipients may also have purchased Medigap coverage or may receive coverage under an employer's retiree health plan. Finally, private health plans for individuals and groups vary widely, ranging from first dollar indemnity plans to group staff model health maintenance organizations (HMOs) with copayments. Each of these plans offers different incentives to consumers, imposes different restrictions on providers, and results in different allocations of resources.

### ◆ Medicare

**The Medicare program**—the federal health insurance program for the elderly and severely disabled—**ration**

**care for its beneficiaries by determining eligibility, benefits, and its reimbursement policy to its providers. In addition, it affects the allocation of health care resources to all patients because it is such a large purchaser of health care services.** In 1990, Medicare accounted for 16 percent of total national health expenditures. Private spending by the elderly has also been increasing. Although the elderly represented 12 percent of the U.S. population in 1987, they accounted for 36 percent of personal health care expenditures. Between 1977 and 1984, the elderly's total personal health care expenditures nearly tripled, increasing to \$119 billion in 1984 from \$43 billion in 1977. The elderly's total personal health care expenditures reached \$175 billion in 1988, an increase of 46 percent since 1984. The percentage of the elderly's health spending coming from private sources went from 36 percent of total personal health spending in 1977 to 42 percent in 1988. Medicare's share of the elderly's personal spending went from 44 percent to 40 percent in the same period.

**Of all health insurers, Medicare is the single largest purchaser of hospital and physician care, purchasing**

Table 2  
**Nonelderly and Elderly Americans with Selected Sources of Health Insurance Coverage,  
 Employee Benefit Research Institute Analysis of the March 1992 Current Population Survey**

Source of Coverage	Total Population		Nonelderly		Elderly	
	(millions)	(percentage)	(millions)	(percentage)	(millions)	(percentage)
Total Population	248.7	100.0%	218.1	100.0%	30.6	100.0%
Total with Private Health Insurance	178.4	71.7	157.7	72.3	20.7	67.7
Employer coverage	150.0	60.3	139.8	64.1	10.1	33.1
Other private coverage	28.6	11.5	18.0	8.2	10.6	34.7
Total with Public Health Insurance	61.2	24.6	31.7	14.5	29.5	96.3
Medicare	32.9	13.2	3.5	1.6	29.4	96.0
Medicaid	26.8	10.8	23.9	11.0	2.9	9.5
CHAMPUS/CHAMPVA <sup>a</sup>	7.1	2.9	5.9	2.7	1.2	3.8
No Health Insurance	36.6	14.7	36.3	16.6	0.3	0.9

<sup>a</sup>Includes only the retired military and members of their families provided coverage through the Civilian Health and Medical Program for the Uniformed Services and the Civilian Health and Medical Program for the Department of Veterans' Affairs. Excludes active duty military personnel and members of their families.

Note: Details may not add to totals because individuals may receive coverage from more than one source.



Table 3  
**Beneficiary Cost Sharing and Coverage for Selected Benefits Among Public and Private Health Plans**

Medicare	Medicaid	Medicare/Medicaid (Dual Eligibles)	Medigap <sup>a</sup>	Private <sup>b</sup>
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Source: Medicare data—unpublished data from the U.S. Department of Health and Human Services, Health Care Financing Administration, Office of Program Analysis. Medicare general information—U.S. Congress, House of Representatives, Committee on Ways and Means, *1991 Green Book: Overview of Entitlement Programs* (Washington, DC: U.S. Government Printing Office, 1991). Medigap information—“Medigap (continued)”

Table 3 (continued)

Insurance: Changes in the Law Benefit Older Consumers," *Aging News* (May 1992): 2–3. Medicaid information—Unpublished data from the U.S. Department of Health and Human Services, Health Care Financing Administration, Intergovernmental Affairs Office, Medicaid Bureau.

<sup>a</sup>Ten kinds of policies make up the Medigap market. They have letter designations ranging from A to J: A policies provide a set of core benefits, and the others provide additional coverage, with J providing the most comprehensive coverage. Deductible, copay, and lifetime limit categories are based on the core benefits plan (plan A). Core benefits include payment for hospital and physician costs as specified above and include the first three pints of blood not covered by Medicare.

<sup>b</sup>Private plan data are based on U.S. Department of Labor, Bureau of Labor Statistics, *Employee Benefits in Medium and Large Firms, 1989* (Washington DC: U.S. Government Printing Office, 1990).

<sup>c</sup>Not applicable.

<sup>d</sup>Covered in all 50 states and in American Samoa, Guam, Hawaii, and the N. Mariana Islands.

<sup>e</sup>Covered for those aged 65 and over and for those under age 21 in 40 states.

<sup>f</sup>Represents full-time employees from medium and large private establishments participating in health care plans in 1989.

<sup>g</sup>Mental health and drug abuse benefits are commonly subject to special limitations, including higher deductibles and copays and lower maximums. Plans also commonly limit the duration of hospital stays for mental health and drug abuse, as compared with other illnesses.

**27 percent of hospital care and nearly 23 percent of physician care in 1988.** Medicare reimbursement policies for hospitals and physicians can have important implications for the ability of providers to invest in new technology, their ability to provide care to the uninsured, and in the fees they charge other payers.

The Medicare program consists of two parts: Medicare Hospital Insurance (HI), also called Part A, pays for acute health care expenditures (primarily hospital care and skilled nursing care). Part A is an entitlement program for Social Security recipients aged 65 and older, anyone receiving Social Security disability benefits for at least two years, and certain persons with chronic kidney disease.<sup>2</sup> Participation in the Medicare Supplemental Medical Insurance (SMI), also known as Medicare Part B, is voluntary. Medicare Part B provides insurance coverage for physician services and outpatient medical care as well as for some hospital services not paid by Medicare Part A.

### **HI Program**

**Medicare Part A provides benefits for inpatient hospital care, skilled nursing care, home health care,**

<sup>2</sup>Persons who are medically determined to suffer from end-stage renal disease are eligible for Medicare coverage if they are fully insured for Old Age and Survivor's Insurance, entitled to receive

**and hospice care.** Under the HI program, beneficiaries are subject to a deductible for each hospital admission, called the inpatient hospital deductible (IHD). The amount of the deductible (\$676 in 1992) is generally indexed to the average cost of hospital days. If the hospital stay exceeds 60 days, the beneficiary is also subject to a copayment, equal to one-quarter of the IHD (\$169 in 1992) per day for the 61st through the 90th days. If the hospital stay lasts 91–150 days, the beneficiary has the option of paying the hospital charges incurred during those days or paying a copayment equal to one-half of the IHD (\$338 in 1991) per day (drawing from a 60-day lifetime reserve). HI provides no coverage after 150 days.

Medicare Part A provides limited coverage for extended inpatient hospital care and care received in a skilled nursing facility. Long-term care, nursing home care, or home health care that is determined to be unrelated to rehabilitation, or is purely custodial, is not covered. In addition, prescription drugs are not covered under Medicare Part A.

### **SMI Program**

**Participation in the Medicare Part B program is voluntary. Elderly persons obtain Part B coverage by**

monthly Social Security benefits, or are spouses or dependents of persons meeting the above criteria.

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**paying a monthly premium. The premiums are usually deducted from monthly Social Security benefits.** The SMI standard monthly premium rates grew from \$3 in 1966 to \$29.90 in 1991 and is scheduled to rise gradually to \$46.10 by 1995. In addition to monthly premiums, enrollees under the SMI program are subject to an annual deductible of \$100 and a copayment of 20 percent on all covered expenses. The Medicare program encourages eligible persons to participate by penalizing those who delay enrolling by charging a 10 percent higher premium for each year in which they failed to enroll.

Medicare Part B finances 80 percent of the cost for most outpatient services for Medicare beneficiaries. A wide array of physician services is covered under Medicare Part B, including visits in the home, office, and hospital. Various miscellaneous health services are also financed by Medicare Part B, including outpatient services received in hospitals and in rural health, community health, and renal dialysis centers. Part B coverage also includes physical and occupational therapy services.

The benefit restrictions and out-of-pocket costs have led many Medicare eligible individuals to purchase supplemental, or Medigap, policies. In 1987, fewer than 13 percent of elderly Medicare beneficiaries had no supplemental coverage. As a result, some of these benefit restrictions may not reflect the actual limits on care for Medicare recipients.

#### ***Medicare Reimbursement and Provider Incentives***

**Medicare's reimbursement policies have had important effects on the care provided to Medicare beneficiaries.** Prior to the 1983 Social Security amendments, Medicare paid hospitals retrospectively on a cost basis. That is, a hospital's reimbursement rate was determined by its historic costs. Starting with a three-year phase-in on October 1, 1983, Medicare began reimbursing hospitals using the prospective payment system (PPS). Under this system, Medicare assigns each admission to one of 472 diagnostic-related groups (DRGs). These

DRGs were designed to group together admissions that require a similar set of resources. The amount of resources needed to provide care to patients within each DRG was compared with the amount of resources needed to treat a patient in a reference DRG. Thus, an index was created that indicated the amount of resources needed to treat a patient within a DRG relative to the reference DRG. DRG payments are calculated by multiplying a standardized payment rate by this index and adjusted for various characteristics.



**The change from a reimbursement rate based on individual hospitals' historic costs meant that hospitals could no longer influence future reimbursement rates by incurring higher costs in the present.**



PPS represented a fundamentally different method of reimbursing hospitals than was commonly used by either public or private payers. **Through a series of legislative changes that culminated in the phase-in of the prospective payment system, hospitals moved from a system that reimbursed them per day based on their historic costs to one that reimbursed them per admission at a prospectively determined rate.** Thus, the incentives that Medicare's reimbursement methodology presented hospitals changed in two distinct dimensions.

The change from a reimbursement rate based on individual hospitals' historic costs meant that hospitals could no longer influence future reimbursement rates by incurring higher costs in the present. The second dimension along which PPS changed hospital incentives was the bundling of the services provided a patient during a single admission. Historically, cost-based, per diem reimbursement provided hospitals with a financial incentive to lengthen Medicare patients' length of stay and to provide more services per stay. Conversely,

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under PPS, hospitals have an incentive to reduce the length of stay and provide the minimum services necessary to care for the patient.

A number of studies have found that PPS has reduced both the average length of stay per admission and the number of admissions. A recent study found that PPS resulted in a cumulative reduction of 28.1 percent<sup>3</sup> in the average number of inpatient hospital days and a 23.6 percent cumulative decrease in the number of inpatient admissions<sup>4</sup> between 1981 and 1988 (Schwartz and Mendelson, 1991). Other studies indicate that there has been no reduction in the quality of care provided to Medicare patients (Kahn et al., 1990).

Growing concern about increases in physician service expenditures, which were exacerbated by the shift from inpatient care to outpatient care due to the advent of PPS in Medicare Part A, resulted in legislation—the Omnibus Budget Reconciliation Act of 1989 (OBRA '89)—to change Medicare's methodology for reimbursing physicians. **In 1992, Medicare began reimbursing physicians using a resource based relative value scale (RBRVS), an index of the resources necessary to provide a given medical service.** RBRVS is based on research performed at Harvard Medical School that examined the amount of physician time, level of training, degree of difficulty, and other overhead costs (including malpractice insurance) used to produce a given medical service. Each procedure is assigned a value that describes the relative amount of resources necessary to perform that procedure compared with a base procedure. A procedure with the value of 2 requires twice as many resources as the base procedure.

Reimbursement for a given procedure is determined by multiplying the RBRVS by a dollar conversion factor and adjusting for geographic differences in costs.

**Like the prospective payment system for hospitals, RBRVS makes physician reimbursement prospectively determined. It removes incentives for physicians to charge higher fees this year in the hope of achieving higher reimbursement levels next year.** Unlike PPS, the new physician reimbursement methodology does not bundle services. Physicians are still reimbursed on a piecemeal basis. The financial incentive to provide as many services as possible for each episode of care remains.

The fee schedule determined by RBRVS generally increases fees for primary care physicians and decreases fees for specialists such as surgeons and radiologists. Higher reimbursements to primary care physicians may encourage these physicians to increase the number of Medicare beneficiaries they treat. Primary care physicians may also be encouraged to increase fees to other payers that are currently less than the new Medicare reimbursable amount. On the other hand, reduced fees for specialists may encourage these physicians either to attempt to decrease the number of Medicare beneficiaries they treat or to increase the volume of services they perform.

### *Implications for the Allocation of Resources*

**The Medicare program provides a good illustration of how health care is rationed through the interaction of the decision makers at various levels in determining the health care patients receive.** Medicare benefit levels, beneficiary out-of-pocket payments, and reimbursement rates and methodologies are determined at the federal level. Medicare benefit levels are not generous compared with most private insurance plans. Without supplemental policies, Medicare beneficiaries face significant financial barriers to purchasing health care services, especially those benefits that are not covered such as prescription drugs. One study found that Medicare beneficiaries aged 65 to 69 received an

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<sup>3</sup>The actual reduction in the number of inpatient hospital days was 18.6 percent. The cumulative reduction in the average number of inpatient hospital days refers to the difference between current levels and the levels that would occur without PPS.

<sup>4</sup>The actual reduction in the number of inpatient hospital admissions was reduced by 13.4 percent. The cumulative reduction in the average number of inpatient hospital days refers to the difference between current levels and the levels that would be occurring without the PPS.

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average of 13.2 prescription drugs per year (Moeller and Mathiowetz, 1989).

**Medicare's PPS reduced Medicare Part A costs by reducing admissions and lengths of stay for Medicare patients** (U.S. Department of Health and Human Services, 1990). Other factors may have also contributed to decreases in the average length of hospital stay, including greater access to home health care, improved technology, and more stringent third party UR (Lohr, 1990). The incentives PPS introduced led hospitals to change the way they interacted with their medical staffs. As a result, physicians have adopted practice styles that have led to a shift of care out of the hospital into the outpatient sector.



**OBRA '89 prohibits physicians from charging more than 125 percent of the Medicare allowable fee to Medicare patients in 1991, 120 percent in 1992, and 115 percent in 1993.**



**Changes in the reimbursement of hospitals and physicians have changed the treatment patterns for Medicare beneficiaries and reallocated health care resources.** Moreover, these changes in treatment patterns resulting from the introduction of PPS were made with few or no changes in the incentives faced by Medicare beneficiaries. The decisions determining the allocation of resources were made by hospitals and physicians in response to changes in their incentives.

Changes in the physician reimbursement may have even more dramatic effects on the allocation of resources for Medicare patients. **In addition to introducing RBRVS, OBRA '89 limits physicians' ability to balance bill.** Before 1991, physicians had the option of assigning their bills to Medicare, meaning that they

accept the Medicare allowable fee as payment in full (Medicare pays 80 percent of the allowable fee, the beneficiary 20 percent), or billing the patient for the difference between the physician's fee and the Medicare reimbursement. In the latter case, Medicare reduced its allowable fee by 5 percent and paid 80 percent of that reduced fee; the patient then paid the remainder.

OBRA '89 prohibited physicians from charging more than 125 percent of the Medicare allowable fee to Medicare patients in 1991, 120 percent in 1992, and 115 percent in 1993. Prior to 1991, slightly more than 40 percent of physicians who had any Medicare patients participated (assigned all of their Medicare claims). Nonparticipating physicians could also assign claims on a case-by-case basis. Estimates of the actual number of claims assigned range from 60 percent to 80 percent, although Medicare beneficiaries with private health insurance are less likely to have their claims assigned. **The effect of these limitations on beneficiaries will depend on a number of factors, but one implication is that, depending on their specialty, physicians may find the cost of treating Medicare patients to be greater than the fees they receive. As a result, even Medicare beneficiaries with high incomes or generous supplemental insurance plans may find their access to physicians constrained.**

## ◆ Medicaid

**State and federal decision makers determine the care received by those in poverty by determining the benefits provided under the Medicaid program and, most importantly, the eligibility requirements.** From the outset, Medicaid program eligibility was limited to a specific portion of the poverty population—namely, women and children qualifying for cash welfare benefits and the elderly and disabled qualifying for cash welfare benefits. **These strict criteria necessarily ration health care resources by denying coverage to a large portion of the poverty population.** Some recent legislative changes have somewhat altered the welfare-Medicaid link and have broadened eligibility in states to include a greater portion of the poverty population.



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The two general categories of individuals who are eligible for Medicaid are the categorically needy and medically needy. Under the categorically needy provision, eligibility is determined by whether or not individuals are in one of the categories approved for Medicaid coverage. Generally, eligible individuals must meet welfare definitions of age, blindness, disability, or membership in a one-parent family with dependent children. Once persons are determined to fall into one of these required coverage groups, they must then meet the specified income and resource criteria set by each state. A few states set more stringent eligibility requirements for recipients of Supplemental Security Income (SSI). As a result, state thresholds for Medicaid vary widely. As of January 1992, the percentage of poverty qualifying a family of three for AFDC ranged from 13.4 percent (\$1,488) in Alabama to 76.8 percent in Alaska (\$10,692) (table 4). Regardless of state eligibility variations, states are required to cover mandatory categorically needy groups (AFDC recipients and SSI recipients who are aged, blind, or disabled; pregnant women with incomes below a certain threshold; and phased-in coverage of children under age 7).

The second major eligibility category is the medically needy. States have the option of covering certain individuals whose income and or resources preclude them from gaining categorical eligibility. To become eligible under the medically needy category, persons must meet the nonfinancial standard for categorical eligibility and have income and resources that fall below the medically needy standard after deducting their incurred medical expenses. Income of the medically needy cannot exceed 133 1/3 percent of the maximum AFDC payment for the same-sized family.

**In fiscal year 1990, 25.3 million persons were Medicaid recipients—85 percent of the 29.9 million eligible persons. Most Medicaid recipients fall into one of three categories: children under age 21, the permanently and totally disabled, or persons aged 65 or over. Children under age 21 comprised the single largest group of Medicaid recipients. Nationally,**

### **11.2 million children were Medicaid recipients in this category.**

The reimbursement methodologies for the various services covered by the Medicaid program also vary widely across the states. Nearly all states reported that in 1989 they were using a prospective reimbursement system for inpatient hospitalization of Medicaid beneficiaries. Only Delaware, West Virginia, and Wyoming reported calculating payment as a percentage of actual costs or charges.

**States determine the prospective payment schedule for hospitals in different ways; two alternative models are selective contracting, which is used by Medi-Cal, the Medicaid program in California, and a DRG all-payer system, which is used in New Jersey.** In an all-payer system, hospital reimbursement rates are determined by a commission, and all purchasers of hospital services pay the same amount. In California, legislation enacted in 1982 established a state agency that accepted competitive bids from hospitals for a per diem reimbursement rate. Hospitals with bids that were unacceptably high were excluded from the Medi-Cal program. The California system allows hospital prices to be set through a market mechanism. While per diem reimbursement gives hospitals an incentive to extend a patient's length of stay, the Medi-Cal program has a longstanding UR process that limits a hospital's ability to arbitrarily extend stays.

New Jersey is one of four states (including Maryland, Massachusetts, and New York ) that have employed all-payer hospital reimbursement systems. The New Jersey all-payer system regulates hospital reimbursement rates and overall revenue. Allowances are made for uncompensated care provided in both inpatient and outpatient settings, and the costs of that care are distributed proportionately across payers. As a result, the need and ability to shift costs across payer types are reduced. Access to care seems to be better in all-payer states; the uninsured in New Jersey average about twice as many physician visits per year as the uninsured nationally (6.6 visits versus 3.2 visits, respectively) (Rosko, 1989).

Table 4  
**Percentage of State Populations Below Poverty; Percentage Receiving  
 Aid to Families with Dependent Children (AFDC) and Medicaid;  
 Annualized AFDC Eligibility Thresholds;<sup>a</sup> and Percentage without Health Insurance**

	Percentage of Nonelderly Residents Who Are Poor	AFDC Maximum Income for Family of Three (July 1991)		Percentage of Nonelderly Receiving AFDC	Percentage of Nonelderly Receiving Medicaid	Percentage of Nonelderly without Health Insurance
		Threshold	Percentage of poverty			
Alabama	19%	\$ 1,488	13.4%	7%	11%	20%
Alaska <sup>b</sup>	12	10,692	76.8	7	18	17
Arizona	14	4,008	36.0	4	6	19
Arkansas <sup>c</sup>	19	2,448	22.0	4	9	21
California <sup>c</sup>	15	8,328	74.8	9	13	22
Colorado	14	5,052	45.4	7	8	17
Connecticut	6	6,972	62.6	6	6	8
Delaware	7	4,056	38.4	5	5	16
District of Columbia <sup>c</sup>	21	4,908	44.1	11	15	24
Florida <sup>c</sup>	15	3,528	31.7	6	9	22
Georgia <sup>c</sup>	15	5,088	45.7	7	11	17
Hawaii <sup>b,c</sup>	11	7,992	62.4	5	7	8
Idaho	15	3,780	33.9	4	6	18
Illinois <sup>c</sup>	14	4,404	39.5	9	11	13
Indiana	13	3,456	31.0	6	7	13
Iowa <sup>c</sup>	11	5,112	46.9	5	8	10
Kansas <sup>c</sup>	11	4,752	42.7	4	6	13
Kentucky <sup>c</sup>	17	6,312	56.7	6	10	16
Louisiana <sup>c</sup>	24	2,280	20.5	7	12	22
Maine <sup>c</sup>	14	7,624	70.2	7	11	13
Maryland <sup>c</sup>	10	4,872	43.7	6	7	16
Massachusetts <sup>c</sup>	11	6,948	62.4	7	10	11
Michigan <sup>c</sup>	15	7,032	63.1	10	14	11
Minnesota <sup>c</sup>	12	6,384	57.3	10	12	10
Mississippi	26	4,416	39.7	10	17	23
Missouri	13	3,504	31.5	7	10	15
Montana <sup>c</sup>	17	4,680	42.0	9	13	16
Nebraska <sup>c</sup>	10	4,388	39.2	4	6	10
Nevada	10	3,960	35.5	3	4	19
New Hampshire <sup>c</sup>	6	6,192	55.6	3	4	12
New Jersey <sup>c</sup>	9	5,088	45.7	5	7	12
New Mexico	22	3,888	34.9	4	12	25
New York <sup>c</sup>	15	6,924	62.2	10	13	14
North Carolina <sup>c</sup>	13	3,264	29.3	5	8	16
North Dakota <sup>c</sup>	14	4,812	43.2	6	10	8
Ohio	12	4,008	36.0	8	9	12
Oklahoma <sup>c</sup>	15	5,652	50.7	7	8	22
Oregon <sup>c</sup>	10	5,520	49.6	5	7	16
Pennsylvania <sup>c</sup>	11	4,836	43.4	7	10	12
Rhode Island <sup>c</sup>	8	6,648	59.7	5	7	14
South Carolina <sup>c</sup>	16	5,280	47.4	3	7	19
South Dakota	14	4,848	43.5	7	9	14
Tennessee <sup>c</sup>	18	5,112	45.9	11	15	16
Texas <sup>c</sup>	16	2,208	19.8	4	8	24

(continued)

Table 4 (continued)

	Percentage of Nonelderly Residents Who Are Poor	AFDC Maximum Income for Family of Three (July 1991)		Percentage of Nonelderly Receiving AFDC	Percentage of Nonelderly Receiving Medicaid	Percentage of Nonelderly without Health Insurance
		Threshold	Percentage of poverty			
Utah <sup>C</sup>	9%	\$6,444	57.8%	4%	7%	10%
Vermont <sup>C</sup>	11	8,076	72.5	5	8	11
Virginia <sup>C</sup>	11	3,492	31.3	6	8	18
Washington <sup>C</sup>	9	6,372	57.2	5	7	13
West Virginia <sup>C</sup>	19	2,988	26.8	7	10	17
Wisconsin <sup>C</sup>	9	6,216	55.8	5	8	9
Wyoming	11	4,320	38.8	6	7	14
Average	14	\$6,114	45.3%	7	10	16

Source: National Governors' Association, July 1991; and Employee Benefit Research Institute tabulations of the March 1991 Current Population Survey.

<sup>a</sup>AFDC/medically needy thresholds current through July 1991. Under AFDC, the term *threshold* refers to that income limit that truly drives program eligibility. In most states, this is the payment standard. In Colorado, Georgia, Kentucky, Maine, Michigan, Mississippi, Oklahoma, South Carolina, Tennessee, and Utah, the threshold is the state's need standard. In these 10 states, the threshold that appears on the table is not what the state pays to AFDC recipients. These states' payment standards are actually significantly lower than the eligibility threshold.

<sup>b</sup>Poverty levels for Alaska and Hawaii differ from other states: U.S.—family of three = \$9,587 Alaska—family of three = \$13,930; Hawaii—family of three = \$12,810.

<sup>c</sup>States with medically needy programs.

The New Jersey system reimburses on a per admission basis. Hospital prices are set by a regulatory agency; there is no control over admissions. Both states reduced Medicaid hospital expenditure growth, although New Jersey's reduction in expenditures was in large measure a result of the reduction in the number of persons eligible for Medicaid.

In 1989, 42 states used a fee schedule to reimburse physicians treating Medicaid beneficiaries. Seven states reimbursed physicians based on the usual or customary fees charged for the same services in the past.

### *Implications for the Allocation of Resources*

**The Medicaid program's low reimbursement rates and limits on benefits have rationed the care available to Medicaid recipients, while its eligibility requirements have rationed health insurance coverage for those without health insurance.** Low reimbursement rates limit Medicaid recipients' access to providers. Fewer hospitals and physicians are willing to treat Medicaid

patients. Table 4 illustrates the clear correlation between the number of uninsured and Medicaid eligibility requirements. As the income thresholds for Medicaid eligibility increase, the number of uninsured within the state falls.

**A large number of studies indicate that the care received by Medicaid recipients and the uninsured differs markedly from that received by privately insured individuals.** A recent report by the U.S. Office of Technology Assessment reviewed this literature and found that Medicaid recipients "are up to 2.5 times more likely than privately insured patients to experience potentially inadequate health services, and up to 4 times more likely to experience an adverse health outcome" (U.S. Congress, 1992).

While these differences are clearly income related, the ability to pay is not the only factor in resource allocation. Clearly, decision makers at both the federal and state levels are rationing health care resources by

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choosing eligibility requirements, benefits, and reimbursement levels that determine both poor individuals' access to care and the treatment patterns of providers caring for these patients. Moreover, physicians and hospitals are making explicit choices on the range of health care services available to these patients based on those benefits and reimbursement levels. Together these decision makers have determined the minimum level of care available in the United States regardless of the patients' ability to pay.

### ◆ The Uninsured

**In 1991, 16.6 percent of Americans under the age of 65, or 36.3 million people were not covered by private insurance and did not receive publicly financed health assistance.** Eighty-four percent of the uninsured live in families headed by some type of worker, but these workers tend to work for smaller employers and earn relatively low incomes. More than 64 percent of uninsured workers are employed by establishments with fewer than 100 employees. In 1991, 54 percent of the uninsured lived in families with annual incomes less than \$20,000.

**The uninsured as a group receive fewer health care services and lower quality care than those with health insurance coverage.** The previously cited report by the Office of Technology Assessment reviewed 24 studies of the relationship between insurance coverage and health care utilization and found that "uninsured Americans may be up to three times more likely than privately insured individuals to experience a lower health care utilization rate, potentially inadequate health care, and adverse health outcomes."

#### *Implications for the Allocation of Resources*

The mechanism for rationing health care services for the uninsured is much different than for those with insurance. The uninsured are much less likely to have a usual source of care, more likely to receive care in an emergency room or a hospital outpatient department,

and less likely to be admitted to a hospital. Moreover, the uninsured are more likely to experience avoidable admissions or admissions for conditions that could have been treated on an outpatient basis had they been diagnosed early enough, and are likely to be more severely ill on admission. Studies have found that, once admitted to the hospital, the uninsured are more likely to have shorter lengths of stay than privately insured individuals with similar conditions. Finally, the uninsured are more likely to have adverse results and higher mortality rates even after adjusting for the severity of illness.

Table 5 provides results from a study of the differences in treatment of heart attack victims based on their source of health insurance coverage. While there are slight differences in length of stay and type of hospital in which treatment is sought between the uninsured and privately insured patients, there are large differences in the mortality rates.

The uninsured are also more likely to be severely ill when they do need care, in part because they are unlikely to have received preventive care or care early in an episode of illness that might have prevented a more serious condition from developing. Table 6 illustrates the results of a study of children's utilization of care by their sources of health insurance coverage. Uninsured children are less likely than those with private coverage or on Medicaid to have had any physician visits and are much less likely to have had a well child visit.

### ◆ Private Insurance

**Of all the sources of health care financing, private insurance is the least associated with the narrow definition of health care rationing, "not all care expected to be beneficial is provided to all patients." However, the choices of health care services available to the privately insured may be constrained, and the individuals making decisions affecting those choices may not be the patients.**

Although the U.S. health care delivery system presents

Table 5  
**Clinical Characteristics by Insurance Status, Acute Myocardial Infarction Patients, Massachusetts, 1987<sup>a</sup>**

	Uninsured	Fee-for-Service	Health Maintenance Organization
Patients	419	3,755	798
Average length of stay (days)	9.8	9.5	8.9
Percentage Admitted to Major Teaching Hospital	30.8	26.5	27.2
Percentage Admitted to a Public Hospital	6.6	8.4	9.9
Inpatient Deaths	10.7	6.5	7.1
Total Deaths including 30-Day Followup	13.1	8.3	9.4

Source: Gary J. Young and Bruce B. Cohen, "Inequities in Hospital Care: The Massachusetts Experience," *Inquiry* (Fall 1991): 255–262.

<sup>a</sup>The study examined data on 4,972 patients admitted to a Massachusetts hospital on an emergency basis in 1987 and diagnosed with acute myocardial infarction. The patients were classified into three groups: having fee-for-service insurance, having prepaid coverage through a health maintenance organization, or being uninsured at the time of hospital admission.

a variety of choices with respect to private health insurance plans, the actual choices available to an individual may be limited. In a perfect market, consumers would sort themselves across health insurance plans so that all would receive the most appropriate insurance package-price combination for their income levels. In actuality individuals' ability to choose from the variety of coverages offered is a function of income, occupation, health status, and most importantly, employers' decisions.

**Income is an important determinant in rationing health care services by limiting a person's ability to choose among insurance plans, or even to procure a plan. But even individuals with relatively high incomes face some constraints on their choice of health plans.** Poor health status or the presence of pre-existing conditions also rations care by limiting an individual's ability to purchase health insurance. It has been estimated that about 1 percent of Americans under age 65 are uninsurable. These individuals have chronic illnesses or other characteristics that make it difficult or impossible for them to purchase health insurance. Twenty-four states have responded to this problem by establishing health insurance risk pools. Generally, these pools offer health insurance policies to those under age 65 who are unable to purchase health insurance because of a medical condition. Approxi-

mately 60,000 individuals participate in state risk pools, far below the number of people estimated to be eligible for them. Although data are lacking, it seems likely that many potentially eligible individuals are unable to afford the coverage offered by the pools. The chronically ill, as a group, are likely to have lower incomes than other groups. Most states' risk pools do not offer financial assistance to low-income applicants.

The tax preferences given to employer-sponsored health plans, coupled with the lower administrative costs and the ability to avoid or reduce adverse selection<sup>5</sup> give employer health plans a considerable cost advantage over individually purchased plans. Employers must choose plans that are most desired by the entire group of workers they wish to attract and retain. Individuals must consider health plans in their employment decisions. As a result, individuals choices in both the amount and type of health insurance may be restricted. Moreover, separation from the labor market through job loss, divorce, or death may result in an

<sup>5</sup>Adverse selection occurs when those individuals most likely to need health care services are also most likely to purchase health insurance. Tying the purchase of health insurance to employment alleviates adverse selection in that essentially all employees purchase the benefit.

Table 6  
**Ambulatory Care of Preschool Children, United States, 1987**

	Number (thousands)	Any Visits (percentage)	Well-Child Visits <sup>a</sup> (percentage)	Recommended Visits <sup>b</sup> (percentage)
Total	18,260	86.5%	60.0%	41.8%
Income <sup>c</sup>				
Poor	4,181	78.8	48.4	32.7
Other low	3,969	82.8	53.9	33.3
Middle/high	10,111	91.2	67.2	48.9
Insurance <sup>d</sup>				
Uninsured	1,694	79.8	48.5	31.4
Private insurance	11,339	90.4	64.7	47.5
Medicaid	2,614	81.7	56.4	38.0
Uninsured Part-Year				
Private	1,480	82.4	52.1	30.0
Medicaid	926	72.7	46.4	21.6

Source: P.F. Short and D. Lefkowitz, "Encouraging Preventive Services for Low-Income Children: The Effect of Expanding Medicaid," *Medical Care* (September, 1992): 766–780. Data are from U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, 1987 National Medical Expenditure Survey, Household Survey (Washington, DC: U.S. Department of Health and Human Services, 1987).

<sup>a</sup>Well-child care visits are defined as ambulatory visits identified by respondents to the 1987 National Medical Expenditure Survey, Household Survey as mainly for well-child care or immunizations and those that were not associated with any particular condition or symptom.

<sup>b</sup>Recommended visits are those visits that meet the American Association of Pediatricians (AAP) guidelines for well-child care visits. The AAP recommends visits at 1,2,4,6, 9,12,15,18, and 24 months of age and then annually for older preschool children.

<sup>c</sup>Low-income is defined as below 200 percent of the poverty level.

<sup>d</sup>Categories include children who were uninsured all year, private all year, or Medicaid all year (and not private all year). The part-year uninsured are shown according to their part year coverage. Children who were covered part of the year by private insurance and the rest of the year by Medicaid are included in the totals for all children and by income category but are not shown in the insurance categories.

inability to purchase health insurance coverage. Individuals without health insurance are predominantly nonworkers, self-employed, workers in small establishments, or persons living in families headed by a member of one of these groups.

**If workers with health insurance are reluctant to change jobs because of concern about health insurance, they may forgo opportunities that would increase their productivity.** Workers in families in which one or more members have pre-existing conditions face important barriers in choosing their optimal employment. Many plans will not cover individuals with pre-existing conditions or will impose service requirements that require a minimum tenure on the job before the employee becomes eligible for health benefits. As a result, employees considering changing employers may

have to weigh a loss of health benefits against whatever advantages the new employer offers. Their choices are limited in such a situation.

Employer-sponsored health plans generally cover inpatient care, physician office visits, outpatient surgery, diagnosis, x-rays, lab tests, and prescription drugs. In most cases, these benefits are subject to some sort of cost-sharing arrangement and maximum benefit limitations. Many plans also offer coverage for mental health care and substance abuse treatment, most often with much more restrictive limits than for other types of care.

Private health plans and public programs have been evolving rapidly in the last decade in response to health care cost inflation. Employers' reaction to increases in



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health care costs has varied depending on the labor market they face, the amount of competition in their product market, and the level of their market power in their specific health care services markets. **In general, employers have adopted four types of cost management strategies: cost sharing, UR, packaging provider services, and selectively contracting with providers.** These strategies have been combined in the various managed care plans used by many employers.

The characteristics of insurance coverage influence the actual price individuals pay for health care services and therefore their demand for health care services. For example, the Rand Health Insurance experiment<sup>6</sup> found that individuals in plans with a 25 percent coinsurance rate had 15 percent lower per capita costs than individuals in plans with a zero coinsurance rate. (Manning et al., 1987). The 15 percent may understate individuals' response to increased coinsurance rates because the experiment compensated those who were in plans with greater cost sharing to induce them to accept these plans. Cost sharing had its largest effect in reducing the use of outpatient care. However, some of the care forgone may include preventive care, which might result in larger inpatient costs. The Rand study found that low-income individuals with lower coinsurance rates experienced specific health gains for three prevalent chronic problems—high blood pressure, myopia, and dental care—that are relatively inexpensive to diagnose and treat.

UR includes a number of strategies for intervening in the decision to purchase health care. These may include pre-admission certification, in which care is reviewed before it is given to determine its appropriateness; concurrent review, or case management, in which care is monitored as it is provided; and retrospective review, which reviews care after it is given. One study

examined the effect of UR on the experience of 263 groups insured by a major insurer over 12 quarters from 1984 to 1986. They found that UR reduced admissions by 13 percent, inpatient days by 11 percent, and total medical expenditures by 6 percent (Feldstein, et al., 1988).

**Another cost management strategy is to change provider reimbursement from fee-for-service or cost-plus to payment per diagnosis, by insured person, or some other bundle of services.** For example, providers are paid a set fee for each particular diagnosis or plan participant. Provider income is the difference between the costs of providing care for that diagnosis, or that participant, and the fee. Packaging services alters provider incentives away from the provision of more care toward weighing the costs of care in their medical decision making.

HMOs, in some form, are a type of provider service package. An HMO agrees to provide a prescribed set of benefits as needed by enrollees for a capitated payment: a fixed amount per enrollee. The HMO thus bears the risks associated with the need and delivery of care. HMOs may be the most studied of the cost management strategies. Depending on the HMO, total costs for enrollees have been found to vary between 10 percent and 40 percent lower than more traditional health insurance programs. These costs differences result from lower rates of service, especially lower hospital admission rates (Luft, 1981).

There is some question as to whether HMO cost reductions stem from selection bias. Some employers offering an HMO option in addition to a comprehensive plan have claimed that employees who represent lower risk opt for the HMO, while higher cost patients remain in the comprehensive plan, resulting in higher overall health care costs. One study found that families selecting HMOs were younger, had lower income, and had lower claimed health care expenses prior to enrollment than families selecting a fee-for-service plan (Buchanan and Cretin, 1986).

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<sup>6</sup>For a description of the Rand Health Insurance Experiment, see Willard G. Manning, Joseph P. Newhouse, Naihua Duan, et al., "Health Insurance and the Demand for Medical Care," *American Economic Review* (June 1987): 251–276.

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The Rand Health Insurance Experiment randomly assigned individuals to an HMO. The individuals assigned to the HMO had lower utilization rates than those in the indemnity plans, although not as low as those who chose the HMO. The study found no differences in health outcomes between individuals enrolled in HMOs and those in indemnity plans with no cost sharing, except for low-income individuals who entered the experiment in poor health. The Rand researchers concluded the cost differences resulted mainly from cost effective practice styles rather than differences in enrollees.

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**The effects of health care cost inflation have altered the way health care is rationed by changing the types of health insurance plans available either on an individual basis or through the workplace.**



New health care plans have been developed that combine attributes of preferred providers organizations (PPOs) and HMOs with UR and objective performance criteria for selecting providers. One of the most important features of the selectively contracted networks is the criteria used to identify providers for inclusion in the network. Most networks require that providers agree to accept UR procedures, refer patients only to other providers in the network, and accept the network's reimbursement procedures. The networks also have quality standards, such as board certification, that the provider needs to meet in order to be considered for participation. Finally, providers practice patterns may be monitored while in the network to identify and remove providers with unjustifiably high costs.

Objective information on the quality of care is being used by some employer plans to identify providers for selectively contracting. Employers are contracting with specific hospitals for high cost procedures such as open heart surgeries and transplants, and are using a number of criteria, including mortality and morbidity rates, to select hospitals. In selectively contracting on the basis of these criteria, employers are explicitly using outcome measures for determining reimbursement.

Many of these new networks and network models of HMOs employ primary care physicians to act as gatekeepers to manage health care costs. These gatekeeper physicians provide primary care for insured patients and control their access to specialists and sometimes to hospital care. A number of different financial arrangements have been developed between networks and gatekeeper physicians. Under some of these arrangements, the gatekeeper bears some of the risks. For example, the gatekeeper might be reimbursed on a capitated basis. As a result, the gatekeeper physician has a financial incentive to manage the patients care as cost effectively as possible. Gatekeepers thus have an incentive to limit patients' access to specialists and other expensive health care services.

### *Implications for the Allocation of Resources*

Traditionally, privately insured Americans have had very few constraints on the type and quantities of health care services, the types of providers, or the sites of care. **However, the effects of health care cost inflation have altered the way health care is rationed by changing the types of health insurance plans available either on an individual basis or through the workplace. Many of the choices that were once made by patients, or by patients and their physicians are now being made by insurers or employers.** Increasingly, health insurance plans are restricting patients' choice of providers. The range of health care services available to treat a given condition may be restricted by health plans with UR features. The sites at which care can be provided may be constrained under the health

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plan. Finally, the providers themselves—HMOs, for example—may bear some of the risks of the efficacy of care and may limit some of the health care services available to patients.

An individual's ability to change insurance plans to achieve his or her preferred choices in providers or treatments may be restricted by the employment-based system of financing health care benefits. Thus, the decision makers, in determining the allocation of health care resources, are moving away from the privately insured individual or the patient-physician as a unit toward insurers, managed care medical directors, and employers. In addition, state and federal regulations may place limits on these decision makers, which also affects the care available to privately insured individuals.



**The physician has been the primary decision maker in how health care resources are rationed.**



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**While the shift in decision making clearly affects the allocation of resources, these changes may also constitute rationing under more narrow definitions. Any cost management method that employs any cost-benefit analysis may restrict an individual's access to beneficial care, if the costs of that care are large relative to the benefits. Moreover, a patient may view restrictions on his/her access to care provided by a specialist as a denial of beneficial care.**

The evolution of the private health care insurance market has altered the way decisions on the purchase of health care services are being made. The constraint individuals have on their choice of health plans, and the constraints that choice places on their choices of providers and procedures, means that the relevant

decision makers are at least to some extent moving further away from the patient. These changes, coupled with changes in the way publicly financed health care programs reimburse providers, have also changed the incentives to providers and altered their decision making.

### ◆ Providers

Consumers do not possess or have easy access to information on the appropriate diagnosis for their set of symptoms and the best treatments or procedures given that diagnosis. Moreover, they lack the means to evaluate the quality of care they receive in the course of their treatment. As a result, **unlike decisions made in other markets for which consumers have the responsibility, decisions on which health care services to purchase and in what quantity are made by physicians<sup>7</sup> acting as the consumers' (patients') economic agents.** Efforts by insurers, employers, and public programs to contain health care cost inflation have attempted to alter the allocation of health care resources by changing or limiting physician behavior.

### *Physicians*

**The physician has been the primary decision maker in how health care resources are rationed.** The patient relies on the physician to determine the appropriate health care services to diagnosis and treat his or her symptoms. The physician acts as the patient's agent in procuring the necessary services. In theory, an agent would seek to understand his/her client's preferences and financial status and then procure the same services that the client would procure if the client were fully informed. In practice, the agent's incentives may not align with the client's; there is a large amount of literature examining this problem and designing reimbursement schemes that align agents' incentives with those of their clients.

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<sup>7</sup>The term physician is used here to mean chiropractors, psychologists, physicians, and all other health care providers.

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**An important policy question has been to what degree do physicians, acting as agents for their patients, determine the range of services offered or the quantity of services purchased to suit their own interests rather than those of their patients.** It has often been asserted that physicians increase the number of services they perform in response to a decrease in price, so that they maintain their desired income level. The empirical evidence supporting this supposition is mixed, but it is clear that physicians alter their decision making in response to the financial incentives presented to them by their patients' insurance plan.

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**More than 38 percent of the nation's health expenditures are for hospital care.**

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Moreover, Medicare's adoption of PPS for hospitals has affected the number of admissions, length of stay, and the intensity of care per day of hospital stay. All these factors are controlled by the admitting physician. The implication is that physicians respond to a variety of incentives in making medical decisions that determine the allocation of health care resources.

**Changes in private and public financing of health care services determine at least some of the decisions that are moving the allocation of health care resources away from the physician-patient relationship.** UR, managed care networks, and changes in hospital reimbursement have altered the relationship between physicians and their patients and affected medical decision making. UR programs review care and restrict treatments available. Medical directors of managed care networks develop practice guidelines that limit the choices available to physicians and their patients. Hospitals, responding to their own incentives, restrict the resources available to physicians and thus limit access to health care services.

## *Hospitals*

The incentives faced by physicians are not entirely described by their patients' insurance coverage. For most medical specialties, inpatient care is an important part of the physicians' practice. **The relationship between hospitals and their medical staffs is important in determining how care is rationed to patients with any type of insurance coverage and in determining physicians' practice patterns.**

Hospitals and their access to capital markets have always played an important role in determining the allocation of resources in their local markets. Hospitals have traditionally been the repository of new or expensive technologies, the center of health care education, and the source of last resort for access to health care resources.

More than 38 percent of the nation's health expenditures are for hospital care. There were over 6,649 hospitals, with 1,213,000 beds, in the United States in 1990 (American Hospital Association, 1990). On average, just over 30 percent of these beds are unoccupied. Although hospitals are often regarded as quasi-public institutions in public policy, their objectives and behavior vary a great deal by their location, the amount of competition they experience, and their ownership status. Of the 5,240 short-term general hospitals in the United States, slightly more than 13 percent were for-profit, while 59 percent were private not-for-profit, and the remaining 28 percent were operated by state and local governments. The ownership of hospitals is important in determining both their mission and their sources of funding for achieving this mission.

Hospitals rely on their medical staffs to provide patients and determine the volume of hospital services they will purchase. Both hospitals and physicians supply inputs to the production of hospital services. Yet, the relationship between hospitals and their medical staffs is complex and not usually determined by an explicit market relationship.

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Hospitals and their medical staffs are reimbursed separately, and often by very different means, for their joint services. Moreover, physicians and hospitals may have different objectives and face different constraints. The production of hospital services is determined by the separate external markets faced by hospitals and their medical staffs, their respective objectives, the medical staff's composition, the hospital's internal organization, and the implicit market between hospitals and their medical staffs (Custer, 1986).

The medical staff physicians act as managers of the production of inpatient services. The physician's choice of treatment for each set of symptoms depends on financial incentives, the information available, the range of technologies available, personal preference, and administrative constraints imposed by the hospital.

Hospitals have generally competed with one another for physicians (and the patients they admit) on the basis of quality signals. These quality signals include the range of services or technologies available at the hospital. Hospitals thus have an incentive to invest in new technologies as they are introduced, to create overcapacity, to provide instant access to care, and to create amenities that are attractive to patients and physicians. As a result, 36 percent of hospitals with more than 200 beds have magnetic resonance imaging and 86 percent have CT scanners—expensive technology that in many cases is underutilized.

### *Implications for the Allocation of Resources*

**Changes in the reimbursement methodologies used by public and private payers have altered the incentives for hospitals to invest in new technologies, reduced their ability to subsidize uncompensated care, and changed the relationship between hospitals and physicians.** Changes in reimbursement have lowered hospital operating margins and reduced their ability to finance the purchase of new technologies. Concurrently, many hospitals faced with prospective payment from public payers and selective contracting by private payers are rationing health care by attempting to

restrict access to their services by the uninsured and place limits on their medical staffs' treatment patterns. Physicians, partly in response, are giving more care on an outpatient basis and are treating patients they have admitted to the hospital more intensely.

### ◆ **Government Regulation**

**The allocation of health care resources is also affected by government regulators' decisions. In addition to the Medicare and Medicaid programs, the various levels of government regulate the health insurance markets and the health care services markets.** States have traditionally regulated the insurance market, but the Employee Retirement Income Security Act (ERISA) pre-empts many employer-based health care plans from state regulation. States and local governments also license health care providers, while the federal government regulates medical technology. Each level of government makes decisions that determine how health care resources are rationed.

#### *State Health Insurance Regulation*

**State regulation of health insurance has attempted to meet a number of goals: prevention of fraud, regulation of premiums, and expansion of coverage. One method that states have used to attempt to expand coverage has been to mandate the benefits that must be included in all health insurance policies.** State mandates have an important influence on an employer's decision to offer health insurance benefits and the way in which these benefits are financed. Recent court decisions have affirmed that ERISA exempts from state insurance regulation employers who elect to self-insure<sup>8</sup> their health insurance benefits.

Mandated benefits can be grouped into four general categories: provider mandates, treatment mandates,

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<sup>8</sup>Employers that self-insure pay the costs of their health benefits from a pool of their own money instead of paying premiums to insurers.



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special population mandates, and coverage continuation mandates (Gabel and Jensen, 1989).

- Provider mandates require that an insurer reimburse different types of providers, such as psychologists, podiatrists, or chiropractors, in the same manner as they reimburse physicians. These mandates are often seen as a means of reducing health care costs by shifting care from more expensive physicians to less expensive providers in a way that enhances competition.
- Treatment mandates require coverage for certain procedures (such as in vitro fertilization) or diagnoses (such as mental health and substance abuse). These treatments are generally among the most expensive to cover. Without the mandates, many employers and purchasers of individual policies would forgo this coverage.
- Special population mandates require coverage for groups that may not have coverage (newborns or adopted children) or that may be expressly denied coverage (the physically handicapped).

The impact of state mandates on the availability, cost, and quality of health care varies by the type of mandate. There is little evidence concerning the effect of special population mandates on the health care delivery system, although for the most part the populations affected are small. Provider mandates have increased the range of treatment choices available to health care consumers. The available evidence on the effect of alternative mental health providers (psychologists and social workers) is mixed. One set of studies indicates that mandating the services of these providers results in increased competition, which lowers provider fees (Frank, 1982) without increasing utilization (Fairbank, 1989). Another study found that including psychologists' services in a benefit plan significantly increased the plan's premiums (Jensen and Morrisey, 1990). The difference in the quality of care provided by a social worker relative to a psychiatrist, or a chiropractor relative to an orthopedist, is at least partly subjective.

Treatment mandates often target diagnoses and procedures that add significant costs to group health plans. **One study found that adding coverage for substance abuse treatment increases the monthly premium for group health insurance by about 9 percent, while inpatient psychiatric care increases the monthly premium for family coverage by about 13 percent** (Gabel and Jensen, 1989). These costly mandates are often cited as reasons that small employers do not offer health insurance benefits and larger employers choose to self-insure. However, this study could not find a statistically significant relationship between mandates for the provision of psychologists' services, mental health benefits, and substance abuse treatments and the likelihood that small employers offer health benefits to their employees. Of this group of mandates, only psychologists' services were significantly related to medium and large employers' decisions to self-insure.

### *Regulation of Health Care Services*

**States regulate the delivery and financing of health care in a variety of other ways. State boards license physicians and determine which other providers are permitted to provide care. States differ, for example, in the limitations placed on the practices of chiropractors, social workers, and podiatrists.** They also differ in their limitation of the types of services offered in free-standing clinics and surgery centers. Several states limit the amount that physicians can charge Medicare recipients above the level at which Medicare reimburses.

The intent of licensure laws is to establish a minimum quality level that all providers must meet. In practice, these laws also limit the number of providers, although those limitations are dependent on the strength of the licensing laws. Other regulatory mechanisms have had important implications for the allocation of health care resources.

Between 1964 and 1972, 22 states passed certificate-of-need (CON) laws that require health care facilities to gain approval from a state agency before undertaking



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any significant capital improvements. These laws varied considerably across states both in the types of facilities and investments covered and in their effectiveness. Hospitals and nursing homes were generally covered, as well as other facilities such as medical laboratories. Investments covered included new plants and beds, new services, and new equipment to support existing services.



**The regulation of the health care services market affects the allocation of health care resources by limiting the choices available to consumers.**



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In general, these laws have not been effective in restraining total costs or even hospital investments (Cohodes and Kinkead, 1984). They have most often been used by competing hospitals to restrict investment by their rivals. In some states, however, CON programs have effectively altered hospital investments. The net effect on total health care costs within these states is unclear, but one study found that more stringent CON regulation actually increased hospital costs (Sherman, 1988). Another study found that, after controlling for patient and hospital characteristics, states with stringent CON programs had higher mortality rates among Medicare patients than states without such programs (Shortell and Hughes, 1988). Since 1982, 11 states have repealed their CON laws.

The federal government regulates medical technology, especially pharmaceuticals. Drugs are the only class of medical services that must provide evidence of efficacy before they can be introduced into the health care services market place. New drugs do not have to prove that they are *more* effective than existing therapies, but studies meeting defined standards of statistical validity

and significance must be performed to prove that the outcome from taking the drug is better than no treatment at all. The Pharmaceutical Manufacturers Association reports that it takes an average of 10–12 years of research and development to bring a new drug into the market. Other types of medical innovations, such as new surgical procedures, can be introduced into medical practice without evidence that they improve medical outcomes.

***Implications for the Allocation of Resources***

**The regulation of the health care services market affects the allocation of health care resources by limiting the choices available to consumers. The rationale for government regulation is to improve the quality and distribution of health care services.**

Without regard to whether these regulations accomplish their purpose, they are only effective if they actually do limit choices. In some cases they may have unintended effects on the allocation of health care resources. Mandates on the benefits that must be included in an insurance plan may increase the utilization of important health services for those with health coverage, but they may also increase the costs of health insurance, causing some individuals to choose not to purchase coverage. CON laws may limit investment in needed equipment as well as unnecessary capital. The regulation of pharmaceutical drugs may prevent harmful substances from being sold, but it may also delay the introduction of lifesaving therapies.

**◆ Conclusion**

This *Issue Brief* has attempted to examine some of the ways in which health care services are currently rationed in the U.S. health care system. Using a broad definition of rationing to include any mechanism that allocates scarce resources, the *Issue Brief* has attempted to examine the health care system along two dimensions: what differences exist in the utilization of health care services and who makes the decisions that creates those differences.

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The U.S. health care system is distinguished by the number and variety of limits placed on consumers of health care services. **Not only are there differences in the utilization of health care services between those with health insurance coverage and those without, there are significant differences between publicly insured individuals and privately insured individuals, Medicaid and Medicare recipients, group and individual coverages, and individuals with indemnity coverage and those enrolled in HMOs.**

There are many decision makers in the health care delivery system, but decisions on the consumption of health care services—unlike decisions in other markets—are not primarily being made by the consumers of these services. Health care cost inflation has led to changes in the way health care is financed in both the public and private sectors. As a result, the choices available to consumers are constrained not only by income but also by employers, insurers, providers, and government regulators. While individuals have some choice of health insurance plan, that choice may be constrained by income, location, or the labor market. Employers and insurers searching for the most cost effective means to provide health benefits are limiting the choices of providers and treatments available to individuals covered under their plans, and changing the incentives faced by providers. State and federal governments have determined the benefits available to individuals covered under Medicare and Medicaid. State and federal governments regulate health care, determining the characteristics of the health insurance market, the number and types of providers, and the introduction and dissemination of new technology.

This *Issue Brief* has outlined the interaction of decision makers that affects the allocation of health care resources. None of the decision makers are acting in a vacuum, and each decision maker's choices affect other decision makers' behavior. Reforming the health care system will affect the allocation of health care resources, primarily by changing the decision makers.

Much of the debate on health care reform has centered on the notion that efforts to increase access to care and control costs may lead to health care rationing. However, we are rationing health care resources in our present health care system. More appropriately, the debate should focus on the mechanism for allocating health care resources and the tension between individual decision making and social objectives. Are there alternatives to the present system which will ration health care more equitably and efficiently?

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