

## SPECIAL ARTICLE

## THE NEW MEDICAL-INDUSTRIAL COMPLEX

ARNOLD S. RELMAN, M.D.

**Abstract** The most important health-care development of the day is the recent, relatively unheralded rise of a huge new industry that supplies health-care services for profit. Proprietary hospitals and nursing homes, diagnostic laboratories, home-care and emergency-room services, hemodialysis, and a wide variety of other services produced a gross income to this industry last year of about \$35 billion to \$40 billion. This new "medical-industrial complex" may be more efficient than its nonprofit competition, but it creates the problems of overuse and fragmentation of ser-

vices, overemphasis on technology, and "cream-skimming," and it may also exercise undue influence on national health policy. In this medical market, physicians must act as discerning purchasing agents for their patients and therefore should have no conflicting financial interests. Closer attention from the public and the profession, and careful study, are necessary to ensure that the "medical-industrial complex" puts the interests of the public before those of its stockholders. (*N Engl J Med.* 1980; 303: 963-70.)

**I**N his farewell address as President on January 17, 1961, Eisenhower warned his countrymen of what he called "the military-industrial complex," a huge and permanent armaments industry that, together with an immense military establishment, had acquired great political and economic power. He was concerned about the possible conflict between public and private interests in the crucial area of national defense.

The past decade has seen the rise of another kind of private "industrial complex" with an equally great potential for influence on public policy — this time in health care. What I will call the "new medical-industrial complex" is a large and growing network of private corporations engaged in the business of supplying health-care services to patients for a profit — services heretofore provided by nonprofit institutions or individual practitioners.

I am not referring to the companies that manufacture pharmaceuticals or medical equipment and supplies. Such businesses have sometimes been described as part of a "medical-industrial complex," but I see nothing particularly worrisome about them. They have been around for a long time, and no one has seriously challenged their social usefulness. Furthermore, in a capitalistic society there are no practical alternatives to the private manufacture of drugs and medical equipment.

The new medical-industrial complex, on the other hand, is an unprecedented phenomenon with broad and potentially troubling implications for the future of our medical-care system. It has attracted remarkably little attention so far (except on Wall Street), but in my opinion it is the most important recent development in American health care and it is in urgent need of study.

In the discussion that follows I intend to describe this phenomenon briefly and give an idea of its size, scope, and growth. I will then examine some of the

problems that it raises and attempt to show how the new medical-industrial complex may be affecting our health-care system. A final section will suggest some policies for dealing with this situation.

In searching for information on this subject, I have found no standard literature and have had to draw on a variety of unconventional sources: corporation reports; bulletins and newsletters; advertisements and newspaper articles; and conversations with government officials, corporation executives, trade-association officers, investment counselors, and physicians knowledgeable in this area. I take full responsibility for any errors in this description and would be grateful for whatever corrections readers might supply.

## THE NEW MEDICAL-INDUSTRIAL COMPLEX

## Proprietary Hospitals

Of course proprietary hospitals are not new in this country. Since the past century, many small hospitals and clinics have been owned by physicians, primarily for the purpose of providing a workshop for their practices. In fact, the majority of hospitals in the United States were proprietary until shortly after the turn of the century, when the small doctor-owned hospitals began to be replaced by larger and more sophisticated community or church-owned nonprofit institutions. The total number of proprietary hospitals in the country decreased steadily during the first half of this century. In 1928 there were 2435 proprietary hospitals, constituting about 36 per cent of hospitals of all types; by 1968 there were only 769 proprietary hospitals, 11 per cent of the total.<sup>1</sup> However, there has been a steady trend away from individual ownership and toward corporate control. During the past decade the total number of proprietary hospitals has been increasing again, mainly because of the rapid growth of the corporate-owned multi-institutional hospital chains.

There are now about 1000 proprietary hospitals in this country; most of them provide short-term general care, but some are psychiatric institutions. These hos-

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pitals constitute more than 15 per cent of nongovernmental acute general-care hospitals in the country and more than half the nongovernmental psychiatric hospitals. About half the proprietary hospitals are owned by large corporations that specialize in hospital ownership or management; the others are owned by groups of private investors or small companies. In addition to the 1000 proprietary hospitals, about 300 voluntary nonprofit hospitals are managed on a contractual basis by one or another of these profit-making hospital corporations.

The proprietary hospitals are mostly medium-sized (100 to 250 beds) institutions offering a broad range of general inpatient services but few outpatient facilities other than an emergency room. Some are smaller than 100 beds and a few are larger than 250 beds, but none would qualify as major medical centers, none have residency programs, and few do any postgraduate teaching. Most are located in the Sunbelt states in the South, in the Southwest, and along the Pacific Coast, in relatively prosperous and growing small and medium-sized cities and in the suburbs of the booming big cities of those areas. Virtually none are to be found in the big old cities of the North or in the states with strong rate-setting commissions or effective certificate-of-need policies.

Although there are no good, detailed studies comparing the characteristics and performance of proprietary and voluntary hospitals, there is a generally held view that proprietary hospitals have more efficient management and use fewer employees per bed. It is also said that fewer of the patients in proprietary hospitals are in the lower income brackets and that fewer are funded through Medicaid. One prominent hospital official told me that proprietary hospitals generally have per diem rates that are comparable to those in the voluntary hospitals, but that their ancillary charges are usually higher. However, this official stressed the lack of good data on these questions.

Last year the proprietary-hospital business generated between \$12 billion and \$13 billion of gross income — an amount that is estimated to be growing about 15 to 20 per cent per year (corrected for inflation). A major area of growth is overseas — in industrialized Western countries as well as underdeveloped countries — where much of the new proprietary-hospital development is now taking place. Of the two or three dozen sizable United States corporations now in the hospital business the largest are Humana and Hospital Corporation of America, each of which had a gross revenue of over \$1 billion last year. Others are American Medical International (AMI) and Hospital Affiliates International (a unit of the huge INA Corporation), with gross revenues last year of approximately \$0.5 billion each.

#### **Proprietary Nursing Homes**

Proprietary nursing homes are even bigger business. In 1977 there were nearly 19,000 nursing-home facilities of all types, and about 77 per cent were pro-

prietary. Some, like the proprietary hospitals, are owned by big corporations, but most (I could not find out exactly how many) are owned by small investors, many of them physicians. The Health Care Financing Administration estimates that about \$19 billion was expended last year for nursing-home care in the United States. Assuming that average revenues of proprietary and nonprofit facilities are about equal, this means that about \$15 billion was paid to proprietary institutions. This huge sum is growing rapidly, as private and public third-party coverage is progressively extended to pay for this kind of care.

#### **Home Care**

Another large and rapidly expanding sector of the health-care industry, but one that is even less well defined than the nursing-home business, is home care. A wide variety of home services are now being provided by profit-making health-care businesses. These services include care by trained nurses and nurses' aides, homemaking assistance, occupational and physiotherapy, respiratory therapy, pacemaker monitoring, and other types of care required by chronically ill house-bound patients. The total expenditures for these services are unknown, but I have been told that the market last year was at least \$3 billion. Most of these services are provided by a large array of small private businesses, but there are about 10 fairly large companies in this field at present, and their combined sales are probably in excess of \$0.5 billion. The largest corporate provider of home care is said to be the Upjohn Company. About half the total cost of home health care in this country is currently paid by Medicare. As Medicare and private third-party coverage broadens, this health-care business can be expected to grow apace.

#### **Laboratory and Other Services**

Last year, about \$15 billion was spent on diagnostic laboratory services of all kinds. The number of laboratory tests performed each year in this country is huge and growing at a compound rate of about 15 per cent per year.<sup>2</sup> About a third of the diagnostic laboratories are owned by profit-making companies. Most of these are relatively small local firms, but there are a dozen or more large corporations currently in the laboratory business, some with over \$100 million in sales per year. Some of these corporations operate laboratories in the voluntary nonprofit hospitals, but most of the proprietary laboratories are outside hospitals and use an efficient mail or messenger service. Including all proprietary laboratories, large and small, in and out of hospitals, probably some \$5 billion or \$6 billion worth of services were sold last year.

A large variety of services are being sold by newly established companies in the medical-industrial complex. Included are mobile CAT scanning, cardiopulmonary testing, industrial health screening, rehabilitation counseling, dental care, weight-control clinics, alcohol and drug-abuse programs, comprehensive

prepaid HMO programs, and physicians' house calls. Two markets that deserve special mention are hospital emergency-room services and long-term hemodialysis programs for end-stage renal disease.

With the decline in general practice and the virtual disappearance of physicians able and willing to make house calls, the local hospital emergency room has become an increasingly important source of walk-in medical and psychiatric services in urban and suburban areas. The use of emergency rooms has increased rapidly in the past two decades and has stimulated the development of emergency medicine as a specialty. Most third-party payers reimburse for services rendered in hospital emergency rooms at a higher rate than for the same services provided by physicians in their private offices. The result has been a vigorous new industry specializing in emergency services. Many large businesses have been established by entrepreneurial physicians to supply the necessary professional staffing for emergency rooms all over the country, and this has proved to be a highly profitable venture. In some cases, large corporations have taken over this function and now provide hospitals with a total emergency-care package. Once an appropriate financial arrangement is made, they will organize and administer the emergency room, see to its accreditation, recruit and remunerate the necessary medical and paramedical personnel, and even arrange for their continuing education. At least one large corporation that I learned about has such arrangements with scores of hospitals all over the country and employs hundreds of emergency physicians. I do not know exactly how much money is involved or how many physicians and hospitals participate in such schemes around the country, but I am under the impression that this is a very large business.

#### Hemodialysis

Long-term hemodialysis is a particularly interesting example of stimulation of private enterprise by public financing of health care. In 1972 the Social Security Act was amended to bring the treatment of end-stage renal disease under Medicare funding. When the new law was enacted, only about 40 patients per million population were receiving long-term hemodialysis treatment in this country, almost entirely under the auspices of nonprofit organizations. Forty per cent of these dialyses were home based, and renal transplantation was rapidly becoming an alternative form of treatment. The legislation provided for reimbursement for center-based or hospital-based dialysis without limit in numbers. The result was an immediate, rapid increase in the total number of patients on long-term dialysis treatment and a relative decline in home dialysis and transplantations. The number of patients on dialysis treatment in the United States is now over 200 per million population (the highest in the world), and only about 13 per cent are being dialyzed at home.

Proprietary dialysis facilities began to appear even

before public funding of end-stage renal disease but the number increased rapidly thereafter. These facilities were usually located outside hospitals and had lower expenses than the hospital units. Many were purely local units, owned by nephrologists practicing in the area, but one corporation, National Medical Care, soon became preeminent in the field.<sup>3</sup> This company was founded by nephrologists and employs many local nephrologists as physicians and medical directors in its numerous centers around the country. It currently has sales of over \$200 million annually and performs about 17 per cent of the long-term dialysis treatments in the country. It has recently expanded into the sale of dialysis equipment and supplies and the provision of psychiatric hospital care, respiratory care, and centers for obesity treatment, but its main business is still to provide dialysis for patients with end-stage renal disease in out-of-hospital facilities that it builds and operates. According to data obtained from the Health Care Financing Administration, nearly 40 per cent of the hemodialysis in this country is now provided by profit-making units. This figure suggests that total sales are nearly \$0.5 billion a year for this sector of the health-care industry.

#### INCOME AND PROFITABILITY

This, in barest outline, is the present shape and scope of the "new medical-industrial complex," a vast array of investor-owned businesses supplying health services for profit. No one knows precisely the full extent of its operations or its gross income, but I estimate that the latter was approximately \$35 billion to \$40 billion last year — about a quarter of the total amount expended on personal health care in 1979. Remember that this estimate does not include the "old" medical-industrial complex, i.e., the businesses concerned with the manufacture and sale of drugs, medical supplies, and equipment.

The new health-care industry is not only very large, but it is also expanding rapidly and is highly profitable. New businesses seem to be springing up all the time, and those already in the field are diversifying as quickly as new opportunities for profit can be identified. Given the expansive nature of the health-care market and the increasing role of new technology, such opportunities are not hard to find.

The shares of corporations in the health-care business have done exceedingly well in the stock market, and many Wall Street analysts and brokers now enthusiastically recommend such investments to their clients. According to an article in the *Wall Street Journal* of December 27, 1979, the net earnings of health-care corporations with public stock shares rose by 30 to 35 per cent in 1979 and are expected to increase another 20 to 25 per cent in 1980. A vice-president of Merrill Lynch appeared a few months ago on "Wall Street Week," the public television program, to describe the attractions of health-care stocks. According to this authority, health care is now the basis

of a huge private industry, which is growing rapidly, has a bright future, and is relatively invulnerable to recession. He predicted that the health business would soon capture a large share of the health-care market and said that the only major risk to investors was the threat of greater government control through the enactment of comprehensive national health insurance or through other forms of federal regulation.

#### WHY HAVE PRIVATE BUSINESSES IN HEALTH CARE?

Let us grant that we have a vast, new, rapidly growing and profitable industry engaged in the direct provision of health care. What's wrong with that? In our country we are used to the notion that private enterprise should supply most of the goods and services that our society requires. With the growing demand for all kinds of health care over the past two decades and the increasing complexity and cost of the services and facilities required, wasn't it inevitable that businesses were attracted to this new market? Modern health-care technology needs massive investment of capital — a problem that has become more and more difficult for the voluntary nonprofit institutions. How appropriate, then, for private entrepreneurs to come forward with the capital needed to build and equip new hospitals, nursing homes, and laboratories, and to start new health-care businesses. The market was there and a good profit ensured; the challenge was simply to provide the necessary services efficiently and at an acceptable level of quality.

In theory, the free market should operate to improve the efficiency and quality of health care. Given the spur of competition and the discipline exerted by consumer choice, private enterprise should be expected to respond to demand by offering better and more varied services and products, at lower unit costs, than could be provided by nonprofit voluntary or governmental institutions. Large corporations ought to be better managed than public or voluntary institutions; they have a greater incentive to control costs, and they are in a better position to benefit from economies of scale. We Americans believe in private enterprise and the profit motive. How logical, then, to extend these concepts to the health-care sector at a time when costs seem to be getting out of control, voluntary institutions are faltering, and the only other alternative appears to be more government regulation.

That, at least, is the theory. Whether the new medical-industrial complex is in fact improving quality and lowering unit cost in comparison with the public or private voluntary sectors remains to be determined. There are no adequate studies of this important question, and we will have to suspend judgment until there are some good data. But even without such information, I think that there are reasons to be concerned about this new direction in health care.

#### SOME ISSUES

Can we really leave health care to the marketplace? Even if we believe in the free market as an ef-

ficient and equitable mechanism for the distribution of most goods and services, there are many reasons to be worried about the industrialization of health care. In the first place, health care is different from most of the commodities bought and sold in the marketplace. Most people consider it, to some degree at least, a basic right of all citizens. It is a public rather than a private good, and in recognition of this fact, a large fraction of the cost of medical research and medical care in this country is being subsidized by public funds. Public funds pay for most of the research needed to develop new treatments and new medical-care technology. They also reimburse the charges for health-care services. Through Medicare and Medicaid and other types of public programs, more and more of our citizens are receiving tax-supported medical care.

The great majority of people not covered by public medical-care programs have third-party coverage through private insurance plans, most of which is provided as a fringe benefit by their employers. At present almost 90 per cent of Americans have some kind of health insurance, which ensures that a third party will pay at least part of their medical expenses. Federal programs now fund about 40 per cent of the direct costs of personal health care, and a large additional government subsidy is provided in the form of tax exemptions for employee health benefits. Thus, a second unique feature of the medical-care market is that most consumers (i.e., patients) are not "consumers" in the Adam Smith sense at all. As Kingman Brewster recently observed,<sup>4</sup> health insurance converts patients from consumers to claimants, who want medical care virtually without concern for price. Even when they have to pay out of their own pockets, patients who are sick or worried that they may be sick are not inclined to shop around for bargains. They want the best care they can get, and price is secondary. Hence, the classic laws of supply and demand do not operate because health-care consumers do not have the usual incentives to be prudent, discriminating purchasers.

There are other unique features of the medical marketplace, not the least of which is the heavy, often total, dependence of the consumer (patient) on the advice and judgment of the physician. Kenneth Arrow, in explaining why some of the economist's usual assumptions about the competitive free market do not apply to medical care, referred to this phenomenon as the "informational inequality" between patient and physician.<sup>5</sup> Unlike consumers shopping for most ordinary commodities, patients do not often decide what medical services they need — doctors usually do that for them. Probably more than 70 per cent of all expenditures for personal health care are the result of decisions of doctors.<sup>6</sup>

All these special characteristics of the medical market conspire to produce an anomalous situation when private business enters the scene. A private corporation in the health-care business uses technology often developed at public expense, and it sells services that

most Americans regard as their basic right — services that are heavily subsidized by public funds, largely allocated through the decisions of physicians rather than consumers, and almost entirely paid for through third-party insurance. The possibilities for abuse and for distortion of social purposes in such a market are obvious.

Health care has experienced an extraordinary inflation during the past few decades, not just in prices but in the use of services. A major challenge — in fact, *the* major challenge — facing the health-care establishment today is to moderate use of our medical resources and yet protect equity, access, and quality. The resources that can be allocated to medical care are limited. With health-care expenditures now approaching 10 per cent of the gross national product, it is clear that costs cannot continue to rise at anything near their present rate unless other important social goals are sacrificed. We need to use our health-care dollars more effectively, by curbing procedures that are unnecessary or inefficient and developing and identifying those that are the best. Overuse, where it exists, can be eliminated only by taking a more critical view of what we do and of how we use our health-care resources.

How will the private health-care industry affect our ability to achieve these objectives? In an ideal free competitive market, private enterprise may be good at controlling unit costs, and even at improving the quality of its products, but private businesses certainly do not allocate their own services or restrict the use of them. On the contrary, they “market” their services; they sell as many units as the market will bear. They may have to trim their prices to sell more, but the fact remains that they are in business to increase their total sales.

If private enterprise is going to take an increasing share of the health-care market, it will therefore have to be appropriately regulated. We will have to find some way of preserving the advantages of a private health-care industry without giving it free rein and inviting gross commercial exploitation. Otherwise, we can expect the use of health services to continue to increase until government is forced to intervene.

#### THE ROLE OF THE MEDICAL PROFESSION

It seems to me that the key to the problem of overuse is in the hands of the medical profession. With the consent of their patients, physicians act in their behalf, deciding which services are needed and which are not, in effect serving as trustees. The best kind of regulation of the health-care marketplace should therefore come from the informed judgments of physicians working in the interests of their patients. In other words, physicians should supply the discipline that is provided in commercial markets by the informed choices of prudent consumers, who shop for the goods and services that they want, at the prices that they are willing to pay.

But if physicians are to represent their patients' interests in the new medical marketplace, they should

have no economic conflict of interest and therefore no pecuniary association with the medical-industrial complex. I do not know the extent to which practicing physicians have invested in health-care businesses, but I suspect that it is substantial. Physicians have direct financial interests in proprietary hospitals and nursing homes, diagnostic laboratories, dialysis units, and many small companies that provide health-care services of various kinds. Physicians are on the boards of many major health-care corporations, and I think it is safe to assume that they are also well represented among the stockholders of these corporations. However, the actual degree of physician involvement is less important than the fact that it exists at all. As the visibility and importance of the private health-care industry grow, public confidence in the medical profession will depend on the public's perception of the doctor as an honest, disinterested trustee. That confidence is bound to be shaken by any financial association between practicing physicians and the new medical-industrial complex. Pecuniary associations with pharmaceutical and medical supply and equipment firms will also be suspect and should therefore be curtailed.

What I am suggesting is that the medical profession would be in a stronger position, and its voice would carry more moral authority with the public and the government, if it adopted the principle that practicing physicians should derive no financial benefit from the health-care market except from their own professional services. I believe that some statement to this effect should become part of the ethical code of the AMA. As such, it would have no legal force but would be accepted as a standard for the behavior of practicing physicians all over the country.

The AMA's former Principles of Ethics, which has just been superseded by the new set of principles adopted by the House of Delegates at its last meeting,<sup>7</sup> did include a declaration on physicians' financial interests, but it was directed primarily at fee-splitting and rebates. The old Section 7 of the Principles said: “*In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients [italics mine].*” Although at first glance this statement might appear to have proscribed any involvement of physicians in health-care businesses, it actually did not. The italicized words in effect restricted the application of Section 7 to income derived directly from the care of a physician's own patients. In the Opinions and Reports of the Judicial Council, a more detailed commentary that supplements and interprets the Principles of Ethics, this restriction is made quite clear. The council says that “It is not in itself unethical for a physician to own a for-profit hospital or interest therein,” provided that the physician does not make unethical use of that ownership. With respect to ownership of nursing homes and laboratories or interest in them, the council's position is much the same. Similarly, there is no proscription

of ownership of a pharmacy or of financial interest in pharmaceutical corporations — only of improper professional behavior on behalf of such economic interests. In the revised new Principles of Medical Ethics just adopted, there is no statement about economic conflicts of interest, but the council's previous Opinions and Reports on this matter will presumably stand.

The position of the Judicial Council seems to be that although physicians must always place the welfare of their patients above their own financial interests, there is nothing inherently improper in physicians' owning or investing in health-care businesses. If they act on their financial interests by overusing services or through kickbacks and rebates, that would be considered improper; but only actual abuses are of concern, not hypothetical or potential conflicts of interest.

The trouble with that policy is that it ignores the public responsibilities of the medical profession. Physicians evaluate drugs, devices, diagnostic tests, and therapeutic procedures in the public interest. Their opinions — expressed publicly in articles, speeches, and committee reports — not only influence the practices of their colleagues but carry weight in the councils of government and directly affect the fortunes of health-care businesses. That is why the *Wall Street Journal* and the financial sections of the major newspapers carry so many news items about medical developments. The medical-industrial complex depends heavily on the favorable public judgments of physicians, individually and collectively. Doctors may not be able to affect the profits of large companies by what they do in their own practices, but they can easily do so through published articles, public statements, or committee reports. The Judicial Council, in commenting on the potential abuse of laboratory services, rightly declared that a physician "is not engaged in a commercial enterprise . . ." (Opinions and Reports, Section 4.40(2)). That statement should apply to all of a physician's professional activities in the health-care field, not just to personal practice.

If the AMA took a strong stand against any financial interest of physicians in health-care businesses, it might risk an antitrust suit. Its action might also be misconstrued as hostile to free enterprise. Yet, I believe that the risk to the reputation and self-esteem of the profession will be much greater if organized medicine fails to act decisively in separating physicians from the commercial exploitation of health care. The professional standing of the physician rests no less on ethical commitment than on technical competence. A refusal to confront this issue undermines the moral position of the profession and weakens the authority with which it can claim to speak for the public interest.

A brochure published by Brookwood Health Services, Inc., one of the many new corporations that owns and operates a chain of proprietary hospitals, says that it "views each physician as a business part-

ner." (In evidence of this commercial partnership, the company recruits young physicians and subsidizes their start in private practice.) That sentiment may make for good working relations between hospital administration and medical staff, but it sounds precisely the wrong note for a private market in which the hospital is the seller, the physician is the purchasing agent for the patient, and the public pays the major share of the bill.

Critics of the position argued here will probably point out that even without any investment in health-care businesses, physicians in private fee-for-service practice already have a conflict of interest in the sense that they benefit from providing services that they themselves prescribe. That may be true, but the conflict is visible to all and therefore open to control. Patients understand fee-for-service and most are willing to assume that their doctor's professional training protects them from exploitation. Furthermore, those who distrust their physicians or dislike the fee-for-service system have other alternatives: another physician, a prepayment plan, or a salaried group. What distinguishes the conflict of interest that I have been discussing are its invisibility and a far greater potential for mischief.

#### OTHER PROBLEMS

The increasing commercialization of health care generates still other serious problems that need to be mentioned. One is the so-called "cream-skimming" phenomenon. Steinwald and Neuhauser discussed this problem with reference to proprietary hospitals 10 years ago, when the new health-care industry was just appearing on the scene. "The essence of the cream-skimming argument," they said, "is that proprietary hospitals can and do profit by concentrating on providing the most profitable services to the best-paying patients, thereby skimming the cream off the market for acute hospital care and leaving the remainder to nonprofit hospitals."<sup>1</sup> According to these authors, there are two types of "cream-skimming": elimination of low-frequency and unprofitable (though necessary) services, and exclusion of unprofitable patients (e.g., uninsured patients, welfare patients, and those with complex and chronic illnesses). The nonprofit hospitals could not employ such practices, even if they wished to do so, because they have community obligations and are often located in areas where there are many welfare patients. Another form of "skimming" by proprietary hospitals, whether intentional or not, is their virtual lack of residency and other educational programs. Teaching programs are expensive and often oblige hospitals to maintain services that are not economically viable, simply to provide an adequate range of training experience.

Although these arguments seem reasonable, there are no critical studies on which to base firm conclusions about the extent and implications of the skimming phenomenon in the proprietary sector. One has the sense that the larger teaching institutions, par-

ticularly those that serve the urban poor, will be feeling increasing competitive economic pressure not only from the proprietary hospitals but also from the medium-sized community hospitals in relatively well-to-do demographic areas. Their charges are generally lower than those of the teaching centers, they take patients away from the centers, and they put the centers in a difficult position in negotiating with rate-setting agencies.

Another danger arises from the tendency of the profit-making sector to emphasize procedures and technology to the exclusion of personal care. Personal care, whether provided by physicians, nurses, or other health-care practitioners, is expensive and less likely to produce large profits than the item-by-item application of technology. Reimbursement schedules are, of course, a prime consideration in determining what services will be emphasized by the health-care industry, but in general the heavily automated, highly technical procedures will be favored, particularly when they can be applied on a mass scale. Just as pharmaceutical firms have tended to ignore "orphan" drugs, i.e., drugs that are difficult or expensive to produce and have no prospect of a mass market,<sup>8</sup> the private health-care industry can be expected to ignore relatively inefficient and unprofitable services, regardless of medical or social need. The result is likely to exacerbate present problems with excessive fragmentation of care, overspecialism, and overemphasis on expensive technology.

A final concern is the one first emphasized by President Eisenhower in his warning about the "military-industrial complex": "We must guard against the acquisition of unwarranted influence." A private health-care industry of huge proportions could be a powerful political force in the country and could exert considerable influence on national health policy. A broad national health-insurance program, with the inevitable federal regulation of costs, would be anathema to the medical-industrial complex, just as a national disarmament policy is to the military-industrial complex. I do not wish to imply that only vested interests oppose the expansion of federal health-insurance programs (or treaties to limit armaments), but I do suggest that the political involvement of the medical-industrial complex will probably hinder rather than facilitate rational debate on national health-care policy. Special-interest lobbies of all kinds are of course a familiar part of the American health-care scene. The appearance of still one more vested interest would not be a cause for concern if the newcomer were not potentially the largest, richest, and most influential of them all. One health-care company, National Medical Care, has already made its political influence felt, when Congress was considering a revision of the legislation supporting the end-stage renal disease program in 1978.<sup>3,9</sup>

### SOME PROPOSALS

The new medical-industrial complex is now a fact of American life. It is still growing and is likely to be

with us for a long time. Any conclusions about its ultimate impact on our health-care system would be premature, but it is safe to say that the effect will be profound. Clearly, we need more information.

My initial recommendation, therefore, is that we should pay more attention to the new health-care industry. It needs to be studied carefully, and its performance should be measured and compared with that of the nonprofit sector. We need to know much more about the quality and cost of the services provided by the profit-making companies and especially the effects of these companies on use, distribution, and access. We also must find out the extent to which "cream-skimming" is occurring and whether competition from profit-making providers is really threatening the survival of our teaching centers and major urban hospitals.

I suspect that greater public accountability and increased regulation of the private health-care industry will ultimately be required to protect the public interest. However, before any rational and constructive public policies can be developed, we will need a much greater understanding of what is happening. A vast amount of study is still to be done.

The private health-care industry is primarily interested in selling services that are profitable, but patients are interested only in services that they need, i.e., services that are likely to be helpful and are relatively safe. Furthermore, everything else being equal, society is interested in controlling total expenditures for health care, whereas the private health-care industry is interested in increasing its total sales. In the health-care marketplace the interests of patients and of society must be represented by the physician, who alone has the expertise and the authority to decide which services and procedures should be used in any given circumstance. That is why I have urged that physicians should totally separate themselves from any financial involvement in the medical-industrial complex. Beyond that, however, physicians must take a more active interest in assessing medical procedures. Elsewhere I have argued for a greatly expanded national program of evaluation of clinical tests and procedures.<sup>10</sup> Such a program would provide an excellent means by which to judge the social usefulness of the private health-care industry, which depends heavily on new technology and special tests and procedures.

If we are to live comfortably with the new medical-industrial complex we must put our priorities in order: the needs of patients and of society come first. If necessary services of acceptable quality can be provided at lower cost through the profit-making sector, then there may be reason to encourage that sector. But we should not allow the medical-industrial complex to distort our health-care system to its own entrepreneurial ends. It should not market useless, marginal, or unduly expensive services, nor should it encourage unnecessary use of services. How best to ensure that the medical-industrial complex serves the interests of patients first and of its stockholders

second will have to be the responsibility of the medical profession and an informed public.

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## MEDICAL INTELLIGENCE



### FAMILIAL INSULIN RESISTANCE WITH ACANTHOSIS NIGRICANS, ACRAL HYPERTROPHY, AND MUSCLE CRAMPS

JEFFREY S. FLIER, M.D., JAMES B. YOUNG, M.D.,  
AND LEWIS LANDSBERG, M.D.

**R**ESISTANCE of the target cell to insulin action coexists with the skin lesion acanthosis nigricans in several distinct clinical syndromes.<sup>1</sup> The Type A syndrome of insulin resistance, in which insulin resistance and acanthosis nigricans occur together with polycystic ovaries in young females, is one example.<sup>1,2</sup> Receptors for insulin were reduced in concentration on circulating monocytes in three of the first four patients studied.<sup>2,3</sup>

Because insulin resistance can be clinically silent and acanthosis nigricans is often not observed, the incidence of this syndrome is unknown. Fundamental aspects of the disorder that remain unexplored include the cause of the receptor (or postreceptor) defect and the nature of the link between ovarian disease and the metabolic features of the syndrome.<sup>1</sup> We now report two siblings — a brother and a sister — in whom severe but clinically silent insulin resistance was found in conjunction with acanthosis nigricans, acral hypertrophy, and severe muscle cramps. The affected female proband had polycystic ovaries with ovarian dysfunction, thus resembling patients with Type A insulin resistance. She also had enlarged kidneys. The brother was eugonadal, and the size of his kidneys was not assessed.

From the Charles A. Dana Research Institute and the Harvard-Thorndike Laboratory of Beth Israel Hospital, Department of Medicine, Beth Israel Hospital (address reprint requests to Dr. Flier at the Department of Medicine, Beth Israel Hospital, 330 Brookline Ave., Boston, MA 02215).

## CASE REPORTS

### Case 1

The proband was a 30-year-old married white Portuguese woman referred for evaluation of hirsutism and amenorrhea in July 1978. Menarche was at the age of 14, but regular menstrual periods were never established. In 1971 her health was excellent and there were no signs of masculinization, but although no contraception was practiced, she never became pregnant. In 1973 progressive balding of the crown and temporal recession of hair occurred, along with growth of facial hair. In 1978 bilateral wedge resections of the ovaries were performed in another hospital. The ovaries were markedly enlarged and multicystic, with thickened cortexes. The kidneys were described as greatly enlarged, and the adrenal glands as enlarged. A transient decrease in the hirsutism followed surgery, but after two months hirsutism reappeared. An intravenous pyelogram revealed marked enlargement of both kidneys.

At about the time of the original onset of hirsutism, the patient had muscle cramps involving both upper and lower extremities and the trunk. The cramps lasted for 30 seconds to 30 minutes and were not associated with muscle weakness. The patient reported that although her hands had always been large and thick, her ring and shoe sizes had each increased one size over the previous year.

Physical examination disclosed a short, muscular young woman with frontal balding, a closely shaved face, and a prominent larynx. Her pulse rate was 110 beats per minute, her blood pressure was 150/96 mm Hg, and her weight was 50 kg. Acanthosis nigricans was present in the axillas, and there were numerous skin tags about the neck and back. There was no acne or striae. There was increased hair over the sternum, lower back, and lower abdomen. The breasts were small but not atrophic. Examination of external genitalia revealed moderate clitoral and labial enlargement. The vaginal mucosa was atrophic. The patient's general musculature was very well developed, and her muscle strength was good. Her hands were large, broad, and thickened with spongy subcutaneous tissue.

Table 1 shows the results of selected laboratory tests. The response to metyrapone was within normal limits. A decreased estrogen effect was noted on a smear of the vaginal mucosa. Chest and skull roentgenograms were normal. Biopsy examination of the deltoid muscle revealed minimal, nonspecific changes consisting of individual fiber necrosis, and mild focal endomysial fibrosis.

The patient was treated with Ortho-Novum (1/50), and over a six-month period her plasma follicle-stimulating hormone fell to 3.9 and her luteinizing hormone to 4.6 mU per milliliter. Cyclic bleeding, however, did not occur even when she was given a preparation high in estrogen (Ortho-Novum 1/80), and the plasma testosterone level was not diminished. Muscle cramps persisted. Fourteen months after the patient was referred to us, she underwent hysterectomy and bilateral salpingo-oophorectomy. Examination of the ovaries revealed hyperthecosis with marked focal luteinization of the stroma.

The patient had seven sisters and three brothers. One brother (Case 2) had a history of muscle cramps and large thickened hands, and one sister was infertile and acquiring hirsutism. The parents and other siblings were not studied. There was no family history of diabetes.