SPECIAL ARTICLE

THE MONETARIZATION OF MEDICAL CARE

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CLOSE observers of the health-care system, among them Arnold Relman[1-3] and David Rogers,[4] are alarmed at how fast American medicine appears to be turning from a profession into a business. The evidence of history and economics suggests that a related and more pervasive trend, the monetarization of medical care, has been proceeding apace for the past several decades and dominates the present scene.

Monetarization can be defined as the rapid penetration since 1950 of the "money economy" into all facets of the health-care system. Its influence is reflected in the following developments: the order of magnitude of growth in the financial dimensions of academic health centers; the shift from voluntary to employed physicians in large teaching hospitals; the payment of reasonable stipends to house staff; the marked decline in the role of philanthropy in meeting the operating deficits and the capital needs of nonprofit hospitals; and the substantial reduction in unrequited services by physicians, especially after the introduction of Medicare and Medicaid. This process of monetarization has set the stage for the explosive growth of for-profit medicine.

A glimpse into history reveals large-scale changes in the traditional system that are essential to understanding both the present predicament and the outlook for the future. In 1940 philanthropy accounted for 24 per cent of the total operating budget of nonprofit hospitals in New York City; by 1948 it had dropped to 17 per cent.[5] According to the United Hospital Fund of New York, its share is now barely 1 per cent. The last figure underestimates the amount of free care that hospitals and physicians continue to provide to the sick poor through cross-subsidization and unrequited service, but the volume is greatly reduced from that of decades past.

Before World War II, physicians in training — interns and residents — were required to live in the hospital and were on duty every other night. Some received a small cash stipend, but many worked for room, board, and laundry. Interns were not permitted to marry, and fellows did not earn enough to marry. Physicians who sought to gain admitting privileges at a prestigious hospital had to work in its clinics for a period of years, donating several half-days per week; if appointed to the staff, they continued to donate several half-days per week to caring for patients on the wards. Most physicians adjusted their office fees for those unable to meet them in full.

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One more critical fact: capital funds for new construction, expansion, and modernization were raised by the trustees of voluntary hospitals from among themselves, their friends, legacies from the wealthy, and on special occasions, from a broad community fund-raising effort.

Up to the beginning of World War II, U.S. medicine was partly monetarized, partly eleemosynary. Thereafter, a major expansion in hospital insurance and the long upward trend in real family income set the stage for the complete monetarization of health care, the final phase of which followed the enactment of the Medicare and Medicaid programs in 1965.

The monetarization process was speeded by the changing relationships in supply and demand between those who sought medical care and those who provided it. Patients with more income and better insurance coverage found it easier to seek and pay for medical care. Hospitals treated fewer nonpaying patients, largely as a result of the rapid spread of insurance. With more revenue and fewer bad debts, hospitals were able to pay nurses and nonprofessional personnel higher, if not yet competitive, wages and salaries. The charitable element in hospital operations dwindled as hospitals became more fully integrated into the money economy.

Several additional points: government financing became available for the first time (through the Hill–Burton Act, 1946) to assist voluntary hospitals, primarily in small communities, to meet their capital needs; substantial funding from the National Institutes of Health enabled many academic health centers to become major educational, research, and service enterprises with budgets 10 or 20 times larger than those of the prewar era; Blue Cross, commercial insurance, and selected government financing programs were willing and able to cover the rapidly expanding costs of graduate medical education through patient reimbursement.

Even more striking was the decline of philanthropy as the principal source of capital funding. Third-party payers accepted funded depreciation as a reimbursable charge. When voluntary hospitals needed additional sums for expansion or modernization, they went to the capital markets to borrow, using their anticipated future reimbursements as guarantee of their creditworthiness.

As general practitioners and specialists found it increasingly easy to earn good livelihoods, they curtailed their hours of work and particularly the amount of time that they donated to hospitals for the care of the poor. Residents provided more and more of the free

and below-cost services that voluntary hospitals continued to render, particularly in their expanding emergency rooms.

The passage of the Medicare and Medicaid legislation in 1965 transformed the great majority of the poor into paying patients, thereby vastly increasing the flow of funds into the health-care system. Hospitals, physicians, and the rapidly increasing number of nursing homes were the principal beneficiaries. Together, they accounted by the mid-1970s for close to 70 per cent of all health-care expenditures.[6]

Cost-based or charge-based reimbursement encouraged hospitals to increase and upgrade the services that they offered, with almost complete protection against financial loss. In this unconstrained financial environment, for-profit medical enterprises, particularly in the South and West, found many opportunities to start and expand highly profitable operations.

Another facet of the monetarization process dates from the early postwar years, when first the Veterans Administration and later the large municipal hospitals that delivered acute care to the indigent contracted with the nation's medical schools for affiliations.[7] These affiliations provided medical schools with more sites for graduate training and faculty positions and made additional funding available for research.

Three other developments should be noted. First of all, the many new and enlarged sources of funding were the primary cause for the steep inflation in health-care prices that outpaced the gains in the consumer price index throughout most of the past three decades. In 1950, expenditures for health care in the United States totaled $13 billion, or 4.5 per cent of the gross national product. The latest figure available (1982) is $322 billion, or 10.5 per cent of a much larger base.[8]

Secondly, the combination of an elongated period of graduate training before entry into independent practice, together with an improved outlook for professional earnings, raised the expectations of the postwar generation of physicians about their future incomes. By the mid-1970s, specialists in training — particularly those in the procedure-oriented specialties — could reasonably anticipate earning at least $100,000 within a few years of board certification.

The third salient development can be classified as the practice of defensive medicine and the associated phenomenon of steeply rising professional-liability costs. The malpractice-insurance premium for a neurosurgeon in New York City is in the $70,000 range at present. That means that a young neurosurgeon starting out in independent practice faces a prospective outlay of $150,000 per year in terms of office rent, liability coverage, and other expenses — before seeing the first patient.

The thrust of the foregoing is to underscore that the financial dimensions of medical practice underwent a major transformation in the postwar era as a consequence of the many changes in the provision, distribution, and payment of services. The proportion of contributions by philanthropy to hospital operating and capital requirements has been greatly reduced, and the same is true of the voluntary services of physicians, in and outside hospitals. The nursing care given by nuns in Catholic hospitals (an important form of unrequited service in earlier decades) has all but disappeared.

The scale of this transformation was suggested at a recent symposium at the Columbia–Presbyterian Medical Center (New York City) by Dr. Henry Aranow, who noted that in the late 1930s, when he joined the staff of Presbyterian Hospital, a patient with advanced pulmonary disease who was admitted for pneumonia would die within a day or two, having run up a terminal hospital bill of $8 to $12. Today, this bill could, under special circumstances, reach $100,000. Overall there has been an approximately fivefold increase in real per capita outlays for health care in the past third of a century. It is this fact that has forced the issue of management to the fore.

To be concrete: a major academic health center with its principal teaching hospital has annual outlays in the $200 million range, the hospital usually accounting for between one half and two thirds of the total. A very large medical complex, such as the Mayo Clinic, which has a modest teaching but a substantial research component, has annual outlays in excess of $400 million (excluding the independent activities of its affiliates, St. Mary's and Methodist Hospitals). Whatever their designation — public, private, nonprofit, voluntary, or for-profit — medical complexes with annual expenditures in excess of $100 million, as well as those operating on a more modest scale, need strong management to perform their multiple functions of education, research, and service efficiently, and at the same time to make effective use of the resources at their command.

It should no longer come as a surprise that for-profit medical enterprises have been able to make rapid headway during the past decade and a half — buying up existing hospitals; raising capital on the equity markets to build new hospitals in preferred locations where there is little risk of bad debt; and managing hospitals in middle-income and upper-income areas where patients, most of them heavily insured, will not object to paying a little more for comfort and service, even if they get no more and often a little less in the quality of professional care. Hospital chains have been in a particularly strong position to develop space, equipment, personnel standards, and purchasing arrangements, each of which may give them a slight edge over the single, free-standing, nonprofit hospital.

Certain ineluctable forces have drawn medical care ever more deeply into the vortex of the money economy, where management techniques must aim at the preservation and enhancement of capital. If we look ahead, these forces appear even more powerful. Con-

sider the following: the high cost of introducing and perfecting new technology; the opportunities for corporate enterprises to attract and retain both young and mature physicians who will be available, even eager, for salaried employment; the current unbundling of services, which is likely to accelerate as entrepreneurial physicians see opportunities to improve their earnings by undertaking more diagnostic work and other procedures in their offices, in preference to the hospital; the introduction of DRGs (reimbursement based on diagnosis-related groups), which will inevitably lead to tighter hospital controls over modes of physician practice, mediated by ever more elaborate computerization; and the recent emphasis by both for-profit and nonprofit hospitals on marketing policies and diversification, which are leading to links with other health-care providers, particularly physician groups, nursing homes, and hospices, and intensifying the need for skilled management if the hospitals are to survive and prosper.

Although I have singled out the impact of monetarization on the hospital sector, it must be noted that physicians in and outside of hospitals are the critical providers of care. Relman is surely right in being deeply concerned about the growing conflict between medical ethics and money-making goals,[3] an issue that the American Medical Association — and I would add, state licensing officials and other regulatory bodies, both public and private — should keep under close surveillance. To view the practice of medicine as just another business undertaking like retailing or banking is to be blind to the role of agency in the work of a professional. To rely on the market to discipline money-grubbing professionals is to overestimate what the market should be asked to do or is capable of doing.[9]

There are further indications of the increasing importance of the money economy in the delivery of health-care services. The continuing growth of for-profit chains has already had the inevitable consequence of stimulating free-standing nonprofit hospitals to explore alternative means of affiliation and merger so that they will be better able to stave off their increasingly strong competitors.[10] In this connection, it is worth recalling the point made in an address to the Association of American Medical Colleges several years ago by Dr. Robert Heyssel, the president of Johns Hopkins Hospital, that little difference remains between a for-profit hospital raising money on the equity markets and a nonprofit hospital forced to meet the interest payments on its bond issue.[11] Each is subservient to the lender.

The involvement of the nation's medical-supply companies in a proposal for the development of a commission, drawn from the for-profit and nonprofit sectors and government, to explore alternative ways of rationalizing the introduction of new costly technology bespeaks their concern that innovation may become the victim of cost containment now that the uncontrolled market with a limitless stream of new funds is a thing of the past.[12]

Finally, the tightening of the capital markets for institutional financing will force hospital leaders to pay more attention to financial controls and improved market strategies aimed at assuring the survival and vitality of the community hospitals and medical centers that are the backbone of sophisticated medical care for the American people. The cumulative effect of these potent forces has been at the heart of the continued monetarization of U.S. medicine.

Two overlapping issues must be sharply differentiated: the broad consequences of the almost total monetarization of our health-care system, and the role of for-profit enterprises in shaping its future. There is no possible way for any large provider to escape the dictates of the dollar. Congress has begun to explore alternatives to the large deficit in the Medicare Trust Fund that looms ahead; business coalitions are intensifying their efforts to moderate increases in their health-insurance premiums; state governments, such as those of California and Massachusetts, have resorted to radical innovations to rein in their steeply rising outlays for health services. Nonprofit hospitals are merging or are joining chains (or both) and are intensifying their marketing efforts to assure themselves of a steady flow of patients. In the meantime, for-profit enterprises continue to expand through the purchase or construction of additional hospitals and ambulatory facilities and through a wide array of other approaches, from the establishment of new health-maintenance organizations to working out ingenious arrangements with physicians to lease back equipment.

The policy arena is beginning to change. Congress acted recently to limit the returns on capital that would be approved by Medicare for reimbursement of for-profit hospitals, and warned that such returns might be completely disallowed after 1986. Several states, including New York, Massachusetts, Maryland, and New Jersey, have introduced a method of hospital reimbursement in which a portion of the total reimbursement pool is sequestered for distribution among the participating hospitals in proportion to the bad debts that they have incurred in treating the indigent.

The recently initiated DRG system will act to constrain for-profit hospitals from heavy reliance on ancillary charges as a source of revenue. A considerable number of municipalities and counties that are transferring their facilities to a for-profit chain have stipulated in their contracts of sale that the purchaser must provide a designated amount of free or subsidized care to the locality's indigent citizens.

Raising new money in the bond market is currently more difficult than it has been, and if a number of hospitals start to default, as may happen in the years ahead, all institutions, including the for-profit chains, will encounter difficulties when they attempt to obtain

additional funding for continued expansion. Moreover, they will have to compete with some strong nonprofit chains that may be equally attractive to bondholders.

We have had relatively little success during the past decade in moderating advances in hospital costs, but even if the first-generation DRG system fails to accomplish what its proponents envisage, by the third generation we should have a better functioning system in place. The tighter the system is controlled, the less scope there will be for for-profit institutions to exploit hitherto advantageous niches.

Up till now, the argument between critics and defenders of the growth of the for-profit sector in medical care has been formulated in terms of the sources of its profits. Relman maintains, with considerable merit, that these profits reflect entrepreneurial practices — the buying and selling of assets, "creaming" of the market, and avoiding unprofitable activities such as teaching and care for the poor.[1,13] The defenders emphasize gains from access to capital, improved planning and operating systems, and more professional management.[14,15] From the perspective of this review of the monetarization of the U.S. health-care system, the answer is to be found in the opportunities created by faulty public policy, primarily through reimbursement, for those with money-making proclivities to establish a strong niche in what was formerly a quasi-eleemosynary sector. The American public cannot continue indefinitely down the path that it has been following — that is, to devote an ever larger share of its gross national product to health care. But only the naive believe that the goals that must be pursued — innovation, quality, access, and equity at an affordable cost — can be achieved either by greater reliance on the for-profit sector or by radically constraining its growth.

To secure its long-term financial foundation, American medicine will require a combination of political leadership and professional cooperation that is not yet visible on the horizon. The great danger is that such cooperation will be delayed past the point at which intervention can be effective.

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MEDICAL PROGRESS

BIOLOGIC AND CLINICAL IMPORTANCE OF PROINSULIN

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In 1953 Sanger and Thompson described the complete covalent structure of insulin, a hormone containing two separate peptide chains and three disulfide bonds.[1,2] Although proposed models for the biosynthesis of such a complex molecule were debated for many years, it was not until 1967 that the mechanism for insulin biosynthesis was finally elucidated: using an in vitro system containing isolated pancreatic islets or human insulinoma tissue and radiolabeled amino acids, Steiner and his colleagues showed that the formation of insulin was preceded by the biosynthesis of a single-chain insulin-containing peptide about 1½ times the size of insulin itself.[3,4] Isolation of this precursor in larger amounts and determination of its primary structure revealed an extended peptide sequence connecting the amino terminus of the insulin A chain with the carboxyl terminus of the insulin B

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