

# Potential for Reducing Health Care Costs by Public and Patient Education

## *Summary of selected studies*

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PATIENT AND PUBLIC HEALTH EDUCATION PROGRAMS remain one of the most neglected if not one of the most obscure areas in health care. The Department of Health, Education, and Welfare's Report to the President's Committee on Health Education (1) states that of \$18.2 billion allocated for health purposes, DHEW estimates that it spends no more than \$44 million on health education, about one-fifth of 1 percent. The President's Committee also discovered that State and territorial health departments allocate less than one-half of 1 percent of their budgets for health education. As late as 1970, Sommers and Sommers identified only 50 U.S. hospitals with a planned health education program (2).

Recently, however, there has been an unusual amount of interest in patient and public health education activities in the nation. In his 1971 health message to Congress, President Nixon devoted several paragraphs to the importance of health education for the health care of Americans. Later that year he followed his message by appointing the President's Committee on Health Education. Blue Cross Association, at the national level, has also increased its interest in health education; in Michigan, Blue Cross television commercials are geared to encourage health education. The American Hospital Association has endorsed the concept of health education, and the American Association of Medical Clinics

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is also encouraging its members to pursue health education activities for clients. The Health Insurance Association of America recently endorsed the concept of health education and encouraged member organizations to provide health education as a reimbursable benefit.

This heightened interest in health education activities is not without a rationale. Health care costs have risen at an alarming rate. A comparison of the percentage increases in medical care and other major components in the Consumer Price Index for 1950 and 1970 reveals that the cost of medical care has risen twice as fast as all other items (3). In addition, during the past 20 years expenditures for health and medical care as a percentage of the gross national product have also increased sharply (4). The data indicate that inflation of health care costs has occurred at a rate considerably in excess of the nation's general inflation. In part, medical care is too costly, because the capacity of the medical care system is too limited.

The 1965 health legislation which brought health services to many poor and elderly Americans, strained a health care system too small to meet the increased demand without a price increase. What is really alarming is that despite increased costs for health care services we are still not as healthy a nation as we could be (5,6). It seems that the rising use of services and increased expenditures for health care have had little positive impact on the health status of Americans.

Although interest has emerged in the role of health education in attempts to reduce runaway costs, can these efforts help reduce the burdens on our health care system? The results of the following studies indicate that this question can be answered positively.

### **Health Education Studies**

At Massachusetts General Hospital, Boston, Egbert and associates (7) randomly divided 97 patients, hospital-

ized for elective intra-abdominal surgery into experimental and control groups. The control patients were not told about postoperative pain, and they were given routine treatment. The 46 patients in the experimental group were told where they would feel the pain, how severe it would be, and how long it would last. They were advised that pain is caused by spasms of the muscles under the incision, and that they could relieve most of the pain by relaxing the muscles. The experimental group patients were taught breathing exercises that relax the muscles, and they also were taught how to use the trapeze hanging over the middle of the bed [control patients also had the trapeze but were not instructed in its use]. The experimental patients were told to request medication if they could not achieve a reasonable level of comfort. Interestingly, the patients in the experimental group requested 50 percent fewer narcotics for the relief of pain, and the surgeons, unaware of the care each patient had received, sent the experimental patients home an average of 2.7 days earlier than the control patients.

Avery and co-workers (8) conducted an educational program for asthmatic patients from an inner-city area who used the emergency room of a large university medical center. These investigators randomly assigned 58 patients into control and experimental groups. The experimental patients were placed in small groups for discussions with professionals concerning the causes of asthma, with special emphasis on factors contributing to asthma that can be altered by patient behavior. Four areas were considered: (a) lifestyles with attention to smoking, obesity, and so forth, (b) allergens in the environment and measures to eliminate them, (c) general health measures, and (d) drugs used prophylactically and in an attack.

Reduction in the cumulative total number of visits to the emergency room for asthma treatment is worth noting. After 4 months, the patients in the experimental group made 55 fewer visits to the emergency room. The authors calculated that the difference in costs of conducting the patient education program as opposed to the cost of rendering medical care is approximately 1: 6. For every dollar spent in delivering educational services, \$6 of medical care costs were saved.

Levine and Britten (9) formally instructed 45 patients with hemophilia A and B and their families in the management of their bleeding problems. After a brief training session the patients were allowed to conduct infusions in the clinic or in the emergency room. When physicians were satisfied that the patients and their families knew when infusion was necessary, and when they were capable of giving infusions, patients were permitted to conduct home infusion without prior consultation with a physician. The authors report that in the year before the study, these patients spent 432 days in the hospital; in the year after the study started the same patients spent only 42 days in the hospital, yielding an 89 percent reduction in hospitalization costs.

The authors further reported a 74 percent reduction in absenteeism from work or school, a 76 percent reduction in outpatient visits, and a 45 percent decrease in total health care costs to the patient.

In a study by Rosenberg (10), 100 congestive heart patients were assigned to experimental and control groups at the St. Peters General Hospital, New Brunswick, N.J. The patients in the experimental group and their families were given a broad range of education and counseling about congestive heart disease. They received information on diet, medications, and the disease process. The patients in the experimental group had one-third as many readmission days, one-half the number of readmissions, adhered more faithfully to the medical regimen, and had a lower intake of sodium in their diet.

At the University of California Medical Center, Miller and Goldstein (11) installed a telephone "hot line" so that diabetic patients could call for information, medical advice, and to get prescriptions filled. Patients at the diabetic clinic were educated to use the new service. From 1968 to 1970 the incidence of diabetic coma at the clinic was reduced from 300 to 100, and the number of emergency room admissions for patients with diabetes was reduced by 50 percent, although the clinic patient population increased from 4,000 to 6,000 during this period. The authors calculated that the "hot line" helped to save 2,300 visits for patients for medications alone.

Clearly, the health care system is now offering many challenges for patient and public health education programs to reduce the strain on the health care system. There is an opportunity to educate the public to demand and use new types of health manpower. By using new health manpower, particularly the nurse clinician or nurse practitioner, the nation could substantially increase the capacity of its medical system and provide health care for more Americans. Golladay and co-workers (12) report that potential gains from using "physician extenders" are an increase in productivity of primary care practice by 75 percent and a reduction in the commitment of physician time required to serve a patient load of 100 visits per week by 14.2 hours. According to Spitzer and co-workers (13) the use of nurse practitioners in a private primary care practice could not only increase the number of patients seen per day but that it is also cost effective from society's point of view. It is clear that if the public (and some providers) accept the expanded role of the nurse, the capacity of our health system will increase.

Educators have an opportunity to reduce the costs of health care by educating the public to use alternative approaches to health care delivery, particularly now that the nation is searching for methods to assure higher levels of health care for all people as it struggles to reduce its costs. Perrott (14), in a report on the Federal employees health benefit programs from 1961 to 1968, concluded that patients in a prepaid group

practice paid less for care than patients in the traditional Blue Cross-Blue Shield system. The findings of many studies demonstrate this point. These studies were carried out by the Health Information Foundation of New York, The Medical and Hospital Advisory Council of the Board of Administration of the California State Employee Retirement System, and the Columbia University School of Public Health and Administrative Medicine. They were summarized by Donabedian in 1965 (15).

But while the total cost (premium plus out-of-pocket expenses) of health care in health maintenance organizations (HMOs) is less than the fee-for-service system, enrollment rates into HMOs have been painfully slow. Many health maintenance organizations have been unsuccessful because of their inability to market their programs. Yet there is evidence that people who have a greater understanding of the characteristics and attributes of HMOs enroll more often in health maintenance organizations (16-18). The Medical and Hospital Advisory Council of the California State Employees Retirement System (18), in a survey of members who were offered more than 10 different health insurance plans to determine attitudes and reasons for choosing health plans, found little evidence that subscribers were adequately aware of the characteristics and attributes of each plan. As a result of this finding, the Council urged the promotion of health education that would include accurate and factual information on the capabilities and limitations of the plans—health plan education (18a).

## Discussion

Another and perhaps the most important challenge to reduce the cost of health care by patient and public education programs is the misconception of many people that additional health care for them will result in improved health. Opportunity exists to educate the public and some health professionals that this is not so. Concerning the national demand for more medical care, there is a tendency to shrug off responsibilities and to delegate matters of maintaining the nation's health to health professionals. For instance, the national demand for preventive measures—pills and other palatable nostrums to replace less pleasant remedies such as dieting, abstinence from drugs of various kinds, and ineffective efforts to eliminate poverty—further strains the health care system. Health educators can make people aware of the fact that they can exercise significant control through sound health practices or early detection over major causes of sickness and premature death from accidents, many forms of cancer, stroke, alcoholism, venereal disease, drug abuse, obesity, premature births, most infant mortality, high blood pressure, ulcers, many dental problems, and many health problems related to respiratory diseases. These are in addition to the diseases prevented by immunization.

Although additional, more carefully controlled studies

of the effect of education of patients and the public would be helpful, there is significant evidence that education of patients to understand the nature of their illness and what they can do to help themselves, and education of the public to use new methods of health service delivery could reduce the cost of health care.

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