



industries more than doubled in the region and grew 80 percent nationwide. Hospitals and medical and dental labs multiplied almost twice as quickly in the Southeast as in the nation.

Despite this rapid growth the industry still commands a smaller portion of the labor force in the Southeast than its 7.4 percent share nationwide. Southeasterners spend less per capita for health care, but some of this cost differential is probably due to the region's lower cost of living. The per capita availability of health professionals, such as dentists, doctors, and nurses, is lower in the Southeast, and its other health resources, such as nursing homes, have approached but not yet reached national standards of availability.¹

This disparity is surprising since the region's share of elderly residents is higher than the nation's and the difference in this share is expected to increase. Despite generally lagging health-care resources, the Southeast has proportionately more hospital facilities.

The health-care industry's growth during the 1970s and early 1980s entailed spiraling medical cost increases, but several changes are taking place that augur better cost control. Most of these changes will heighten consumers' and suppliers' sensitivity to price increases. For instance, higher deductibles and copayments for many medical services should help dampen demand. Enroll-

Dynamics of Growth and Change in the Health-Care Industry

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The aging population, availability of funds for training and capital expansion, and the prevalence of health insurance have stimulated health-care industry growth in recent decades. But recent cost-cutting changes point to slower expansion in the future.

Health care has been an important growth industry in recent decades, particularly in the Southeast. The region's job ex-

pansion in medical care has outpaced that of most other local industries as well as the national rate of health care employment growth. From 1971 to 1981 jobs in health-related

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ment in health maintenance organizations, which has expanded more rapidly in the Southeast than in the nation over the last decade, should enhance member doctors' and patients' price consciousness since patients prepay fees annually rather than on a fee-for-service basis. Likewise, the institution of Medicare reimbursement according to illness or injury rather than cost of treatment should foster price consciousness among hospital administrators. The growth of the for-profit sector, particularly in hospital administration, should increase competition and lower prices in this industry segment, the largest source of health-care jobs and inflation. The proliferation of for-profit health-care establishments is significant for the Southeast, where one-fifth of all hospital beds are in investor-owned hospitals, compared with less than one-tenth nationally. A fast-growing population and more flexible regulatory climate for health care have swelled the industry's for-profit segment in the Southeast relative to other regions.

If successful, these developments portend more efficient allocation of resources and higher productivity but also slower job growth and possibly a less equitable geographic distribution of health manpower and services. Hospitals in the Southeast may be affected since the region has more beds per capita and lower occupancy rates than in the nation. However, the for-profit sector's strong base and rising demand, attributable both to migration and to the region's disproportionate share of elderly, should mitigate the effects of these changes on health-care jobs in the Southeast.

Purpose of Study

In an effort to understand future economic trends in the Southeast, the Federal Reserve Bank of Atlanta has conducted ongoing research into growth industries with a significant base in this region. The service sector has been an important source of employment growth and stability in many parts of the Sixth Federal Reserve District during the past decade and is likely to continue to grow. The health-care industry is an important component of the service sector. Its size, measured in jobs or share of Gross National Product, rivals that of many basic industries in the manufacturing sector.

The medical-care industry exemplifies the strengths of the service sector, particularly in terms of job creation and resistance to cyclical fluctuations. It also reflects a chief weakness of service-based employment, namely, relatively poor productivity and lower wages. Despite the lower level of wages, health-care costs have been rising rapidly. Chiefly because of these cost increases, changes are taking place in the industry that may presage different patterns of future growth. While regulation to control costs is increasing, the health-care industry appears to be experiencing a revival of competition much like that occurring in the transportation and financial services industries.

The purpose of this article is to identify the dynamics of recent growth in the health-care industry in order to evaluate the impact of current changes and future trends. The first section describes the increasing share of resources, especially labor, allocated in recent decades to the industry in the Southeast and the nation. The underlying causes of these trends are examined next by comparing the industry's functioning with the market norm of economic theory. Finally, the outlook for the health-care industry, particularly in the Southeast, is evaluated.

Health-Care Industry Growth

Growth Rate. From 1971 to 1981 the number of health-care jobs in the nation rose 80 percent, more than double the rise in nonfarm employment. Of the 10 types of health-care establishments, chiropractors' offices, a minor area, grew fastest over the decade (see Table 1). Allied health services (optometrists, health practitioners, outpatient services, and related establishments) increased at the second fastest rate.²

The growth rate was more rapid in the Southeast (see Chart 1). Medical-care jobs grew by 124 percent over the decade. In the Southeast, allied health services grew at the fastest pace, surpassing chiropractors' offices. Regional growth in hospitals as well as medical and dental labs surpassed the national rate.

Volume Gains. From 1971 to 1981 the health-care industry added 2.5 million jobs to the national economy. Almost 90 percent of the new health jobs were provided by hospitals, nursing care facilities, allied health services, and physicians' offices. Hospitals accounted for the largest share of that gain, while nursing-care facilities produced the second largest volume increase.

Table 1. Health-Care Employment, United States and Southeast, 1971 and 1981

	United States				Southeast			
	New Jobs 1971-81	Percent Increase	Percent Share		New Jobs 1971-81	Percent Increase	Percent Share	
			1971	1981			1971	1981
Total Health	2,468,629	80.4	100.0	100.0	330,440	124.2	100.0	100.0
Physician Offices	383,161	96.1	13.0	14.1	59,054	114.7	19.4	18.5
Dental Offices	197,539	114.8	5.6	6.7	23,737	131.8	6.8	7.0
Osteopath Offices	12,048	93.1	0.4	0.5	1,011	105.3	0.4	0.3
Chiropractor Offices	18,407	257.3	0.2	0.5	2,176	275.1	0.3	0.5
Hospitals	979,823	53.7	59.5	50.7	145,607	108.4	50.5	46.9
Medical & Dental Labs	45,748	81.0	1.8	1.9	7,277	143.6	1.9	2.1
Allied Health Services	265,219	210.0	4.1	7.1	33,629	296.4	4.3	7.5
Nursing-Care Facilities	563,281	119.9	15.3	18.7	57,052	130.0	16.5	16.9
Drugs	45,001	35.7	0.2	0.2	6,351 ^a	96.7	0.1	0.1
Supplies & Instruments	61,241	78.8	0.1	0.2	4,604 ^a	73.0	0.1	0.1

^aAlabama and Mississippi are not included because data are unavailable for 1971.

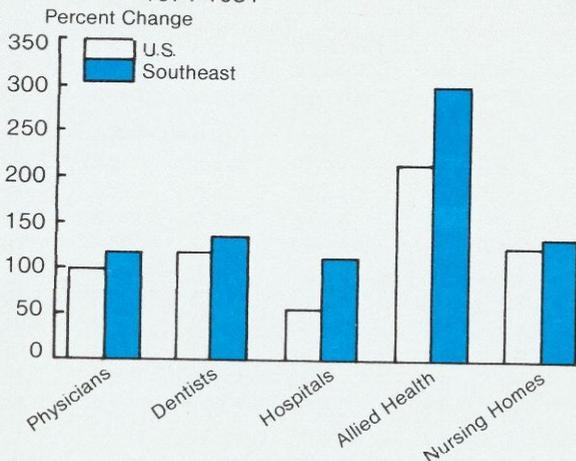
Source: Calculated by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, *County Business Patterns*, Southeastern States and U.S. 1971 and 1981.

Much of the growth in the physicians' category comes from doctors' increased tendency to incorporate; previously, most doctors were self-employed and categorized separately. The growth in hospital and nursing home employment has been fueled by sociological or demographic changes, such as the increasing proportion of the population age 65 and over. A recent study estimated that the elderly, who comprise one-tenth of the population, account for more than one-third of hospital-care days, one-fifth of surgical procedures, almost one-third of total personal health-care expenditures, and one-fourth of hospital discharges. The biggest share of expenses is attributable to those near death: one-third of Medicare expenses are incurred by the 6 percent of Medicare recipients in their final year of life.³ Another researcher estimated approximately 1 percent of GNP is now spent on elderly persons in their last year.⁴ In addition, as a larger percentage of women enter the work force people must increasingly satisfy their need for low or intermediate-level medical care by purchasing the services of nursing homes. Moreover, the increased mobility of workers and retirees separates older generations from younger family members. These trends toward higher mobility and greater female labor force participation reinforce the demand spurred by the relative increase in numbers of the elderly, who are the most likely to use nursing-care facilities.

Relative Growth. The share of nonfarm employment derived from health care rose nationally from 5.5 percent in 1971 to 7.4 percent in 1981. In the Southeast, the industry's share increased from 4.3 to 6.4 percent. Although the medical industry's proportion of nonagricultural employment in the Southeast remained below that of the nation, a pattern of convergence is evident. This relatively more rapid growth in health-related jobs is attributable partly to the region's above-average population growth, resulting from in-migration. In addition, federal policies have been implemented to equalize the distribution of health professionals, especially in rural and poorer areas. Even so, the Southeast still lags behind the nation in its per capita availability of primary-care professionals.

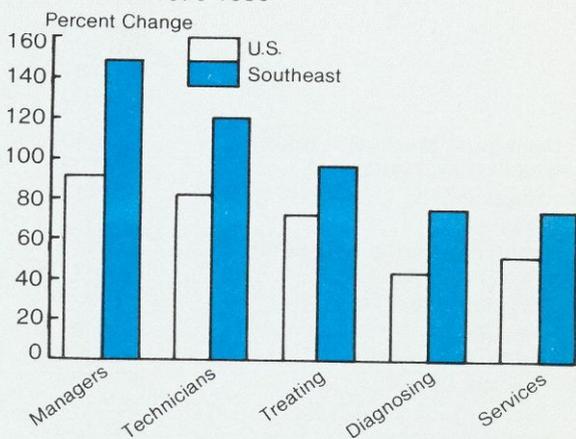
Hospitals, doctors' offices, and nursing facilities account for over 80 percent of health-care jobs, both nationally and in the Southeast. Despite the rapid growth rate of chiropractic and allied health service jobs, together they constituted less than one-tenth of the nation's and the Southeast's health-care jobs in 1981. Hospitals retain the largest share of such jobs, but this proportion declined from 59 percent in 1971 to 51 percent in 1981. This decrease is due primarily to the nation's declining birth rate and a faster growth rate in outpatient visits relative to inpatient visits.⁵

Chart 1. Growth Rate of Health-Care Employment by Industry Segment 1971-1981



Source: Calculated by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, *County Business Patterns*, Southeastern States and U.S., 1971 and 1981.

Chart 2. Growth Rate of Health-Care Employment by Occupation 1970-1980



Sources: Computed by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, *1980 Census of Population*, Table 217 (southeastern states, and Table 276 (U.S.), forthcoming.

The next largest component of the nationwide health industry is nursing and personal-care facilities. Nursing homes' share rose nationally but did not increase appreciably in the Southeast, where they rank third behind physicians' offices in terms of employment share. This pattern holds even in Florida, which is surprising since the percentage of elderly in Florida's population is much higher than the national proportion. Although employment in southeastern physicians' offices, the other large component, rose in absolute terms, growth of this industry segment was outdistanced by other categories of health care and its share of industry jobs changed only slightly.

Growth of Health Occupations

The figures presented above and in Table 1 describe changes in the health-care industry according to the type of establishment—hospitals, doctors' offices, nursing homes—in which workers are employed. They do not distinguish between occupations such as doctors, nurses, therapists, clerical workers, or service personnel in any of these establishments. To understand the industry, however, it is important to identify changes in occupations as well. There are five major categories of health occupations: managerial, health diagnosing (physicians and dentists), health assessing

and treating (nurses, pharmacists, and therapists), health technicians (laboratory workers and licensed practical nurses, or LPNs), and health services (nurses aides and other service personnel).⁶

Growth Rate. An examination of changes in the occupational structure of the health industry indicates that managerial and technical/professional occupations increased most rapidly (see Chart 2). Health service jobs and physicians and dentists increased at a rate below the industry norm. From 1970 to 1980, occupations in the industry grew even more rapidly in the Southeast than in the nation. Increases in the technical/professional category were prompted largely by a rise in technical requirements as new services, such as intensive care units, became widespread. The next most rapidly growing major category was health assessing and treating occupations. An important catalyst of growth in this category was the Nurse Training Act, which from 1964 to 1975 provided substantial financial support for nurse training. U.S. funding for rehabilitation medicine raised the number of therapists sharply. Within this major category, therapist occupations in the Southeast more than tripled, the fastest growth of any of the narrower job categories. Even the slowest growing health occupations, such as physicians, dentists, and nurses aides, expanded at a faster pace than total employed persons, measured by occupation.

Table 2. Health Occupations, United States and Southeast, 1970 and 1980

	United States				Southeast			
	Absolute Difference 1970-80	Percent Increase	Percent Share 1970 1980		Absolute Difference 1970-80	Percent Increase	Percent Share 1970 1980	
Managers, Medical & Health Health Diagnosing	51,349	89.9	1.0	1.2	7,327	148.3	0.8	1.1
Physicians	193,129	42.9	7.8	7.0	31,039	74.5	6.9	6.5
Dentists	135,615	45.9	5.1	4.7	21,487	78.1	4.6	4.4
Health Assessing & Treating	29,879	31.5	1.6	1.3	5,319	61.0	1.5	1.2
Registered Nurses	711,310	72.3	17.0	18.3	95,527	96.3	16.5	17.3
Pharmacists	516,091	68.8	12.9	13.7	65,687	88.8	12.3	12.4
Therapists	28,900	25.2	2.0	1.6	7,417	57.3	2.2	1.8
Health Technicians	113,757	148.8	1.3	2.1	14,464	226.3	1.1	1.9
Clinical Labs	433,004	81.2	9.2	10.4	72,717	120.1	10.1	11.9
LPNs	114,559	92.5	2.1	2.6	16,423	116.4	2.3	2.7
Health Services	163,778	62.7	4.5	4.6	32,057	107.2	5.0	5.5
Nurses Aides	583,185	51.0	19.7	18.7	89,267	73.5	20.2	18.7
Total Health	378,148	41.2	15.8	14.0	65,136	65.7	16.5	14.6
Total Health	3,452,704	59.5	100.0	100.0	523,867	87.2	100.0	100.0

Source: Computed by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, 1980 *Census of Population*, Table 217 (Southeastern States) and Table 276 (U.S.), forthcoming.

Absolute Gains. Of the half-million new health jobs in the Southeast from 1970 to 1980, health assessing occupations, particularly nurses and therapists, experienced the largest absolute increase (see Table 2).⁷ Volume gains in health services were nearly as large. Health technicians contributed the third largest number of jobs. The Southeast added fewer doctors and health managers over the decade. National trends followed the same pattern, with nursing jobs expanding the most and managerial jobs the least.

Relative Growth. Little restructuring of the occupational composition of health care occurred over the decade. Despite its comparatively slow growth rate, the major occupational category remains health services, of which nurses aides constitute the largest component. Health services' share of medical occupations fell slightly. The second largest category, health assessing and treating occupations, increased its share of jobs in the Southeast only slightly. The relative decline of nurses aides and the increase of LPNs, the largest component of health technicians, reflects an upgrading of credentials required. In spite of the rapid growth rate of health management

occupations, this category's share comprised only 1 percent of all health occupations in 1980.

Distribution of Health Resources

Distribution of Health-Care Personnel. Notwithstanding the rapid growth of health-related jobs in the Southeast over the last decade, most states in this region remain below the U.S. average and median in availability of health-care providers.⁸ As shown in Table 3, the number of nonfederally employed doctors and dentists, relative to population, was below the U.S. mean in every southeastern state except Florida in 1981. In rank as well, the supply of physicians remained below the U.S. median in every southeastern state except Florida. Similarly, the number of registered nurses relative to population was well below national norms in the same five southeastern states—Alabama, Georgia, Louisiana, Mississippi, and Tennessee. Except for Floridians, southeasterners rely more heavily on licensed practical nurses than on registered nurses. Southeasterners also seem to depend more on pharmacists for health care than on physicians: every

Table 3. Proportional Availability of Health-Care Resources, Southeastern States and United States

	Nonfederal Physicians ^a (1979)	Dentists ^a (1980)	Nurses ^a (1976)	LPNs ^a (1976)	Community Hospital Beds ^a (1981)	Nursing Home Beds ^b (1980)
United States	2.01	.55	3.80	1.91	4.4	58
Alabama	1.29	.37	2.23	2.34	5.2	48
Florida	2.31	.48	3.53	1.56	4.8	22
Georgia	1.53	.41	2.63	2.21	4.5	61
Louisiana	1.60	.43	2.45	1.99	4.6	57
Mississippi	1.13	.33	2.26	2.03	5.5	44
Tennessee	1.66	.50	2.33	2.86	5.3	43

^aPer 1,000 population.

^bBeds in nursing homes with 25 or more beds per 1,000 residents 65 and over.

Source: Data on nurses, LPNs from U.S. Department of Health, Education, and Welfare, Health Resources Administration, *Survey of Health Manpower* (December 1974), pp. 122, 178; data on doctors (MDs and DOs) and dentists from U. S. Department of Health & Human Services, Health Resources Administration, *Third Report to the President and Congress on the Status of Health Professions Personnel: The United States* (January 1982), pp. IV-99, VI-24; hospital and nursing home data from Department of Health & Human Services, National Center for Health Statistics, *Health, United States* (December 1983), pp. 167-68, 174-75.

southeastern state except Florida has more pharmacists per capita than in the nation.

Within the Southeast, as in the nation, the distribution of health jobs is skewed toward urban rather than rural areas (see Table 4). Birmingham, Tampa, Augusta, Shreveport, Jackson, Nashville, and Memphis have the largest proportional representation of health-care jobs in their respective states.⁹ Unlike goods, services cannot be stored; they are consumed upon purchase. Nurses and doctors, like bootblacks and taxi drivers, usually must be present for an economic transaction to take place. In addition, many medical services are highly capital intensive. In order to use expensive medical equipment efficiently, it is necessary to have a threshold population base likely to need such facilities. On average, southeastern cities' share of health-care jobs is 12 percent more than their share of nonfarm employment.¹⁰

Other Health Resources. The rapid growth of the health industry in the Southeast is also evidenced by an increase in hospital beds. From 1972 to 1982 the number of hospitals in the region increased 13 percent, and beds rose 41 percent; nationwide there were 1 percent more hospitals and 15 percent more beds over the decade. Of course, the region's population growth

spurred much of this expansion, but on a proportional basis every southeastern state showed similar improvement. For example, from 1970 to 1981 the number of hospital beds per 1,000 residents grew from 4.3 to 4.4 in the nation but from 4.3 to 5.2 in Alabama. The 1974 National Health Planning and Resources Development Act required that "certificates of need" be obtained from local planning agencies before expansion or construction of new hospitals could be undertaken. Yet even after the act began to reverse the growth of hospital beds nationally, southeastern states continued to expand on a proportional basis, or declined less sharply than the national rate. The number of short-term hospital beds per 1,000 residents is higher in the Southeast than in the nation (see Table 3). Nursing-care facilities show a somewhat different pattern, with growth in homes and beds close to the national rate of 9 percent from 1976 to 1980. Nursing home beds per 1,000 residents age 65 and over remain below the U.S. norm, and no clear pattern of convergence is evident. However, Florida's extremely low index partly reflects discrepancies in classification. Many of the state's resort communities have patient-care facilities for their residents, but these are not classified as nursing homes.

Table 4. Concentration Ratios of Health Employment in Selected Southeastern SMSAs,^a 1970 and 1980

	1970	1980
Alabama SMSAs	1.10	1.21
Birmingham	1.15	1.39
Florida SMSAs	1.00	1.04
Miami	1.03	1.07
Tampa	1.13	1.21
Ft. Lauderdale	0.93	1.09
Jacksonville	0.85	0.90
West Palm Beach	0.94	1.04
Orlando	0.95	0.85
Georgia SMSAs	1.21	1.11
Atlanta	1.14	0.99
Augusta	1.71	2.16
Louisiana SMSAs	1.10	1.14
New Orleans	1.11	1.18
Baton Rouge	0.95	0.93
Shreveport	1.20	1.31
Mississippi SMSAs	1.59	1.35
Jackson	1.59	1.44
Tennessee SMSAs	1.20	1.18
Memphis	1.23	1.23
Nashville	1.32	1.25
Chattanooga	0.93	1.04
Knoxville	1.19	1.18
Southeastern SMSAs	1.12	1.12

^aDoes not include health administrators because category is small and comparable figures are not available.

Source: Computed by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, *1970 and 1980 Census of Population, General Social and Economic Characteristics* (various states), Table 121 (1980) and Table 171 (1970).

Industry Earnings, Costs, and Expenditures

Earnings. Although health care has been an important source of new jobs, the industry's performance when measured by earnings is less impressive. The share of nonfarm earnings attributable to the industry was 6.1 percent in 1981, whereas its share of nonfarm jobs was 7.4 percent. In the Southeast, the industry's contribution to nonfarm earnings was closer to but still less than

its share of jobs. Median earnings remained below all-industry norms: earnings of full-time workers in the health-care industry increased to only 81 percent of general levels by 1978. Earnings of nursing-home workers were only 57 percent of the median by 1978. Overall earnings are even lower because health-care employees are more likely to work part-time than workers in other industries. One-fifth of health-care employees work part-time, whereas in general only one in seven employees does so. Lower earnings and hours are related also to the industry's large female composition. Women comprise 75 percent of the industry compared with 42 percent of the work force.¹¹

Costs. Rapid health-care industry growth has been accompanied by a rate of cost increases in excess of the Consumer Price Index (CPI). Except during periods of rapid inflation induced by war or exogenous shocks, such as energy crises, medical care costs historically have outpaced the CPI. Although a dramatic reduction in the inflation rate has occurred over the past few years, this improvement had little effect on medical costs. Price increases slowed from an 8.9 percent growth rate in the period December 1980 to December 1981 to 3.9 percent in the following 12-month period, whereas medical inflation slowed from 12.5 to 11.0 percent. Medical cost increases slowed somewhat subsequently. In April 1984 medical costs were 6 percent ahead of April 1983, while prices in general were 4.5 percent higher. However, this modest deceleration means that the rate of price increases in the health-care industry is even faster now relative to the CPI than it was during the peak period of general inflation.

Hospitals have been the major source of medical inflation in recent years. From December 1977 to December 1983 hospital room costs rose 106 percent while medical costs overall rose 75 percent. Physicians' services increased slightly more slowly than medical costs in general over this period, and prescription drugs slightly faster. Even the rate of hospital cost increases decelerated recently: as of April 1984 the 12-month growth rate of hospital room costs was 8.6 percent.¹²

Expenditures. Increasing aggregate health costs are reflected in the industry's increasing share of gross national product (GNP). In 1983 the output of the industry amounted to 11 percent of GNP, up from 8 percent in 1973 and 6 percent in 1965. Hospitals accounted for almost half the 1983 figure. Over the last decade, the average

length of hospital stays declined as did the number of hospital beds per capita, but the number of tests doubled and the number of operations grew three times as fast as the population.¹³

Regionally, health expenditures have remained below national levels. With the exception of Florida, whose expenditures slightly exceed the norm, per capita personal health-care expenditures in southeastern states range from 75 to 91 percent of the national average. Alabama, Georgia, Louisiana, and Mississippi ranked in the bottom third of expenditures by state. Nursing home expenditures are substantially lower, with all six southeastern states ranked in the bottom third of per capita expenditures. Florida and Tennessee residents spend less than 60 percent of the U.S. average, and the other states in the region spend about three-fourths of the U.S. norm.¹⁴ However, expenditures have been increasing more rapidly in the Southeast. In addition, prices tend to be lower in the region and so partly offset variations in expenditures. Expenditures for hospital care are closer to the U.S. mean and median. One reason for this disparity between hospital and other types of medical expenditures might be the relatively high unemployment rates in certain areas of the Southeast. Unemployed who lose work-related insurance often seek care for routine medical needs in an emergency room, where charges are substantially higher than those levied for treatment in a doctor's office.

Why the Health-Care Industry Has Grown

The aging population and federal measures to promote training and capital expansion have been stimulants to growth in health care. The factors do not, however, account for patients' ability to afford increasingly expensive medical care, labor force entrants' ability to find jobs in the industry, and the growth of the industry as a whole. Economists who have examined health care have developed several competing explanatory models: one focuses on demand characteristics peculiar to the industry and two others emphasize the lack of normal competitive market mechanisms.

Induced Demand. A widely advanced explanation of health-care industry growth is grounded in the concept of price elasticity, whereby demand for most goods is inversely related to their price. The spread of third-party health-care payments, in the form of insurance or welfare, has reduced the price of medical care directly borne

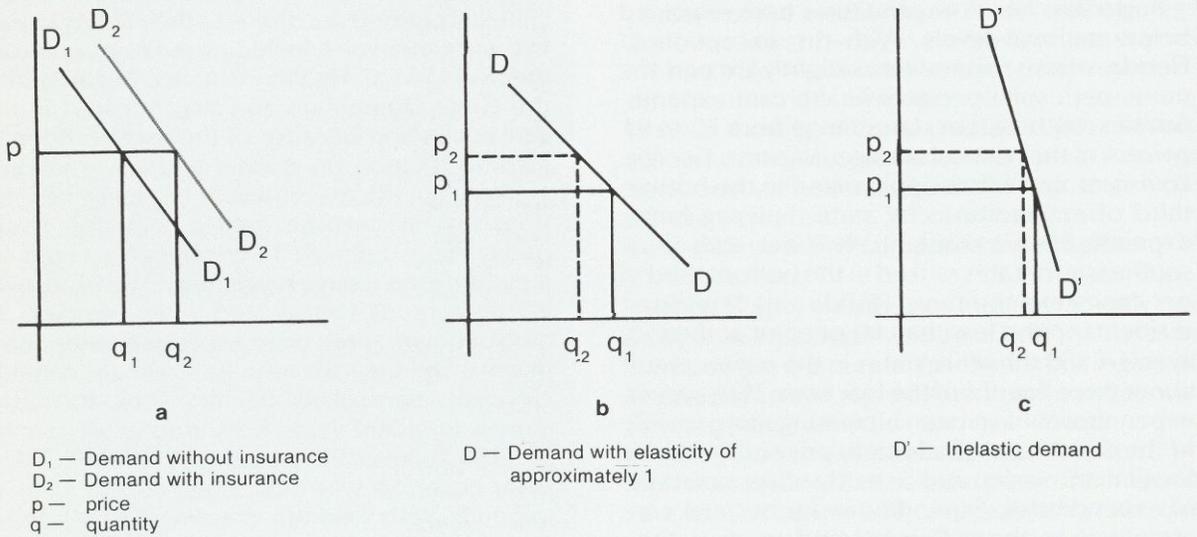
by consumers. Price elasticity would suggest this drop in price should be accompanied by increased demand for medical services.

Historically, doctors indirectly provided health insurance by means of price discrimination, charging patients according to their ability to pay. In theory, everyone, including the poor, received medical service. Health insurance began during the Great Depression and was boosted in the postwar period because of the rising burden of income taxation on middle and lower income workers, the IRS exemption of insurance benefits from taxable income, and a Supreme Court ruling that employee fringe benefits could be included in collective bargaining.¹⁵ By 1970, over 90 percent of factory and office workers in metropolitan areas were protected with some hospital and surgical coverage. Coverage of medical costs, particularly doctors' fees, increased sharply in recent years, from around 60 percent in 1960 to over 90 percent by 1976.¹⁶ Third-party coverage was broadened substantially in the mid-1960s with the enactment of Medicare and Medicaid legislation, which extended medical insurance to the elderly and indigent. These programs were implemented to achieve greater equity in the distribution of health services.

Critics argue that this broad expansion of third-party payments stimulates demand in two respects. At any given price, consumers demand more medical care than they would otherwise because they do not directly bear the full cost, which is paid ultimately through higher insurance rates and higher taxes.¹⁷ Insurance thus can be treated as a shift in the demand curve for health care to the right, from D_1 to D_2 (see Chart 3a). Fiscal policy exacerbates this induced demand as health insurance benefits are not classified as taxable income. Furthermore, this exemption spurs employers to contribute to health benefits instead of wages, for employees receive 20 to 50 percent more than they would with an equivalent wage increase. For example, only 50¢ to 80¢ of an extra dollar in wages is left after taxes to purchase health care, but the same dollar paid through an employer-based insurance plan buys a full dollar's worth of medical care.¹⁸ The health-care industry is thus boosted by a tax subsidy, estimated at \$6 billion in 1975.¹⁹

Insurance also reduces the price elasticity of demand for medical services by desensitizing consumers to the full effects of higher prices. Since insurance covers a large portion of a price

Chart 3. Elasticity of Demand for Medical Care



Source: Federal Reserve Bank of Atlanta.

increase, consumers are unlikely to reduce demand by an amount equal to the full price increase. Insurance not only reduces consumers' price sensitivity but distorts demand toward more expensive, covered services like inpatient hospital care. If insurance covers many health charges through a cost-based reimbursement method, consumers have little reason to respond to price increases by reducing demand commensurately. As elasticity approaches a vertical slope, a rise in health care prices does little to reduce the level of demand (see Chart 3b,c).

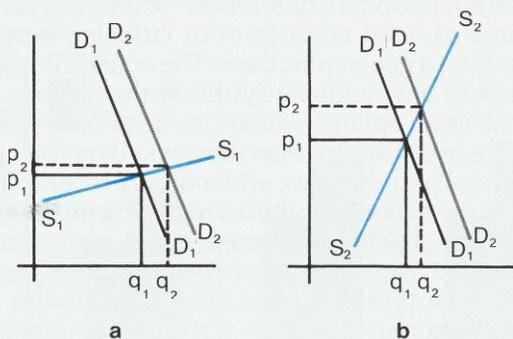
If the price elasticity/demand shift explanation of health-care industry growth is valid, it implies the need for policy changes. The first might be to discourage the spread of insurance coverage, for example, by capping employers' deductions for health insurance premiums, as Congress recently proposed. A second change might be to align consumers' medical costs more closely with actual costs by charging higher deductibles or requiring copayment for more services, especially routine medical care, as some employers and insurers are beginning to do. However, advocates

of alternative explanations of industry growth doubt that increased deductibles would lead to a more efficient allocation of resources (e.g., health-care labor) because of distortions in the health-care market.

Market Failure. Economists who emphasize market failure point out that increased demand for services would not automatically increase average medical costs. The impact that shifts in the demand schedule and changes in elasticity ultimately have on prices depends on the elasticity of supply. If supply were highly "price elastic," increased demand could more readily increase output than prices (see Chart 4a). It is the inelasticity of the industry's supply schedule, they argue, that is critical in the rapid inflation in medical costs, since an increase in demand quickly pushes the industry to capacity and forces prices higher (Chart 4b).

Medical care prices are high because their industry, functions as an "oligopoly," wherein power is wielded by a relatively limited number of suppliers who are not price-takers but price-setters. As the first-line suppliers of health care,

Chart 4. Elasticity of Supply for Medical Care



- S₁ — Elastic Supply
- S₂ — Inelastic Supply
- D₁ — Demand without insurance
- D₂ — Demand with insurance
- p — price
- q — quantity

Source: Federal Reserve Bank of Atlanta.

physicians can direct subsequent consumption of surgical, hospital, and pharmaceutical goods and services. Widespread price discrimination, through which physicians levy fees in accordance with patients' ability to pay, is evidence of such price-setting behavior.

Medical care output does not respond to higher prices induced by the industry's oligopolistic market because of the substantial barriers to entry. The supply of physicians is restricted by professional associations' control over medical education and licensing. Quackery was widespread in 1846 when the American Medical Association was founded to improve professionalism through licensing and medical education. Barriers to entry were raised by the expense and long training period required of physicians. Not only is the supply of physicians restricted, but so are the alternatives. Whereas the auto industry offers consumers a broad array of choices, ranging in price and fuel economy and allowing for imperfect substitutions such as public transportation, bicycling, and walking, medical care is a "Cadillac-only" industry, all of whose products are high-priced. The high cost of modern medical equipment also inhibits entry.

During the postwar period, the federal government addressed supply problems in two respects. The Hill-Burton Act of 1947 stimulated hospital construction in rural and underserved areas such

as the Southeast. Then, beginning in the 1960s, a series of acts was passed to increase medical manpower. The Health Profession's Educational Assistance Act of 1963 authorized loans for medical students and construction of medical schools. The Allied Health Professions Personnel Training Act increased enrollment in occupational and physical therapy. The Health Manpower Act enlarged the student loan program and otherwise expanded support for nursing and pharmacy schools. In the early 1970s, legislation promoted the training of nurse practitioners and physicians' assistants for underserved areas.²⁰

If barriers to entry were the critical factor in the rapidly rising health-care costs, then these federal measures should have lowered unit costs, as increased supplies intensified competition and drove prices down. Price increases have been slow to abate, however. The fundamental factor in the divergent supply behavior may be that medical-care prices function in a manner unlike that of most industries. Higher prices raise supplier incomes more than they reduce demand for medical services. Critics of the barriers-to-entry argument thus maintain that measures to increase supply do not reduce costs because the basic incentive system, grounded in the unique relationship between buyer and seller in the health-care market, remains unchanged. This relationship, they argue, is grounded in uncertainty.

Uncertainty. Consumers are uncertain what health-care products or services they require because information in this market is unequal; that is, the consumer's medical knowledge is necessarily far less than the physician's.²¹ Physicians alone possess the information required to make rational decisions about goods and services necessary for treatment and cure. Thus, the consumer-supplier relationship is not at arm's length, as in most markets, but is rather one of trust. Because of this "agency" relationship, physicians conform to professional norms designed to preclude self-interest and profit-maximization.

The medical profession's adaptation to this peculiarity of the health-care industry results in a suboptimal allocation of resources. In a normal market, individual demand is determined by the price of goods, income constraints, and tastes. Suppliers also pursue their own self-interest, maximizing profits by producing additional goods and services to the point where marginal revenues equal marginal costs. The resulting level of prices and output is an equilibrium situation whereby each individual determines his level and mix of

services; no other allocation of resources would improve the position of all participants. No intervention on the part of government or trade associations is necessary, except perhaps in the area of distribution; subsidies or taxes are sometimes indicated to make purchasing power more equitable.

In the health-care industry, however, the inequality of information possessed by consumers and physicians and the vital nature of health care render profit-maximization by suppliers unethical. At the same time uncertainty enervates the effect of prices on consumer choices, thereby worsening price inelasticity on the demand side. Critical medical choices are made not by consumers (patients) but suppliers (physicians), whose cost consciousness is muted by professional standards requiring them to pursue patient well-being with little consideration for prices or income constraints. Since reimbursement until recently has been cost-based, most hospital administrators also have had little incentive to control costs. Some analysts maintain that hospital managers overinvest in capital equipment because availability of the latest technology is deemed necessary to attract and retain the best doctors, who are the chief source of customers.²²

If market failure is the key factor in the rapid growth of the health-care industry, merely dampening demand by raising deductibles or requiring copayments would have only an insignificant effect on aggregate costs. Suppliers, not consumers, would continue to make the decisions critical to costs because the information possessed by each group would remain unequal. Costs must be controlled by altering supplier incentives, and rationing has been one widespread method for achieving this change.

Public intervention in health care is more extensive in most developed countries than in the United States. In many nations, the desire for equity in the ability to purchase such a life-and-death commodity as health care has resulted in universal health insurance financed through taxation. In countries following this pattern, cost increases that ensue from rising demand are held in check by a rationing system on the supply side. In Great Britain, for example, middle-aged and elderly citizens can obtain kidney dialysis treatment only outside the public-sector medical system. Queues for regular medical services are long in such countries. Rationing services to stem spiraling increases in medical costs in the United

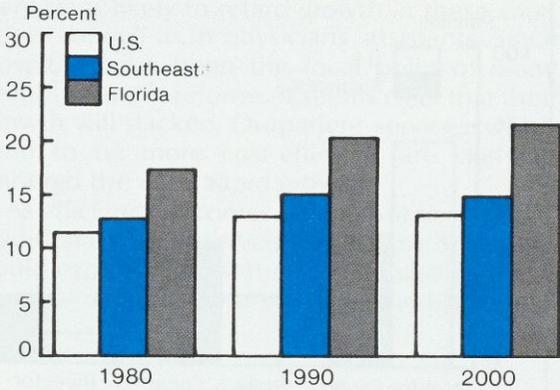
States was recommended this year both by a Brookings Institution study and by the Southeastern Hospital Conference.²³ Currently, certificates of need are a form of rationing hospital beds on a geographic basis. The economic drawback of any rationing system is that it does not achieve an optimal solution: some people receive more medical care than they would be willing to pay for on their own, while others receive less.

Three major hypotheses regarding health-care industry growth—induced demand, market structure, and uncertainty—have been reviewed above. The hypothesis that has been subjected to the most rigorous empirical testing is the demand-inducing effect of third-party payments.²⁴ Even the simplest historical review of growth trends in the industry suggests the greater importance of demand factors. Demand has changed significantly over the last three decades through the spread of insurance, whereas doctor-patient relationships and physicians' oligopolistic competition have remained constant or diminished. The concept of uncertainty has been thoroughly specified theoretically but not as well supported empirically.²⁵ However, private sector initiatives to resolve industry distortions emphasized by the uncertainty concept are increasing rapidly. All of the hypotheses focus on price elasticity, as do reform measures, and so changes in the industry during the next decade should be influenced largely by greater price elasticity on both the demand and supply sides.

Outlook and Implications

Demographic Trends. The nation's aging population suggests that demand for health care will continue to rise, since the elderly consume a disproportionate amount of medical services. This aging phenomenon should have a special impact on certain southeastern states because a larger proportion of population in the region will be elderly (see Chart 5). In 1980, residents over age 65 composed 13 percent of the Southeast's population, compared with 11 percent of the nation's. Florida had the largest component of residents age 65 or over (17 percent) but Alabama and Mississippi also had a slightly larger percentage of elderly residents than the nation. By 1990, more than one-fifth of all Floridians will be 65 or over compared with 13 percent for the nation. Alabama and Tennessee also are expected to have a slightly higher-than-national proportion of senior citizens. By the year 2000, Florida's

Chart 5. Projected Shares of Population 65 and Over, U.S. and Southeast



Source: Computed by Federal Reserve Bank of Atlanta from data in U.S. Department of Commerce, Bureau of the Census, *Provisional Projections of the Population of States, by Age and Sex: 1980 to 2000*, Series P-25, No. 937 (August 1983), Table 4.

share should rise to 22 percent while the nation's reaches 13 percent.

This demographic trend suggests that hospitals and nursing-care facilities will continue to expand as a source of jobs as they respond to rising demand for their services. The Southeast, however, has not sought market solutions for nursing care to the extent that other regions have. The number of beds in nursing facilities per capita is lower in this region than elsewhere in the United States. Moreover, demographic trends reflect only need, not economic demand. Changes in medical prices, brought about through third-party payment systems, could dampen this potential demand by making it more difficult for the elderly and others to afford medical care.

Third-Party Payments. In the private sector, employers' efforts to control benefit costs should result in higher deductibles and premiums. These in turn are likely to diminish effective demand for medical care and thereby retard employment growth in traditional health occupations and industries. Congress already has increased deductibles and copayments for certain publicly-covered treatments. If congressional action to control medical costs continues, a cap on tax-free health benefits could win approval, complementing efforts by insurers and employers to harness medical expenditures.

Of course, doctors still will direct most consumption decisions. In the past, costs have increased when doctors pointed patients toward treatment methods covered by insurance rather than toward less-expensive, uncovered alternatives. However, many employers and insurers have instituted incentives to foster patient use of lower-cost alternatives, such as outpatient surgery. Later this year Blue Cross-Blue Shield of Tennessee will begin reimbursement of home hospice care for terminally ill patients. For every \$1 of hospice costs, the insurer expects to save \$7 in hospital costs. Such incentives are having an effect nationwide: hospital outpatient care has declined for several years, while ambulatory outpatient services have risen.

HMOs. Health maintenance organizations are likely to be another constraint on health-care costs. HMOs, formerly called "closed panel group practices," represent a private-sector alternative to the health-care industry's market failure as highlighted by the uncertainty hypothesis. Rather than replicating the market model, HMOs increase the degree of integration among consumers, suppliers, and third-party payers. In this situation, similar to a large corporation or conglomerate, all parties share a common interest in controlling costs while maximizing health. HMOs began in California in 1933 when Henry Kaiser established a plan to keep his engineering workers healthy by having them prepay 10 cents a day for medical care. HMOs have gained sharply in popularity since 1973, when federal legislation mandated that employers begin offering such benefits as an alternative to traditional insurance plans. According to the federal Office of Health Maintenance Organizations, enrollment in the Southeast increased from 100,000 in 1976 to 428,000 in 1983; nationwide enrollment more than doubled over this period, reaching 12.5 million by 1983. The growth of HMOs should be furthered by recently implemented government incentives for the nation's 30 million Medicare recipients to join HMOs. The continued growth of HMOs augurs better control of costs and greater consideration of productivity when health-care staffing is increased.

DRGs. The change in Medicare reimbursement from a cost-based system to Diagnostic Related Groups (DRGs) is among the most important recent measures to control costs. Under the new system, hospitals will be reimbursed a fixed amount for each illness or injury. This change provides an incentive for hospitals to reduce

costs because they can retain the difference between the DRG reimbursement and their actual costs; however, they will not be reimbursed for charges in excess of DRGs. This system was piloted in New Jersey and at the end of 1983 began to be implemented in stages nationwide. Extending this system from hospital fees to medical fees is already under consideration. Recent enactment of DRG legislation and its pending extension to doctors' fees suggest a deceleration in both inflation and staff growth. In fact, some southeastern hospitals already are laying off employees even though DRGs are being phased in over several years. Hospitals in this region have fewer full-time equivalent employees per patient, but their occupancy rates are lower than elsewhere in the nation.

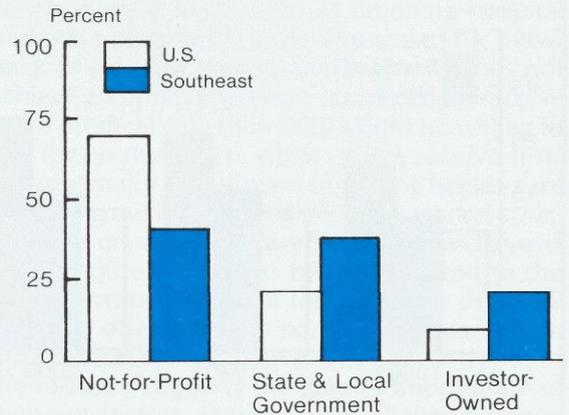
For-Profit Sector. Another force likely to check growth in health-care employment and other costs is the rise of for-profit firms in the industry. One source forecasts a 22 percent annual growth rate for hospital management companies. These firms theoretically are better attuned to efficient allocation of resources and should help improve the performance of hospitals and nursing homes.²⁶

For-profit health care companies have been growing rapidly and their profitability is above average. For example, the return on equity of 15 leading private companies in health-care averaged 19.9 percent over the past five years compared with 15.1 percent for all industries. This return exceeded even that of the computer industry and was surpassed only by brokerage and tobacco firms. Sales grew by 16.2 percent per year in comparison with an all-industry median of 12.4 percent. Only energy, office equipment, brokerage, and specialty retail companies' revenues grew faster.²⁷

The large supply of doctors and dentists should encourage continuing growth in retail medical services such as emergency outpatient surgical centers.²⁸ In the Southeast, the gap between nursing homes and probable future demand should spur the home health-care segment of for-profit providers. Medical merchandise marts are being considered in several southeastern cities, including Ft. Lauderdale, Tampa, and Nashville.

For-profit sector growth is especially significant in this region because such firms have expanded operations more rapidly in the Sunbelt, including many areas of the Southeast, than elsewhere. Beds in investor-owned hospitals increased 60 percent in the U.S. from 1972 to 1982, but 189 percent in the Southeast. One-fifth of the beds in

Chart 6. Share of Hospital Beds by Ownership
U.S. and Southeast, 1982



Source: Computed by Federal Reserve Bank of Atlanta from American Hospital Association data.

the region are now in proprietary hospitals, up from one-tenth a decade ago, whereas nationally such hospital beds rose from 7 to 9 percent over the period (see Chart 6). On a per capita basis, the proportion of beds in southeastern for-profit hospitals is more than twice the national share. Rapid population growth and a more conducive regulatory climate are the main reasons for the faster growth of for-profit hospitals in this region. Moreover, a number of hospital management firms are headquartered in the Southeast.

Conclusion

The complexity of the health-care industry makes it difficult to determine its precise heading, particularly without the support of a formal model to estimate the influence each of these cost-cutting policies may have. Nonetheless, the industry's future over the next decade appears to promise slower but continuing growth and more productivity consciousness in the expansion of jobs. The U.S. Commerce Department projects a growth rate of 10.2 percent over the next five years compared with a 13.4 percent pace over the past five.²⁹ Health management jobs are likely to remain the fastest growing occupational category because the move toward cost control should intensify demand for management skills in the delivery of health care. It is less obvious

which occupational categories will experience slower growth as a result of current policy reforms, but the already large number of doctors and dentists is likely to retard growth in these categories as well as in physicians' assistants. Since hospitals have been the focal point of many reimbursement reforms, it seems clear that their growth will slacken. Outpatient services, which tend to be more cost-efficient, are likely to undergo the most rapid growth.

As efficiency becomes paramount over equity, traditionally underserved areas of the Southeast could experience a setback in the availability of medical resources and services. Rural areas and

slow-growing states are likely to see sharper staffing cuts than urban areas and high growth states. Consumers with a greater need for medical care probably will have to bear a larger share of costs or forgo treatment. The relationship between medical expenditures and healthiness is not clear, and so any negative conclusions regarding the impact of this change must be drawn with caution. Nonetheless, the implications concerning the distribution of medical services are troubling compared with a decade ago in that the region's relatively high infant mortality rates indicate a greater need, especially on the part of certain disadvantaged social strata.³⁰

NOTES

¹The Southeast in this article refers to the six states included in the Sixth Federal Reserve District: Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee.

²Figures given for allied health services and nursing-care facilities have been adjusted to maintain comparability across the time period despite taxonomic changes made in 1972.

³George von Haunalt, "Health Issues and Trends in the 1980s" (Palo Alto, California: SRI International, 1983), pp. 6-7.

⁴Victor R. Fuchs, "Though Much Is Taken—Reflections on Aging, Health, and Medical Care," Working Paper No. 1269 (Cambridge, Massachusetts: National Bureau of Economic Research, 1984), pp. 30-31.

⁵Edward S. Sekscenski, "The Health Services Industry: A Decade of Expansion," *Monthly Labor Review*, vol. 104 (May 1981), p. 10.

⁶Occupations related to the manufacture of medical instruments, supplies, and drugs are not included here because such occupations—operatives, sales, and technical and administrative support—are not available in a form disaggregated by industry and state.

⁷This number is larger than that given in the preceding section because it is based on a different sample, one drawn from households rather than business establishments.

⁸See Paula Breen, *Raising a New Generation in the South* (Research Triangle Park, North Carolina: Southern Growth Policies Board, 1981), pp. 21-37, for a more extensive description of continuing inadequacies in resources.

⁹Augusta's ratio of 2.16 signifies that its share of medical-care jobs is 2.16 times as large as its share of Georgia's employment overall.

¹⁰Roger A. Rosenblatt, "Health and Health Services," in *Nonmetropolitan America in Transition*, edited by Amos H. Hawley and Sara Mazie (Chapel Hill, North Carolina: University of North Carolina Press, 1981), used 1978 U. S. Department of Health, Education, and Welfare data to show that rural areas are underserved medically, according to a variety of measures.

¹¹Sekscenski, "Health Services Industry," pp. 12-14.

¹²Computed from data in U. S. Department of Labor, Bureau of Labor Statistics, *CPI Detailed Report, December 1977* (February 1978), p. 25; *December 1981* (February 1982), pp. 10, 24; *December 1982* (February 1983), pp. 12, 26; *December 1983* (February 1984), pp. 7, 21; and *April 1984* (June 1984), p. 22.

¹³U. S. Department of Commerce, Bureau of Economic Analysis, *U.S. Industrial Outlook* (January 1984), p. 52-13.

¹⁴*Health, United States and Prevention Profile*, U.S. Department of Health and Human Services, Public Health Service (December 1983), Table 68, pp. 191-92; Table 77, pp. 189-90; and Table 78, pp. 191-92.

¹⁵Carol Fethke and S. Y. Wu, "A Historical Perspective on the Health Care Industry," *Health Communications and Informatics*, vol. 5, nos. 5-6 (1979) p. 267.

¹⁶U. S. Department of Labor, Bureau of Labor Statistics, *Handbook of Labor Statistics* (June 1979), pp. 284-85.

¹⁷Martin S. Feldstein, "The Welfare Loss of Excess Health Insurance," *Journal of Political Economy* (March/April 1973), pp. 251-79.

¹⁸Martin S. Feldstein, "The Medical Economy," *Scientific American*, vol. 229 (September 1973), pp. 151-56.

¹⁹Michael D. Intriligator, "Issues in the Economics of Health," in *Economic Issues of the Eighties*, edited by Nake Kamrany and Richard H. Day (Baltimore, Maryland: Johns Hopkins University, 1979), p. 120.

²⁰Fethke and Wu, "Historical Perspective," pp. 278 ff. The training of physicians' assistants was in part motivated by a concern to find employment for the large number of medics who had served in the Vietnam War.

²¹Kenneth J. Arrow, "Uncertainty and the Welfare Economics of Medical Care," *American Economic Review*, vol. 53 (December 1963), pp. 941-73, was one of the first to develop the theoretical basis of this explanation of the health-care industry. See also, Robert G. Evans, "Incomplete Vertical Integration in the Health Care Industry: Pseudo-markets and Pseudopolices," *Annals of the American Academy*, vol. 468 (July 1983), pp. 68 ff.

²²Joseph P. Newhouse, "Toward a Theory of Nonprofit Institutions: An Economic Model of a Hospital," *American Economic Review*, vol. 60 (March 1970), pp. 64-74; a similar theoretical argument is made by Mark Pauly and Michael Redisch, "The Not-for-Profit Hospital as a Physicians' Cooperative," *American Economic Review*, vol. 63 (March 1973), pp. 87-99.

²³*Journal of Commerce*, February 10, 1984; *Atlanta Journal and Constitution*, April 7, 1984, p. 5-A.

²⁴Karen Davis, "Theories of Hospital Inflation: Some Empirical Evidence," *Journal of Human Resources*, vol. 8, no. 2 (1973), pp. 181-201, challenges this view empirically. In a cross-sectional regression analysis, cost-reimbursement variables were not significantly correlated with hospital costs: hospitals with a high proportion of patients covered by cost-reimbursement insurance plans did not have higher costs than those with a low proportion of such patients. However, her data set overlapped the years when Medicare and Medicaid were introduced; therefore, as she admits, the announcement of these programs may have prompted a cost shift. Using patient survey data for the same periods, Paul B. Ginsburg et al., "Medicare and Health Services Utilization," in *Economics of Health Care* (New York: Praeger, 1982), pp. 181-96, found that economic variables declined in importance relative to need as determinants of medical care use among the elderly after the establishment of Medicare. Their research lends support to the demand-side, price elasticity hypothesis.

²⁵Donald E. Yett et al., "A Model of Physician Pricing, Output, and Health Insurance Reimbursement: Findings from a Study of Two Blue Shield Plans' Claims Data," in *Economics of Health Care* (New York: Praeger, 1982), pp. 197-230, found physician pricing closer to the competitive than to the oligopolistic model.

²⁶However, several studies found that average patient costs were slightly higher at for-profit hospitals than at comparable not-for-profit hospitals. See Arnold S. Reiman, "Investor-Owned Hospitals and Health-Care Costs," *New England Journal of Medicine*, vol. 309 (August 11, 1983), pp. 370-72.

²⁷*Forbes*, January 2, 1984, p. 214.

²⁸Thomas W. Mader, "Health Services Markets" (Menio Park, California: SRI International, 1981).

²⁹U.S. *Industrial Outlook*, p. 52-16.

³⁰Southeastern states' infant mortality rates rank among the highest in the nation, ranging from 35th (Georgia) to 50th (Mississippi) despite a decade of federal measures designed to improve and equalize health resources across the nation.