# MCV/Q

MEDICAL COLLEGE OF VIRGINIA QUARTERLY
VOLUME SIX • NUMBER THREE • 1970

## *SYMPOSIUM ON MEDICAL CARE*

MEDICAL COLLEGE OF VIRGINIA QUARTERLY Published quarterly (Spring, Summer, Fall, Winter), by the Medical College of Virginia, Division of Health Sciences, Virginia Commonwealth University.



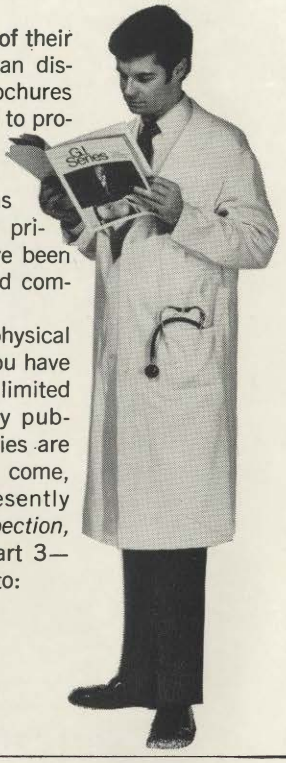
The MEDICAL COLLEGE OF VIRGINIA QUARTERLY publishes results of original research in basic and clinical sciences. Contributions from outside the Medical College of Virginia faculty are invited. Manuscripts, submitted in duplicate, should be prepared according to recommendations in the Style Manual for Biological Journals, Washington D. C., American Institute of Biological Sciences, 2nd Ed, 1964.

*Correspondence:* MEDICAL COLLEGE OF VIRGINIA QUARTERLY, Medical College of Virginia, Richmond, Virginia 23219. Phone 703/770-4027.

*Subscription rates* for U.S.A. and Canada: 1 year, $4.00; 2 years, $7.00; 3 years, $9.00. All other countries: 1 year, $5.00; 2 years, $8.00; 3 years $10.00. Interns, residents, and students: 1 year, $2.00.

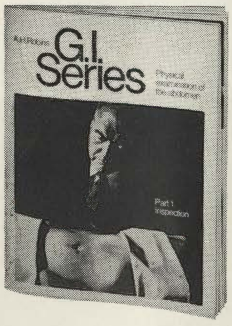
*Third class postage* paid at Richmond, Virginia.

## A new service from A. H. Robins




Late in 1969, the A. H. Robins Company, because of their special interest in gastrointestinal medicine, began distributing to Residents and Interns a series of brochures entitled G.I. SERIES. This publication was designed to provide a quick, yet comprehensive review of basic procedures and practices in G.I. medicine — with particular emphasis on the physical examination as performed in the office or at bedside. Designed primarily for the student physician, the contents have been arranged and programmed for quick reading, rapid comprehension and easy review.

An excerpt from the first of the six-part series on physical examination of the abdomen is shown at right. If you have teaching responsibilities, limited quantities of the already published sections of the series are still available on a "first come, first served" basis. Presently available are Part 1—*Inspection,* Part 2—*Palpation* and Part 3—*Percussion.* Simply write to: The Medical Department, A. H. Robins Company, 1407 Cummings Drive, Richmond, Virginia 23220




# the spasm reactors in your practice deserve "the Donnatal® effect"

| | each tablet, capsule or 5 cc. teaspoonful of Elixir (23% alcohol) | each Donnatal No. 2 | each Extentab® |
|---|---|---|---|
| hyoscyamine sulfate | 0.1037 mg. | 0.1037 mg. | 0.3111 mg. |
| atropine sulfate | 0.0194 mg. | 0.0194 mg. | 0.0582 mg. |
| hyoscine hydrobromide | 0.0065 mg. | 0.0065 mg. | 0.0195 mg. |
| phenobarbital (warning: may be habit forming) | (¼ gr.) 16.2 mg. | (½ gr.) 32.4 mg. | (¾ gr.) 48.6 mg. |

A·H·ROBINS

A. H. Robins Company, Richmond, Va. 23220

# MCV/Q

MEDICAL COLLEGE OF VIRGINIA QUARTERLY

*A Scientific Publication of the School of Medicine*
*Health Sciences Division of Virginia Commonwealth University*

1970 / Volume Six / Number Three

## SYMPOSIUM ON HEALTH CARE



COVER: *Achilles bandaging Patroclos*—figure from a cup with inscription of the potter Sosias, originally from Vulci, 5th Century BC, now in Staatliche Museen, Berlin.

From *Medicine in Art* edited by Jean Rousselot.

# About This Issue:

*The United States enjoys the world's highest standard of living. Our medical investigators contribute a major share of the advances of medical science. And, at its best, medical care in this country is superior to that anywhere else. These facts contrast with some other realities: The U. S. lags behind several other countries in such indexes of public health as infant mortality; the cost of medical care has risen so steeply that many people can ill-afford it; and either for this reason alone or for others, too many people are unable to benefit from the excellent health care that could be made available to them.*

*Criticism of the delivery of health care comes from many quarters, including the medical profession itself. Suggestions for the correction of inadequacies are also plentiful. One proposed remedy hinges on graduating many more doctors by building new medical schools, expanding present ones, or both. Another stresses the importance of more effective use of doctors, such as by the grouping together of different specialists, and by concentrating on the prevention and early detection of disease. Other solutions call for more sweeping changes, including prepaid group plans. A bipartisan bill, recently introduced in Congress, would create a comprehensive health insurance program for all citizens.*

*The present issue attempts to focus on some of the weaknesses in the health care system and on some of the possible answers.*

***SIS***

# Better Care at Less Cost Without Miracles*

EDMUND K. FALTERMAYER

*Member, Board of Editors,*
*Fortune,*
*New York, New York 10020*

Our present system of medical care is not a system at all. The majority of physicians, operating alone as private entrepreneurs, constitute an army of push-cart vendors in an age of supermarkets. Most patients pay by the cumbersome "fee-for-service" or piecework method, which involves separate billing for visits to doctors, shots, x-rays, laboratory tests, surgery, anesthesia, hospital room and board, etc., etc. The American hospital system, as Herman M. and Anne R. Somers of Princeton University said in their book, *Medicare and the Hospitals,* "is largely a figure of speech," the result of a haphazard growth of isolated, uncoordinated institutions.

For a patient simply to *find* medical care can be maddeningly difficult. In poor city neighborhoods and rural areas, the supply is sometimes fatally sparse. The middle-class citizen, living in a region where doctors are statistically abundant, encounters frustrations when he seeks "access"—a suitable entry point into the medical labyrinth, where a competent person can give an accurate diagnosis of his ailment, or relay him to the proper specialist. With more and more doctors working a five-day week, access has become especially difficult on evenings and weekends. Increasingly at those hours, people are forced to resort to the overcrowded, understaffed emergency rooms of hospitals, where admissions have shot up by 250 percent in the past twenty years, and where only a third of the people waiting for attention are true emergency cases. When he is finally in what he hopes are good hands, the patient is incapable of evaluating either the quality or the quantity of the service he receives. In his ignorance he may submit to more care than is necessary—adding both to the personal risk and to the strain on an inflation-prone system. . .

Some eight million Americans now receive medical care under plans that work well, and that are subject to the constraints of the marketplace. These "prepaid group practice" plans are not the only model for reform. Further, even these plans have not yet been brought to the degree of efficiency that they may someday reach. Nevertheless, they represent an alternative that more Americans should be able to choose. Their expansion would exert a badly needed competitive discipline upon the rest of the medical system.

The Kaiser Foundation program is by far the largest of the prepaid systems. It has two million members and its own network of hospitals and outpatient clinics in California, Oregon, and Hawaii. The program began in the late 1930's when the late Henry J. Kaiser, then building hydroelectric dams in remote locations, felt obliged to provide medical services for construction workers and their families. After a conventional, fee-for-service payment system proved unpopular, Kaiser substituted a single fee covering all needed services, and the plan was enthusiastically accepted. In response to requests from hundreds of former shipyard workers, Kaiser kept the program going on the West Coast after 1945, and opened it to the general public. Today, employees of the various Kaiser companies and their families constitute only about 3 percent of the membership.

The Kaiser plan has made some notable improvements over the orthodox means of distributing medical care. To begin with, access is easy. Physicians of all major specialties are housed in large clinics in each of the regions covered by the plan. . . . If the patient requires hospitalization, he is sent to one of the Kaiser Foundation's nineteen hospitals, many of which adjoin the outpatient clinics.

Unlike ordinary private "health insurance," which is really sickness insurance designed to reimburse selected medical expenses under the fee-for-service system, the Kaiser program assumes broad responsibility for keeping its members sound of body. The range of services varies according to the employer group or individual member, but a fairly typical plan offered in the San Francisco-Sacramento area currently costs a total of $35.40 a month for a subscriber with two or more dependents, including the employer's contribution. This covers all professional services in the hospital, in the doctor's office, and in the home, including surgery; all x-ray and laboratory

* Excerpts from *Fortune,* January 1970: Better Care at Less Cost Without Miracles, by Edmund K. Faltermayer, p 80. Reprinted with permission. Complete text of this article, as well as other material from the January 1970 issue of *Fortune* (Our Ailing Medical System), is available in paperback book: *How to Think About the Environment,* $1.95, Harper and Row, April 1970.

services; all preventive care, including physical examinations; and hospital care for up to 111 days per person in a calendar year. Some nominal charges are made for drugs and for doctors' visits ($1 per office visit, and up to $5 for house calls after 5:00 P.M.), and there is a $60 charge for maternity care. Some items are excluded, notably dental care, psychiatry, and nursing-home care (though some Kaiser plans offer psychiatric and convalescent care, too). For an additional monthly payment of 15 cents, hospitalization can be extended all the way to 365 days.

The more liberal of the Kaiser plans probably cover about three-quarters of a family's insurable medical expenses. The very breadth of the coverage provides two important benefits. On the one hand, no paid-up member need be deterred from seeking medical care for fear of the expense. On the other hand, no built-in bias exists favoring a particular *type* of care, since most types are covered anyway. A patient does not have to be admitted to a hospital for a test or a minor operation, which could be given on an ambulatory basis, solely in order to gain insurance coverage.

The Kaiser plan also provides an incentive for efficiency. The providers of medical care—the doctors and the hospitals—*share* the financial risks of illness with the patient. Members' monthly charges are set for a year, and during that period the program must operate on the revenue generated by these charges. If costs exceed revenues during that period, the Kaiser system must absorb them.

But any reduction in operating costs below management's projections swells a bonus fund that is shared by doctors and hospitals. Doctors are not paid on a fee-for-service basis, but receive a relatively stable annual income. When they render excessive treatment, they waste their own time and risk a reduction in their bonus, which, coming atop generous regular incomes, can be sizable. In 1968 the eligible doctors in Kaiser's northern California region each collected a bonus of $7,900. Since they also received regular incomes that ranged from $20,000 to $53,000, they probably fared better, on the average, than solo practitioners in the area. And because working hours are fairly regular in group practice, with members taking turns working nights and weekends according to schedules set in advance, the doctors probably lead a more pleasant life.

Even though there is no limit to the number of times a member can see a doctor, members of the Kaiser plan make slightly *fewer* visits to doctors than the public in general. But the most dramatic savings are in hospitalization. One 1965 study, comparing Kaiser members in northern California with the population of California as a whole, showed that the average Kaiser member spent only 69 percent as much time in a hospital. Still, the Kaiser plan has been affected by the wage inflation common to the health industry. Its nurses won a 40 percent wage increase in 1966, and its hospital workers came under the federal minimum wage law in 1967. As a result, premiums in northern California have risen about 50 percent since 1960, slightly more than the rise in the nationwide index of medical care during this period. But Kaiser's health services still cost from one-fourth to one-third less than the same package of services would cost outside the system.

The Kaiser plan operates in the black. Counting depreciation and some other items, the program generated a total cash flow of $17,200,000 in 1968 on revenues of $216 million, enough to provide funds for expansion. Except for one recent federal grant under the Hill-Burton hospital program, the Kaiser Foundation has financed all of its expansion from its own revenues and from borrowings. Unlike most voluntary hospitals, the Kaiser hospitals have never had to fall back on rich trustees or public fund-raising programs to cover deficits or obtain funds for expansion.

Kaiser's experience refutes the widely held belief that if medical services are "free," or virtually free, the public will stampede to them. Neither does the evidence indicate that Kaiser has gone to the opposite extreme, cutting corners and denying needed medical care. This criticism is often voiced by doctors opposed to prepaid group practice, along with the familiar charge that group practice precludes the free choice of "family" physician, and that it renders care in an impersonal, "assembly-line" manner, which lowers the quality of medical services.

In fact, the Kaiser program makes possible an educated choice of a family physician, because the patient in a large clinic is in a position to compare doctors. The atmosphere at one Kaiser clinic, in suburban Walnut Creek, California, is a good deal less suggestive of an assembly line than the typical jammed office of a solo practitioner; the place has more the relaxed ambience of a resort inn. A study team from the Johnson Administration's National Advisory Commission on Health Manpower gave the Kaiser program a thorough going-over in 1967, and found the quality of services to be high. One factor raising quality, according to Dr. Wallace H. Cook, the sun-tanned physician in chief of the Walnut Creek Center, is that doctors devote themselves to "absolutely pure medicine here." They have nothing to do with the billing, and they do not have to worry about the financial impact of the type of care that they prescribe on the patient, since virtually all phases of medical care are prepaid.

"Peer review," that much-evoked but little-practiced procedure for uncovering medical incompetence, is inherent in a group operation. "We constantly look over each other's charts," says Cook. An incompe-

tent doctor can quickly lose the respect of his colleagues. In solo practice, doctors obviously can never lose their jobs no matter how incompetent they are; with only a few exceptions, licensed doctors are in business for life regardless of performance. At Kaiser, however, even doctors who have attained relatively secure "partner" status, which comes after a three-year probationary period, can be discharged. Not long ago a surgeon too inclined to use the knife was let go.

Another advantage that Kaiser physicians enjoy over their counterparts in solo practice is access to good health records. Generally, health records are in a medieval state, with incomplete data on each individual scattered in every doctor's office and hospital that he has ever visited. Most Kaiser members' medical histories are readily retrievable, and in a growing number of cases are stored on computer tapes. The eventual goal is to give each member a lifetime electronic medical file, based in part on the periodic, multiphasic testing with which the Kaiser Foundation is now experimenting on a large scale.

Probably the greatest spur to maintaining the quality of medical services is the fact that Kaiser does not have a monopoly over health care in the areas it serves. Once a year each group, and each individual within a group, has the chance to drop out of the program if he wishes. If enrollment figures are any guide, the consumers couldn't be happier. Membership has grown threefold in the last ten years, and the Kaiser Foundation is expanding about as fast as its financial resources will permit, currently at a rate of 200,000 persons a year. . . .

By almost any measure, then, the Kaiser program represents a quantum leap ahead of the prevailing pattern of health care in the U.S.

# One Industry's Involvement in Health Care*

EDGAR F. KAISER

*Chairman of the Board,*
*Kaiser Industries,*
*Oakland, California 94604*

The title of my remarks is somewhat misleading, because the Kaiser companies are involved in a number of industries. Our founder started his corporate business career as a contractor in 1914, building highways and paving streets in British Columbia, Canada. Therefore, our first experience with medical care arose from the construction business.

Our experiences with medical care have encompassed three basic areas:

First—industrial care; namely, the care of our own employees who were injured on the job.

Second—industrial care, plus health care of workmen and their families on construction projects in remote areas in the United States—and overseas; and later during World War II in overcrowded communities with overburdened medical and hospital resources.

Third—providing a comprehensive medical and hospital service for members of the public.

Each followed the other as a natural outgrowth of our business experiences.

My remarks to you this morning are addressed as an industrialist whose organization—out of necessity—became involved with medical care.

From 1914 to 1927 our experiences in the medical care field were limited to providing industrial medicine. By 1927 we embarked on our first foreign venture. We paved approximately 200 miles of road in central Cuba. There it became necessary to establish what I would classify today as first-aid stations. As I look back on it, they were quite primitive. Even at that time, however, working in a foreign country posed some very unusual medical and management problems.

In those days the Cubans were not accustomed to very good medical attention, particularly the *guayagos*. These were uneducated, unskilled men from the interior of the island who had to be supervised in depth by expatriates. Even in those days the turnover of expatriates was excessively high—if their families did not come with them. Therefore, we had to make arrangements for good medical care for the expatriates and their families. This immediately posed a problem, because the medical attention required for expatriates was considerably above the level that the *guayagos* were used to receiving. It soon became evident that we must furnish the same class of care for all the people. Thus we started learning something about medical care—in construction work in a foreign country.

Then in 1930 we joined a group of contractors, known as the Six Companies, and bid successfully on Hoover Dam which in its early history—depending on which Administration was in office—was known as both Boulder Dam and Hoover Dam.

Las Vegas, Nevada was the nearest town, and it had less than 5,000 people. I remember the little hotel, called the "Sal Sagev"—Las Vegas spelled backwards! And believe me, that was the *only* hotel. Since Hoover Dam would require a minimum of 5,000 workers—and many would be bringing their families—this meant a town of some 15,000 people at the dam site. Obviously, it had to have medical facilities and that meant building a hospital, staffing it, and operating it. We went through all kinds of problems, the most serious of which was that we were living in a very closely knit community, and the spread in incomes between supervisory and hourly personnel was such that it became clear that the hourly workers could not afford adequate medical care for their families.

From Hoover Dam we moved to Bonneville on the Columbia River about forty miles from Portland, Oregon. There were adequate medical facilities and there was a hospital association in Portland that provided a service similar to Blue Cross. We tried that. The medical care for the families was done on a fee-for-service basis, but that wasn't really satisfactory. We were not receiving adequate medical attention. This is not a criticism of the doctors; it was a combination of circumstances: forty miles away from good facilities—and, again, the difference in incomes. But it emphasized to us once more that some other system must be found.

From Bonneville we went to Grand Coulee, ninety miles from Spokane. In the case of these three projects the group of contractors was different, but on

* From the *Journal of Medical Education* 45: 88, 1970. Reprinted with permission. Delivered at the Plenary Session on "Dimensions of the Problem" at the 80th Annual Meeting of the Association of American Medical Colleges, Cincinnati, Ohio, October 31, 1969.

Bonneville and Grand Coulee the Kaiser Company had the responsibility as a sponsor and project manager.

Our work on Grand Coulee was what was called the "second step." Another group of contractors had built the foundation of Grand Coulee Dam, and our work was to build the superstructure and the powerhouses—a $50 million contract.

The first contractor had a hospital at the site, but there was much criticism of how it had been operated. When we started negotiations on our union contracts, the unions stipulated that the contractor could not operate the hospital as had been done on the previous job. This posed a real problem. Who was going to operate it? And it wasn't a problem for us as contractors alone. When we asked the unions, they too were stumped.

### The First Prepaid, Group Practice Industrial Health Care Program

At that time in the Southern California desert where the Metropolitan Water District aqueduct was being built, a young doctor named Sidney Garfield had organized a program to provide medical care through group practice to populations of construction workers. On the California desert job, patients were first charged a fee for service. This system failed, and Dr. Garfield introduced a type of capitation payment—first for industrial care and later for general medical services. There were problems, but the system worked. The workers were much happier, and there was less lost time for illness and from industrial injuries.

Dr. Garfield had heard about Grand Coulee, and he came north to talk with us. He explained the system he had used on the desert and proposed that we try it at Grand Coulee. We presented it to the unions; they approved it; and we initiated the plan that also included the families for full coverage. We remodeled the hospital and upgraded the equipment. We charged seven cents a day for the wives and twenty-five cents a week for each child. Much to our amazement the system was not only self-supporting financially but was enthusiastically received by the workmen and their families.

When Grand Coulee was nearing completion, World War II was imminent. The Maritime Commission began a shipbuilding program a few months in advance of Pearl Harbor. It immediately became clear that the shipyards for which we had management responsibility and which were to be located in the San Francisco Bay Area, specifically, Richmond, and in the Portland, Oregon-Vancouver, Washington area, would eventually require over 100,000 workmen in each yard. It was likewise clear that these communities could not absorb that additional medical load. So we built hospitals and clinics, and we put into effect basically the same plan that we used at Grand Coulee.

There was one difference. Since there were other doctors and hospitals in each of those areas, the plan was voluntary. In other words, shipyard workers did not *have* to belong to the plan; it was optional. The plan worked—and it worked successfully. Before War's end it served some 90,000 workers and their families in the Richmond, California area and about the same number in the Portland-Vancouver area.

### The First Voluntary, Community Group Practice Program

Then came the end of the war. We could have closed the hospitals and disbanded the physicians; but many of our former shipyard workers who had now returned to peacetime occupations liked the program. We had hundreds of individual requests to continue it, as well as a demand from the unions.

I should make it clear that, starting with the operations at Grand Coulee, the medical plans were operated on a non-profit basis; and we contracted with the doctors to provide medical service.

It was at this point in the history of our medical operations that my father made a most important decision. I think most of us around him assumed that, with the closing of the shipyards, we would terminate the health plan operation. But, when we had the requests from the individuals and the unions, my father said: "Well, why shouldn't we open the plan to the public and see if it works? It's been tested under all sorts of conditions—in war-time and peace-time, in depression and prosperity, in remote desert areas and in large cities. We know the basic incentives are good. Let's go!"

Many people have asked us why we took on this responsibility, since it aroused much criticism, resistance by organized medicine, and a heavy commitment of time and effort by management from our industrial companies. For my father the reasons were partially personal. His mother, my grandmother, died in his arms when he was a boy of sixteen. He always believed that the family's lack of money kept her from the medical care that might have saved her life. Later my grandfather went blind, though his sight might have been saved if the family had had the money for proper care. And my mother had a major operation on our kitchen table. These events left my father with a desire he expressed many times: to do something so that people could afford the costs of medical and hospital care.

The other factor was our conviction that we had helped develop one workable solution to health care problems. The plan had demonstrated that it is possible within our free enterprise system to organize medical care on a private, financially self-sustaining basis so that the consumer is satisfied and the physician is professionally gratified by his role. We believed

then—and do now—that this approach is one that should be encouraged and extended.

### Present Organization of the Kaiser Foundation Medical Care Program

In the twenty-four years since our program was opened to the public it has matured measurably. Today it is the largest practice prepayment plan in the United States, operating in six regions: Northern California, Southern California, Portland, Oregon, Hawaii, and most recently Cleveland, Ohio and Denver, Colorado. The program provides comprehensive, prepaid medical hospital care for two million members on a direct-service basis through nineteen hospitals, two extended-care facilities, and fifty-two clinics. Medical service is provided by an autonomous group of physicians in each region. Hospital service is provided by the Kaiser Foundation Hospitals and through arrangements with a number of independent community hospitals.

Our Health Plan membership is made up of federal, state, and local government employees—such as postal workers, university faculty and employees, members of health and welfare funds, including retail clerks, culinary workers, teamsters, longshoremen, and industrial unions. Less than four percent of our members are employees of Kaiser industrial companies.

Wherever I travel these days, people ask me about the medical program. How does it work? I tell them that we have not developed any panacea for medical problems. We've made mistakes and we are still learning. We've discovered several basic lessons that work —for us.

Most importantly, we have developed workable arrangements with participating physicians. They—and only they—hold full responsibility for the professional care provided within our program. Each group of physicians operates as an independent, autonomous medical group. The medical groups, the hospitals, the health plan, and business management are all directly involved in the planning decisions. Certainly problems and disagreements arise in our relations with the medical groups. But they have always been worked out, because both parties—the physicians and Kaiser management—are dedicated to the program and believe in its principal features.

The professional and organizational independence of the Permanent physicians is preserved by continuing a contractual relationship in each region between the Health Plan and the medical group. The basic compensation to the Medical Group for serving Health Plan members is negotiated annually as a per capita payment, so much per member per month. For these payments the medical group takes full responsibility for organizing and providing medical services for all Health Plan members. How the doctors share that compensation is their responsibility, just as the provision of professional care is their responsibility. I believe this relationship is the basic strength of our program.

When the physician knows that he need not be concerned about his patient's ability to pay for modern medical care, he is relieved of personal concerns for imposing a financial hardship on his patients. Similarly, when the prepaid benefits are broadly comprehensive for both in-patient and out-patient services, and when the physicians are paid on a basis other than individual fees for individual services, the incentives for appropriate utilization of services are greatly enhanced.

For example, there is no necessity to hospitalize a patient for extensive diagnostic tests—and to occupy a hospital bed unnecessarily—when those tests can be done on an out-patient basis and covered under prepaid benefits.

Our financial arrangement with these medical groups also stresses the element of preventive care. Many facets of this aspect of medicine and their significance to total health care are, I realize, still being examined and debated within your profession. Nevertheless, when physicians are paid on a capitation basis, rather than fees for services rendered, the doctor's professional incentives for early diagnosis and for practicing the principles of preventive care are reinforced by an economic incentive.

Membership in our Health Plan is on a voluntary basis. We insist that any group that contracts with us offer its members the choice of at least one other essentially different type of prepayment plan—such as those offered by Blue Cross or commercial programs. The same type of choice is offered to our own employees.

During the past two years visitors from more than thirty medical schools have come to look us over and to ask us about our experiences with prepaid group practice. They are keenly interested in us, because we have a system—a system designed to provide comprehensive health care to a large and diverse population on a financially self-sustaining basis.

### Health Plan/Population Interactions

Anything that affects our membership affects us, and we must anticipate and be ready for change. To illustrate, we recently embarked on a four-year facilities program. It is our third since 1962 and will cost some $79 million, of which nearly sixty percent is borrowed from a group of banks and insurance companies. The question of when and where these new facilities should be built is answered through a complicated planning process that projects us into 1972—when the current facilities program is scheduled for completion. Servicing the debts on these facilities takes us even further into the future. Our

lenders had to be convinced that the program would be able to generate enough revenue to make debt retirement payments into the 1970's and 1980's. In those terms our planners are already living in 1988.

Therefore, we must continually appraise and define our population, present and prospective Health Plan members, in terms significant to the economics of medical practice, such as age, family content, and geographical distribution. The participating physicians must attempt to evaluate the significant advances in the science and technology of medicine to see how our program can incorporate them for the benefit of our Health Plan members and for the economy of our operations. We must try to gauge the future availability—and cost—of physicians and paramedical personnel.

We must also attempt to evaluate the impact of present and prospective government-financed health programs and health care legislation. This raises the major question facing the medical care industry in the United States: how to provide adequate medical care to *all* segments of our population.

### Relation to Health Care in America in the 1970's

Nearly nine out of every ten Americans under the age of sixty-five are covered by voluntary health insurance plans. There is clear-cut evidence that trends in voluntary health insurance are toward broader coverage of services—toward more comprehensive benefits.

Thus, for the great bulk of Americans, voluntary health insurance is the clear choice among alternative methods of payment for personal health care services. There are many advantages to this voluntary system. It provides a concept of real choice for the consumer; it encourages competition; and it is flexible enough to permit experimentation with new ideas.

Leaving aside for a moment the indigent and medically indigent, there are some identifiable segments of the population whose health care services cannot be adequately covered by voluntary health insurance. The aged represent one such category.

Today, of course, virtually all persons sixty-five and over are covered by Medicare, with many millions also covered by supplemental health insurance, such as that offered by our Health Plan.

I would favor extending Medicare-type coverage to that segment of the population classified as "totally disabled." Like the aged, they represent a significantly higher cost group for personal health services than the nation as a whole. We support the concept that, where voluntary health insurance is inadequate, it is appropriate for the federal government to play a significant role in the financing mechanism.

Organizing and financing comprehensive health care for the indigent and the medically indigent is another problem—one that appears more complex than the issue of the aged or disabled. The resolution of this problem requires accelerated experimentation with different approaches.

A promising development, in my opinion, is the involvement of medical schools in organizing health care services in poverty areas. Whether these projects be Neighborhood Health Centers under the auspices of the Office of Economic Opportunity or some other innovation, they demonstrate the kind of experimentation that is necessary.

A relevant example is also provided by our Oregon Region which gives comprehensive health care to about 130,000 people in urban Portland. Two years ago, we began a Comprehensive Neighborhood Health Services Project in that city, funded by the Office of Economic Opportunity, whereby we undertook to provide very extensive health care services to 1,200 indigent or low-income families who elected to obtain their care from our program. We did this by integrating them into our system. They use the same hospital and the same clinics as any of our other members. They have the same kind of membership cards. They receive the same services—and wait in the same reception areas—as anyone else. The overall success of this program—now expanded to 1,500 families—indicates the importance of organizing comprehensive health care services as well as providing for payment for such services.

There are also significant forward strides being made by a few states in their Medicaid programs. Successes in these programs have been spotty, however, and point to the need for substantial improvements. We should be considering, for example: (*a*) implementation of minimum national standards for Medicaid; (*b*) achieving those national standards with full federal financing of the Medicaid program; and (*c*) finding alternatives to the fundamental concept of the Medicaid program because the program has basic deficiencies.

President Nixon's welfare proposals may provide the key to one alternative—if they include provision for funds that groups of indigents could use to purchase medical care on a prepayment basis.

Personally, I have some philosophical difficulties with income maintenance and subsidy programs, because of the disincentives attached to them. But inequities exist in our society—inequities which are morally wrong, which endanger our domestic unity, and which threaten the very strengths on which our country was built. Therefore, in my opinion, these new approaches are not only justified but imperative as our nation strives to solve its pressing domestic problems.

In seeking other possible solutions, it might be well to revive some of the earlier proposals that have been made at the federal and state levels and which

would have earmarked governmental *variable* subsidies to the indigent and medically indigent, permitting them to enroll in voluntary health insurance programs. These proposals go back as far as the Taft Bill and the Flanders-Ives Bill of the early 1950's.

Because voluntary health insurance does have the virtue of granting free choice to the consumer, while encouraging competition among the providers of service, we believe all types of such coverage should be extended and improved wherever possible. But when voluntary health insurance simply cannot meet the needs of segments of the population, we believe that government participation is not only appropriate but, of necessity, becomes the only resort. Such participation can—with ingenuity and imagination—be organized to support the aspects of consumer choice and competition which represent the advantages of the voluntary system.

### Current Challenges

This broad, pluralistic approach to major health care issues does not provide adequate answers to several basic questions. We believe the future of our pluralistic system may well depend on how well it meets these difficult challenges.

For example, all of us know the statistic cited previously—that nearly nine out of every ten Americans under the age of sixty-five are covered by voluntary health insurance—obscures a key difficulty; namely, many millions of Americans are covered by substantially inadequate levels of benefits.

Millions of American families with employed persons have only marginal incomes which are constantly threatened by the possibility of serious illness. It is our challenge to find ways to make comprehensive health care coverage available to these families.

We also have seen demonstrated the direct association between the major new governmental programs, such as Medicare and Medicaid, and the rapidly escalating costs of medical care. This demonstrated link should make us pause before we accept any simplistic notion that, should government take over the health care industry, the escalation of medical care costs will somehow be moderated or controlled. Yet, the challenge of containing medical care inflation, as with inflation in all aspects of our economy, clearly must be met.

Just enumerating our nation's health care needs is a sobering task, but we believe that the pinpointing of problems is a necessary and positive step toward their solution. It is through the good will and efforts of groups such as your own, interested not only in the health care industry but in the welfare of the American people, that we will make the improvements necessary to meet the health care needs of our population.

One of the most interesting efforts in seeking solutions to these problems in the health care industry is being pursued by Walter Reuther. His Committee for National Health Insurance will undoubtedly stimulate new thinking which is vitally needed.

There is a gap between the demand for better health care and the capability of the present American health care industry to meet that demand. The pressure to close this gap should not be viewed as a threat to this industry, but as a tremendously stimulating challenge to medical education, to physicians, to concerned citizens like Walter Reuther who represent large numbers of consumers, to hospital administrators, to businessmen, and to the consumers themselves. Government, at all levels, can help us to close the gap by eliminating the numerous artificial restrictions and restraints that bar more effective health care organization and by encouraging those programs prepared to assume responsibility for better organization of health care resources in order to meet the needs of the American people.

I have been privileged to speak with you today. I do not say that our plan is the only way, but it is a good way. Its incentives are right. The thing that concerns me also concerns my friend, Walter Reuther—namely, that more plans like ours should be in operation across the country.

I believe that by working together in a constructive coalescence we can—and will—meet the challenges within our free and pluralistic system.

# A New Climate*

ALAN PIFER

*President,*
*Carnegie Corporation of New York,*
*New York, New York 10022*

One of the more striking changes taking place in American medicine these days is the increasing disposition of laymen to sound off about it in public. Whether this is also one of the more important changes, you will have the opportunity to judge by the conclusion of this morning's program. Certainly no one could say that the AAMC, in planning this year's annual meeting, tried to shield itself from exposure to this kind of change!

I suspect that the laymen, however ignorant he may be of strictly medical matters, does have an important role to play in medicine, just as he does in regard to many other specialized, professional activities in our national life. This role, as I see it, is to assess and comment on such activities, not from the viewpoint of the people engaged in them—not at all—but as the larger society, the general public, if you will, sees them. This is the task I have set myself this morning.

It is, of course, only stating the obvious to say that the viewpoints of the professional man and the public will seldom—perhaps never—be exactly the same. The professional person is engaged in the practice of his profession, be it law, medicine, architecture or any other. He practices it according to the traditions, canons, and ethics of that profession. He does not for a moment doubt that those traditions, canons, and ethics are as much in society's interest as in his. And at bottom he believes that only he and his professional colleagues can have a valid judgment on that question. Society at large he considers not competent to make such a judgment.

Until recent years the larger society stood very much in awe of the professions, and particularly of the medical profession. If society's concern, which was, of course, not with the practice of the professions as professions but with the services provided, was not adequately met, there was a reluctance to complain—a diffidence to challenge the intellectual and moral heights occupied by professional men.

People might complain bitterly in the bosom of their families about the indifferent service, outrageous charges, or arrogant attitudes of some professional men, but they did not attack them publicly. At bottom they were afraid to, afraid because of the secure position of the professions in the general scheme of authority and because of the immense power, even over life and death in the case of the physician, which his skilled knowledge gave the professional man.

All that has changed in recent years. No longer does the special mystique of the professions render them unassailable. No longer is their authority entirely secure. The day when the voice of the consumer will be heard is here. And it constitutes a kind of revolution in our society.

The reasons for this change are complex and not clear. In part it may simply be the result of a better educated populace. Far more people are completing high school and going to college. The better educated people are, the less dependent they are on the voice of authority and the less impressed by it. It is also possible—some people believe so—that television has played a part in the undermining of professional authority. Many Americans are more familiar now, or think they are, with the respective auras of the professions, and hence less awed by them, than they once were, simply as the result of watching endless hours of T.V. programs on these subjects.

Another, and perhaps more cogent, explanation may be that a huge volume of rising demand for professional services, stimulated by affluence, by better education, and by the media generally, has caught the professions inadequately prepared to deliver the goods either in quantity or quality, and this has caused widespread disenchantment with them. This is particularly true in medicine.

Lastly, to many Americans—the young, the poor, the discriminated against and all those for whom social justice is a burning, central question of our times—it seems apparent that the nation's economic and social system is so organized that the preponderant weight of the professions inevitably becomes en-

* From the *Journal of Medical Education* 45:79, 1970. Reprinted with permission. Delivered at the Plenary Session on "Dimensions of the Problem" at the 80th Annual Meeting of the Association of American Medical Colleges, Cincinnati, Ohio, October 31, 1969.

gaged on the side of, and in support of, privilege and affluence rather than in behalf of the unprivileged and poor. To these Americans the claims of the professions to moral authority are consequently simply devoid of meaning.

I can think of no issue that is more on the minds of many of our ablest young medical students and law students than this one. This is what they mean by relevance in their studies. This is why they set up activist organizations like the Student Health Organization. This is why they go to work for the Mississippi office of Legal Defense Fund of the NAACP, or spend their summers in Washington as Nader's Raiders. This is why law students are sending a stiff questionnaire about the legal profession's ethics and commitment to social issues to the 600 law firms that will recruit at Harvard, Stanford, Michigan, and other leading law schools this year.

This final aspect of the present challenge to professional authority, with all its enormous implications, is, I believe, just one active front in a more extensive revolution against established interests and the status quo generally by the poor, by minority groups, by some of the clergy, and by a large proportion of our young people, irrespective of race, creed, or economic background.

Like most revolutions, this one is a disorganized, untidy affair, containing its share of intolerance, irrationality, cruelty, strong arm tactics, romantic naïvete and self-aggrandizement. Naturally, it is distasteful and disturbing to all of us who happen to be older and happen to be in positions of authority, whether we are public officials, college presidents, industrialists, trade union leaders, deans of medical schools, or foundation officials.

But I believe that, even if we sometimes find its rhetoric offensive and its tactics reprehensible, we must accord this revolution our recognition and not respond to it with a too hasty negative reaction. Most of all, we must listen to what the revolutionaries are saying, and we must communicate with them. I believe this because I am convinced that giving this upheaval ultimate shape and direction is a deep and genuine humanitarian spirit which one day, properly focused, will make ours a more democratic, a more just, a more peaceful, and a saner society.

This recognition, this capacity to listen and communicate, is extraordinarily difficult and painful for most of us—not because we are reactionaries, warmongers, racists, fascists, or any other assorted form of beast some of the revolutionaries may choose to call us. Indeed, most of us have long prided ourselves on being liberal-minded, democratic, tolerant citizens and are convinced we have spent our lives working for a more just society. No, recognition of the revolution is painful to us precisely for that reason. We feel our motives are pure, and we believe we have been doing our best. Ergo, the charges against us are unfair, and we resent them.

But isn't this reaction, human and understandable as it is, really irrelevant—just as comparisons of our nation with more benighted nations or of our times with less enlightened times are basically irrelevant? Surely the only relevant question for a rich and powerful nation like this one is whether the great wrongs, which are being so strenuously protested, do or do not actually exist here in the United States at this very moment. Is there hunger and malnutrition? Does the law protect all citizens, rich or poor, equally? Is there racial discrimination? Do all children have equal access to a good education? Do all the people have adequate medical care?

These questions answer themselves. Yes, the wrongs do exist, here and now, and we know—and the revolutionaries know we know—that they could be corrected if only we and the rest of the nation's leadership had the necessary vision and determination.

I have talked about these two major upheavals in our society—first, the breakdown of professional authority with its concomitant new demand by the consumer of professional services that his voice be heard; and, second, the essentially valid quest for social justice by the young, the poor and the discriminated against—because, different as they are, and yet related as they are, these two forces together are of fundamental importance to the future of medical care in this country.

A third major change of which all of you here are equally aware is the enormous shift that has taken place in the past few years in the attitude of the American people toward access to medical care. What until recently was regarded as a commodity to be purchased by those who could afford it and dispensed as an act of charity to those who could not is now widely regarded as a basic right. More and more Americans are thinking about medical care as they think about public education, public highways, police protection, sanitation, or anything else they take for granted as being guaranteed to them by the divine right of American citizenship. The enormously increased expectations for medical care this new attitude has produced, and the frustration and anger which result when the expectations cannot be met, have produced a smouldering volcano in our national life.

This striking change in the public attitude toward medical care is something of a mystery. As with the new challenge to professional authority, improved standards of education, increased affluence, and television may have something to do with it. But there is something else, a factor which can perhaps be identified as a general rise in individual self-respect that has been taking place among many millions of Americans in recent years. Not so long ago these individuals

—the poorer, the less-educated, the humbler people amongst our population—would have accepted poor health as one of the inevitable burdens of this brief stay on earth, about which nothing could be done. But that kind of passivity is rapidly disappearing. "If another person can get good medical care, then why shouldn't I and my family?" would now be the standard reaction of nearly all Americans. And why not indeed?

A fourth, and, I believe, equally powerful revolution that will have a fundamental bearing on the future of medical care in this country is not yet upon us. This is the totally new public attitude that is likely to emerge from an increasing realization, as the nation tries to face up to the implications of medical care coming to be regarded as a right, that the main issue is not the availability of medical care per se but the national maintenance of individual health. This is a concept, as one thinks about it, that staggers the imagination in its complexity. But I am convinced that the nation cannot avoid coming to grips with it, if only because of the tremendous cost involved in providing good health care to the entire population.

The questions raised by the concept "maintenance of health" are endless. What is health—both physical and mental? Are physical and mental health constants, or do they vary from age to age, decade to decade, or even year to year? Can good health be delineated as a separate, identifiable entity, or is it inevitably simply a shadowy, indefinable function of other aspects of society? If so, what aspects, and how must they be manipulated to affect health? And so on.

Despite all the inherent difficulties caused by its intangible aspects, the concept of health maintenance does have many specific, identifiable facets. We take for granted now such measures as public provision for immunization against certain diseases or compulsory safety standards in places of work. Others, such as annual physical exams at public expense for every man, woman and child, would be extremely expensive and might not provide adequate returns for the cost involved, but this is the type of measure that most people would understand the importance of. Any one of us could, presumably, set down his or her own list of specific steps that might be taken to begin to implement the concept of national health maintenance. And before long, I am sure, it will be a favorite sport in Washington, as the costs of national health care are weighed against the costs of national health maintenance.

These four revolutions—emergence of the consumer voice, the quest for social justice, the new attitude toward medical care as a right, and the concept of health maintenance on a national scale—I am convinced, together, form, or shortly will form, the matrix which will mold a radically new health care system for this nation. And it is my guess that within the next decade we will have made a major start on bringing this into being.

What, then, are likely to be the principal assumptions underlying such a system when it does come? In broad terms, I would think the following: First, every citizen, whatever his economic status, place of residence, age, color, or other consideration, will have guaranteed access to adequate medical care. Second, assuring such access will be a public responsibility, concurrently, of all levels of government, but ultimately of the federal level. Third, since the system, at least in its initial phases, will cost a great deal of money, substantial appropriations will have to be provided for it annually by the federal government. Fourth, because of the increased portion of GNP and of governmental revenues that will have to be devoted to health care to make the nation-wide provision of it a reality, the system will have to assume, and perhaps, through a strong health education program, foster the idea, that every individual has a responsibility to maintain his own health. And, fifth, to this end, the system itself will be heavily oriented toward the prevention of disease.

Beyond this listing of assumptions, I would not be prepared to make any predictions. One obvious question, of course, is whether a national system of health care for this country will ultimately have to be totally public in character. I will admit my bias at once by saying I hope not, and I think that bias is shared by most of you and by most Americans. There are some kinds of incentives which private endeavor, profit-making or nonprofit, can provide for quality, initiative and inventiveness that can be enormously valuable in almost any sphere of our national life.

In all candor, however, we must admit that the mixed public/private, but predominantly private, nonsystem the nation now has has been a miserable failure in delivering adequate, comprehensive health care to many millions of its people. And as the impact of the several revolutions I have described becomes more pronounced, the failures will become steadily more obvious to all and more intolerable to the nation.

Whether in the face of this failure it will be possible to find a rational place for the private sector within the system, I don't know. It will certainly require the development of some imaginative new relationships between the public and private sectors, relationships which represent a careful reconciling of the need for independence, intrinsic to the private sector, and need for public accountability, intrinsic to the public sector.

An equally important question for the future will have to do with the role of presently existing public facilities within a national system of health care; for example, the municipally supported hospitals in our great cities or the state mental hospitals. Again, I am

prepared to make no predictions on this score. I mention the question only to suggest that the problem of making intelligent, efficient and accountable use of facilities we already have will by no means be confined to the private sector. Indeed, we may well find that the most intransigent problems lie with the public institutions.

In summary, the central question will be whether the United States can build on its present foundations to develop a system of health care capable of serving the entire population. Can the means be found to bring public and private interests as we know them today together into a single focus? And can the federal government effectively serve as a catalytic agent for this purpose? More specifically, can the federal government set standards of performance, encourage experimentation in the delivery of health care, coordinate existing resources, save private facilities from financial collapse, design and fund a system of national insurance, meet the costs of training greatly increased numbers of physicians and other health workers, and take many other essential actions? I see no reason why it cannot do all of these things, if it is spurred on by a national will that they be done and if the nation's top leadership responds to that will.

Convinced as I am that powerful forces in our society which are not to be denied will bring a national system of health care into being within a few years, I nevertheless continue to be troubled by a fundamental question. Can any great social leap forward take place and be sustained in one sector of a society without corresponding advances in others? I have puzzled over this frequently in regard to the problems of urban education. Can we ever have good education in our inner cities without better housing, better job opportunities, better health facilities? And similarly, can we ever have good health without improved education, improved housing, and improved economic opportunity? Can advances take place piecemeal, or must there be a general advance across a broad front?

There are, I suppose, two answers to this question, one specific, one general. Advances in science and medicine usually seem to have taken place in narrow salients followed by a kind of mopping up operation of the territory between, so that eventually progress has been achieved across a broad front. But, if one looks at the principal indices of the human condition for substantial population groups, it generally seems to have been the case that improvement in one sector cannot be maintained for long without corresponding advances in others. It would seem, therefore, that wherever possible we should be making specific improvements in the delivery of health care to those most in need of it, not only because of the intrinsic importance of this but because we need to know more than we do about delivery problems. However, we cannot expect, at least in the slums, any substantial general improvement in the health standards of large numbers of people until a sufficient effort is made in other sectors, such as education, housing, and economic opportunity, to assure real advances in those areas also. This conclusion suggests, therefore, that health planning cannot be carried out in isolation from other kinds of social planning and that the health planner must be broadly trained to understand and to cooperate with other kinds of planners.

What also troubles me, as I think about the relative power of the forces for change in the delivery of health care, is that they may well be successful in bringing improved facilities and service to the vast middle and lower middle classes of the nation—and that, of course, is a very good thing in itself—but far less successful in helping the disadvantaged. We may get a national system which is fully intended to equalize the delivery of good health care to all, but in fact doesn't work out that way for the rural and inner city poor, just as it does not work out that way in education. One could reach that pessimistic conclusion on the basis of the apparent slackening off at the present time of the national effort in behalf of social justice.

Nevertheless, we are talking about the next decade, and over that period of time I would put my faith in the capacity of the poor and minority groups to generate ever more powerful political leverage, not just in city halls but in state legislatures and the Congress as well and in a swing of the pendulum of middle class opinion back toward the kind of awakened conscience it showed in the first half of the present decade. In the latter respect, I count heavily on the leadership of the young.

One might well wish that the kind of national system I have talked about was already a reality in the United States. As one looks about at the failures of the present nonsystem—the needless misery, suffering, and loss of life it causes amidst the truly fantastic display of opulence and waste in this the richest of all societies —he is smitten by a terrible sense of guilt. How can we as a people be so callous? How can we tolerate it?

One might well wish too that he could detect within the medical profession at large a general sense of outrage over our present medical care arrangements and a determination to seize the leadership in bringing an equitable national system of comprehensive care into being. Is there such a sense of outrage? Is there a determination to seize the initiative and go at it? Here and there among individuals there is, but if we wait for the medical profession at large to take the lead, the volcano I mentioned earlier will have erupted long since. The best we can expect from the profession generally, I am afraid, is simply that it

will not offer the kind of bitter, rear guard opposition to a national system of health care it did to some of the fragmented efforts of the past, such as, most recently, Medicare.

There is an immense amount that those of you who direct the affairs of the 350 great medical centers of the nation can do, things you can see will obviously be needed whatever shape and nature the national system ultimately takes, things which take advantage of the enormous talent which your centers possess. Among these—and remember I give you only the layman's judgment—I would list the following:

First, you can design and try out experimental new delivery programs that will provide good care to defined population groups, including both advantaged and disadvantaged families—programs such as those which the Duke Medical Center has recently started, Johns Hopkins is about to start, and others are considering. An essential element in these programs, I believe, will be consumer participation in their design and management.

Second, in the academic medical centers you can start new educational programs for physicians, programs, for example, which utilize the wider resources of the university to produce doctors as broadly trained in the social sciences as in biomedical fields. Doctors with this kind of background are now essential—to take the lead in organizing and bringing medical care to the disadvantaged, to study the social context of disease, and to tackle the enormous problems of health maintenance on a national scale. You can also work to reduce the length of the physician's training without reducing quality, and you can experiment with ways of providing rewards to clinicians specially interested in the delivery of care as high as those earned by other clinical specialists. Stanford, Case-Western Reserve, Duke, Hopkins, and McGill have jointly made a commitment in this direction, and other institutions might follow their lead.

Third, you can institute programs to produce on an experimental basis new kinds of professional health workers, such as the new pediatric nurse and pediatric associate being trained at the University of Colorado. You can also play a role in helping high schools, community colleges and other non-medical institutions design programs for the training of new types of technical and semitechnical personnel to support and assist the physician. And in the teaching hospitals you can take the lead in demonstrating the possibilities for providing challenging job opportunities to workers who have not had such mobility to date.

Fourth, you can mount new programs that will help to answer the multiplicity of old and new questions that will arise as the nation girds for a national system of comprehensive health care—study of delivery systems, of costs, of the factors affecting health, of the design and running of health facilities, of consumer needs, of new technologies that can improve efficiency, of the very meaning of health and the relationship of it to other social indices, and so on. The list is endless.

Finally, you can—you must—get together, and continue to work together, not to plead but to demand that the financial resources be made available to you by the federal government to make possible the kinds of research and experimentation I have just described, and to finance the training of greatly increased numbers of physicians and other types of health workers, especially of minority group background.

The last of these five tasks will, of course, come inopportunely as you are still engaged in a desperate battle to keep the extensive biomedical research programs you have launched in recent years with federal money from going to the wall. Most of these programs are important to the nation, and it is essential that they be continued. Essential also is rapid improvement in the delivery of health care, based on presently available medical knowledge. Indeed, to millions of Americans currently without medical attention altogether or inadequately served, this is their highest priority. For you, obviously the choice cannot be one versus the other, as both are clearly essential. I only plead with you that in your anxiety to maintain the funding of your biomedical research programs you do not fail to devote at least an equal effort to securing the financial support for much needed research and experimentation related to improving the delivery of medical care.

As promised at the outset, I have deliberately tried to see the issues I have been discussing not through your eyes, but as I believe the nation at large sees them. Your problems are, however, sufficiently familiar to me for me to know that every one of you in this room is overworked, hard-pressed, indeed afflicted by a feeling approaching desperation, as you go about the jobs you are now doing. In all honesty I really don't know how you who are responsible for our medical institutions are going to make the enormous additional effort you will have to make to give leadership to the formulation of a national health care and maintenance system. But make it you must, because we dare not repeat the mistakes of the past and let the leadership of a movement whose time has come fall solely into political hands.

For you in the medical centers, therefore, the day is past when you can set your faces against change—if you wanted to, and I doubt that many of you do. On the other hand, it is not enough for you simply to say *Amen* to the chorus of discontent. It is not enough to react to the unrest merely by praising those with the courage to be restless.

The medical centers, the existing institutions of society, with all their great experience and compe-

tence, have a far more demanding responsibility—that of a detailed, honest appraisal of what realistically can be achieved, of what in the present system should be thrown out and what saved.

This means that we need clarity in the deliberations that are opening here today about what is a feasible and appropriate role for the medical centers, and specifically the medical schools, at this time of ferment, and about how these institutions can hitch the energy of social discontent to wagons of purposeful change.

The doctor—will not his central mission always be to maintain health and prevent disease, to diagnose illness and treat it where treatable, to reduce morbidity and preventable mortality, and to ease pain? Is not the question now how to do all these things for the entire population as well as for the individual?

It is important, therefore, to be clear that medical students are not being trained to be economists, anthropologists, or sociologists, but to understand the insights the social sciences can bring to bear on the phenomenon of social change. As future practitioners, students must be prepared for the milieu in which they will practice. They must be capable during a time of change of maximizing their impact within the constraint of an imperfect milieu, and they must be trained for a role in transforming that milieu.

How to design the brave new world; what changes should be made, in what way and in what order; how to run the railroad meanwhile; and what the leadership of the medical centers can do specifically to affect change—these questions, it seems to me, should form the agenda of this meeting.

You have a great deal of urgent discussion ahead of you at this meeting—possibly the most important meeting your association has ever held—for on your shoulders rests a grave responsibility no others in this nation can properly discharge.

# An Incomplete Diagnosis*

*Wall Street Journal,*
*New York, New York 10004*

The Administration and Congress are understandably disturbed by the soaring costs of Medicare and Medicaid, the programs that provide health care for the aged and for others adjudged unable to pay medical and hospital bills. Costs of the programs have doubled since they went into effect four years ago.

At a Senate Finance Committee hearing, John G. Veneman, Under Secretary of Health, Education and Welfare, said "one of the problems we have had is the problem of greed," referring presumably to doctors and hospitals. There probably is something to that diagnosis, but as Mr. Veneman surely recognizes it is at best incomplete.

The key problem, the one responsible for most of the others, is that the Government vastly increased the demands on the health industry without anyone having the slightest assurance that the industry could handle the job. Since then, as the HEW official says, "we've learned rather dramatically that the ability to finance care doesn't guarantee the availability, adequacy or reasonableness of care."

In the hospitals the sudden surge of demand has led to shortages of staff, with resulting increased upward pressure on wages. Hospital workers often were poorly paid, but few hospitals were able to absorb the soaring payroll costs; all they could do was to try to pass them along in higher charges.

Some doctors probably have overcharged patients. Certainly those who formerly treated the indigent for little or nothing can now see no reason to do so. Doctors, hospitals and other segments of the industry, moreover, have by no means been exempt from the pressures of Governmentally engineered price inflation.

For years the supporters of Medicare and Medicaid argued that they were not steps toward nationalized medicine, but in practice they may be about to move the country another step along the way. Although Mr. Veneman talks of negotiating fee schedules with doctors and hospitals, he says that if negotiation doesn't work Federal ceilings will be imposed.

The situation, in short, is a sorry mess. And the sorriest part is that the health industry is in effect being blamed for the Government's own improvidence.

---

* Editorial, from the *Wall Street Journal,* March 10, 1970. Reprinted with permission.

# Multiphasic Health Screening

ROBERT W. JESSEE

*Department of Preventive Medicine,*
*Medical College of Virginia,*
*Richmond 23219*

## Introduction

Although scientifically unproven, general empirical agreement supports the notion that the early detection of disease is beneficial in the control of the disease process. The aim is to discover and cure conditions which have already produced cellular or biochemical change but which have not so far reached a stage associated with symptoms for which medical aid is sought spontaneously (Wilson and Jungner, 1968). The various methods of early disease detection have evolved along with contemporary philosophical and technological developments.

One method, emphasized by the American Medical Association for the past 50 years, is the Periodical Health Examination (PHE). Many private practitioners and government and industrial physicians accept and utilize this method, but its widespread application in our growing population is severely restricted because of the shortage of professional medical manpower and the time required for each PHE. These facts, coupled with the patient's demand and the physician's inclination to give priority to the care of the sick, further reduce the chances of early disease detection through the traditional PHE approach.

Another method of early disease detection is the presumptive identification of unrecognized disease or defect through screening tests. Such tests are intended to sort out apparently well persons who probably have a disease from those who probably do not (Commission on Chronic Illness, 1957). Characteristically the tests, examinations or other procedures are applied rapidly by technical personnel with indicated follow-up diagnostic and treatment services performed by a physician.

## History

In the 1930's, and to a greater degree during the decade following World War II, official health agencies became advocates of screening programs for case finding and epidemiological purposes. This "first generation" of screening activity was disease specific (aimed at detecting a single disease by a single screening test) and is exemplified by serological testing of large population groups for syphilis and mass x-ray surveys for tuberculosis.

The subsequent development of new testing equipment such as the 70-mm photoflourogram, the vacuum tube for blood drawing, and the Hewson Clinitron to determine blood glucose levels made it feasible to test for multiple diseases. This ability to combine several test procedures into a multi-test battery created a "second generation" of screening activity which became known as Multiphasic Health Screening (MHS). In the late 1940's and early 1950's MHS became very popular. Demonstration programs were conducted in many areas with notable examples in San Jose, California; Indianapolis, Indiana; Richmond, Virginia; the entire state of Alabama; Boston, Massachusetts; and Atlanta, Georgia (Chapman, 1950). The early programs demonstrated the potential value of screening for early disease detection as well as serious administrative and technical problems. Diagnostic follow-up by physicians was difficult to obtain, paper work was staggering, the cost per salvageable case found was high, and test quality control was frequently poor. As a result government supported budgets were reduced and popularity faded.

In the late 1950's the first automated method of the chemical analysis of blood serum was placed on



MCV QUARTERLY 6(3): 126-129, 1970

the market (sequential multiple analyzer). During the following ten year period this instrument and other new automated equipment, together with the use of Electronic Data Processing (EDP), provided an opportunity to solve the problems associated with the early demonstration programs and professional interest in MHS was revived. This renewed interest, tempered by memories of earlier problems but encouraged by the need for improved health delivery services, has been applied in a more cautious and limited manner. Through a systems design approach utilizing new instrumentation, a "third generation" of screening activity is now developing. This latest generation, known as Automated Multiphasic Health Testing (AMHT), combines automated equipment and computer technology with clinical tests and procedures to measure comprehensively a subject's physiological status (Medical and Pharmaceutical Information Bureau, 1970). AMHT is not primarily designed for the screening or diagnosis of disease, but is intended to accumulate as much data as possible about the total health profile of the patient and to aid the physician in the health management of his patient.

As a result of this evolution in the state-of-the-art, current health screening services vary from simple multiple screening to sophisticated, comprehensive, automated, computerized programs.

### Current Status

Probably the most sophisticated and certainly the most experienced AMHT facility is located at the Permanente Foundation Multiphasic Health Screening Clinic in California (Collen, 1964). The Permanente Clinic is associated with the Kaiser Foundation health plan, a prepaid comprehensive medical care and health program which provides hospital and medical services to members on the West Coast and in Hawaii. AMHT laboratories are operating in the Kaiser-Permanente Medical Centers in Oakland and San Francisco, where approximately 60,000 patients are screened annually.*

Several group practices, medical centers and hospitals are also either now operating, developing or planning automated or semi-automated multiphasic screening services (examples—Straub Clinic, Honolulu; Palto Alto Medical Clinic, Palto Alto; and, George Washington University Medical Center, Washington).

The U. S. Public Health Service has contracted for the operation of four demonstration programs utilizing automated or semi-automated equipment to make health assessments of adult populations in different administrative and community settings. As a result of these contracts MHS programs are now being operated by Tulane University School of Medicine, Milwaukee City Health Department, Brookdale Hospital Center (Brooklyn, N. Y.), and Rhode Island Hospital (Providence, R. I.).

The Division of Regional Medical Programs is also funding a series of pilot projects in which various configurations of MHS test batteries and associated programs are being examined (examples—Meharry Medical College, Nashville and the University of Rochester, Rochester).

General medical examination visits recorded by the National Disease and Therapeutic Index presently stand at 33.5 million annually (roughly 10 visits/50,000 population). This represents a 75 percent increase since 1962. Private business interests which have attempted to analyze the "market" predict that a minimum of 60 million multiphasic health screening examinations (replacing and/or supplementing PHE) will be performed annually by 1980.

For the past two years the sales growth of companies producing automated screening instrumentation hardware has been paralleled by the rate of organization of new companies proposing to market multiphasic screening system packages or services of various designs. A current count will reveal more than 20 recently organized commercial ventures which are involved in MHS activities. Industrial medical programs, hospitals, group practices, insurance companies, labor unions and private venture organizations are either being approached or are seeking to enter the field. Standard and Poor's is quoted in a recent Postgraduate Medicine investment commentary which states that medical electronic sales should approach the billion dollar mark in the coming decade with 350 million dollars paid for such equipment in the U. S. in 1969. A substantial portion of this market is related to test instruments and systems packages.

The Council on Medical Service of the American Medical Association developed recommendations on MHS which were adopted by the AMA House of Delegates at the 1968 annual convention. The recommendations call for further study of MHS to determine its role in the area of health maintenance and preventive medicine. The local medical profession is encouraged to seek active involvement in the planning and operation of MHS programs.

An Intersociety Committee on Multiphasic Health Screening has been formed by representatives of the American Academy of General Practice, the American Association of Ophthalmology, the American College of Radiology, the American Society of Internal Medicine and the College of American Pathologists. The committee membership also includes representatives from four other specialities involved in the various modalities tested in present MHS programs

* See also One Industry's Involvement in Health Care by Edgar F. Kaiser, pp 114–118.

—the American Academy of Pediatrics; the American College of Obstetricians and Gynecologists; the American Laryngological, Rhinological, and Otological Society; and the American Medical Association. This committee is concerned with testing techniques and their application through pilot projects under a variety of sponsors in different settings.

On January 15, 1969, Senator Harrison A. Williams, Jr., Chairman of the Senate Special Committee on Aging, reintroduced ". . . a bill to establish health screening programs in a limited number of regional and community centers equipped with the latest in instrumentation and communication systems. The service would be free and voluntary for persons of age 50 or over, and it could become the cornerstone for a genuine national effort to prevent or reduce chronic disease by detecting it in its early stages." (US Congress, 1969).

The selected examples listed above do not cover the entire field but they are representative of a rapidly expanding new health service and a new interest in early disease detection and preventive medicine.

### Typical MHS Program

Although the screening test procedures and utilization of electronic data processing varies in the different screening facilities currently in operation, the basic batteries of screening tests are similar. A typical multiphasic health screening test battery consists of: medical history, anthropometry, visual acuity, spirometry, tonometry, audiometry, chest x-ray, electrocardiography, blood pressure, cytology (for cervical cancer), basic blood serum chemistry (glucose, cholesterol, etc.), simple hematologic tests (blood cell count, hematocrit, hemoglobin), and urinalysis.

In the more sophisticated MHS centers mammography, thermography, retinography, sigmoidoscopy, Pan-O-Rex (dental x-ray) or other tests are sometimes included.

The MHS centers currently operating depend primarily on non-professional technical personnel to perform the various tests. Automated and semiautomated instrumentation is generally in use. The degree to which "on-line" computer operations have been effected varies considerably but apparently the majority of currently operating facilities use the "batch" method of electronic data processing which is provided by a dedicated computer or through time-sharing service arrangements. The computer "write-out" is a simple one page summary in some instances while in others it may be a multiple page narrative. Usually the "write-out" report is forwarded to a physician named by the patient.

Most facilities are designed to process a large volume of patients since the cost per test unit is extremely sensitive to volume. The patient sources and referral mechanisms vary widely. Patients may be limited to eligible members of a labor union, a prepayment group, employees of a specific industry, physician referrals, self-referrals or mixtures of these.

### Pro and Con

MHS proponents claim that obtaining health data through the use of automated equipment operated by auxiliary and technical personnel can reduce the amount of time spent by the physician to approximately one-third of that spent in performing a PHE in the traditional manner and that the physician is provided with much more information on the patient. On the other hand, some physicians express the fear that the presumptive identification of disease through MHS with the consequent necessity for review of extensive health data and follow-up diagnostic study will in the long run require more of the time of already overburdened physicians.

Those who have had direct experience in the operation of MHS programs believe that the use of automated equipment reduces human error and provides better quality control. Other physicians who have been involved in the follow-up activities resulting from MHS point out specific instances of false negative, false positive or border line test results and emphasize the patient management problems associated with such occurrences.

Individuals who have utilized MHS services and those who promote its use proclaim that since there is no waiting and all tests and examinations are specifically organized and performed "under one roof," the system is more convenient for the patient than the existing process of obtaining similar services through physicians' offices, clinics and hospitals. Those who feel that screenees would find automated "assembly line" examinations unpalatable raise the specter of depersonalization and restriction of the sacred patient-physician relationship.

The charge to the patient served through current MHS facilities is approximately one-fourth to one-third that which he would have to pay for similar services obtained in the traditional manner. There has been no overt opposition to this fact *per se*. Instead, financially interested individuals and groups have responded either by attempting to block MHS proposals with other objections related in degree and nature to their vested interests, or by actively supporting applications of MHS through personal investments of time or dollars. In both instances the real or fancied financial threat of MHS to certain physicians, and the opportunity to others for financial gain through investments, is mute or camouflaged.

Both the proponents and opponents agree basically that final scientific research has not yet been performed to establish proof that MHS actually leads

to improved health or a saving of lives. The former group believes that this information can only be obtained through expanded and continuing experience with MHS while the latter uses the lack of proof as an argument against further expansion and experience. A comparable basic agreement and divergence of attitudes prevails in regard to the cost-yield factor of MHS, but generalization in this area is not logical since the cost-yield ratio must be related to a specific objective.

## Summary

Early disease detection methods, primarily the Periodical Health Examination and Multiphasic Health Screening, have evolved along with the contemporary philosophical and technological developments of this century. The current availability of automated testing equipment combined with electronic data processing has created a new potential for the economical application of multiple health testing procedures to large numbers of persons. Interest in exercising this potential is expressed by group practice organizations, prepayment health care programs, the Federal government, organized medicine and various commercial enterprises.

The typical Multiphasic Health Screening program supplements the physician's armamentaria by combining a battery of accepted health testing procedures, performed by technical personnel utilizing automated equipment and electronic data processing, to accumulate data reflecting the physiological status of the patient.

When the details of screening programs are discussed by members of the health profession, there is an equivocal tendency which is usually replaced by a consensus that the use of automation, computers and technical personnel will be involved in the future delivery of health care services. It is also generally agreed that the problem to be resolved is not whether the technical and operational capabilities of such services are feasible; but rather, how to integrate the application of the new technology into the existing health care complex to the benefit of the patient, the community and the health profession.

## References

**Chapman AL:** Multiple screening for a variety of diseases. Hospitals 24: 37, 1950

**Collen MF, Rubin L, Neyman J, et al:** Automated multiphasic screening and diagnosis. Amer J Public Health 54: 741, 1964

**Commission on Chronic Illness:** Chronic Illness in the United States. I Cambridge, Harvard University Press, 1957, p 45

**Medical and Pharmaceutical Information Bureau:** Automated multiphasic health testing its place in total health care. Symposium: Automated Multiphasic Health Testing in the Seventies. Rye, Weschester County Medical Society, January 14, 1970, p 2

**U. S. Congress:** Proceedings and debates of the 91st Congress, first session Senate bill 16. Congressional Record 115: 9, 1969

**Wilson JMG, Jungner G:** Principles and Practice of Screening for Disease. Geneva, World Health Organization, 1968, p 14

# Drug Abuse in Our Community*

GEORGE M. BRIGHT

*Department of Pediatrics,*
*Medical College of Virginia,*
*Richmond 23219*

What is new about people taking drugs: Nothing! Our society is a drug-oriented society. We have been both using drugs and, at times, abusing them for years. Furthermore, drug abuse has been written about for hundreds of years. What is alarming today, however, is the number of youth who are joining the drug scene from our junior high, high schools and colleges throughout the country. Fortunately, many of these will be involved only temporarily. Others will develop physical and psychological problems as a consequence of their involvement. Our responsibility is not limited to the small percentage that have short or long-term consequences, but to all youth in our community and country. Hopefully we can answer some of the pressing questions facing parents, teachers and professionals.

The questions I hear from the community are: *What are pot, acid and speed? What does glue-sniffing really do? What are our children doing to themselves and why? What can we do to get our children off this dope?* The answers are not simple! They come only through a better understanding of the total problems and implementing of means to solutions that will be beneficial to the youth and their elders as well. What we are really talking about is education and communication.

## The Drugs

There are two general classes of drugs that are abused—narcotic and non-narcotic. The narcotic drugs include heroin, morphine, codeine, opium and meperidine. The non-narcotic drugs include all the hallucinogens, the amphetamines or stimulants, and the depressants such as barbituates, alcohol and volatile solvents. Marijuana will be dealt with separately. It is the non-narcotic drugs that I wish to discuss at some length.

* Presented at the Virginia Public Health Conference in Roanoke, Virginia, April 30, 1969.

### *Depressants*

The first group is that of the depressants, including volatile solvents such as glue, lighter fluid, cleaning fluid, gasoline, kerosene, ether and a variety of other organic solvents. The volatile solvents, like all forms of drugs abused, provide a chemical escape from reality achieved by inhaling their vapors. Glue-sniffing is the most commonly used practice. Its abuse is usually found in younger adolescents in the junior high school and early high school years. The active chemical ingredient in glue is toluene. When sniffed, glue is squeezed into a plastic bag or handkerchief and held over the face or mouth and inhaled. The effects are almost immediate and are usually described as a true "shock" to the nervous system or as feelings of dizziness, euphoria and drunkenness. Some users describe loss of self-control, spotty amnesia, or simply say that they "don't care about anything." Others may have visual hallucinations of vivid colors.

Glue may be purchased in almost any store in a variety of forms. The onset of action is almost immediate and may last from 15 minutes up to a few hours, depending on the length of exposure. The chronic sniffer is very likely to expose himself for longer periods of time to get the same "high" or desired effect. Habituation or dependence on the state of intoxication also occurs, but this habituation is not necessarily specific to the chemical substances found in glue. Gasoline sniffers and lighter fluid sniffers also develop the same habituation. Chronic sniffers may have some transient symptoms suggestive of withdrawal, such as irritability, nausea, lethargy and depression. These symptoms are unusual in most users.

There has been a great deal of controversy regarding the toxic effects of such depressants to vital organs such as brain, liver and kidney. It is true that some studies have found abnormal urine findings of a transient nature. Transient abnormal findings of liver and kidney function tests, electroencephalographic



MCV QUARTERLY 6(3): 130-134, 1970

tracings and blood counts are also reported in a small percentage of "sniffers." The question of chronic brain damage is still unclear. The fatalities that have occurred are attributed to suffocation by the plastic bags after prolonged periods of intoxication.

*Stimulants*

The second group of drugs includes the stimulants or amphetamines. These drugs have been used successfully and effectively for a variety of medical problems, most notably diet control, obesity and narcolepsy. They are mood elevators in mild emotional or psychological problems. Since the amphetamines are so widely used and produced in such large numbers, it is not surprising to find them being abused as well. Amphetamines on the "drug scene" are commonly referred to as "pep pills," "Beanies," "Dexies" and "purple hearts." The amphetamine referred to as "speed" is methylamphetamine or methedrine. This particular preparation can be purchased as a tablet or in crystalline form for 25¢ to 50¢ a pill or cap. Speed has a more marded stimulating effect on the user than the usual amphetamine. It causes a "rush"—gives a sensation of excitement and sudden available energy which is pleasurable to the user. The pharmacological effect of amphetamines in general is stimulation of the central nervous system resulting in euphoria, feelings of alertness, elevation of mood and absence of fatigue.

The common medical complications caused by the intravenous injection or "mainlining" of speed are infectious hepatitis and cellulitis. The instance of infectious hepatitis in some drug communities has risen to epidemic proportion because of the communal use of non-sterile needles and syringes.

When combined with LSD (lysergic acid diethylamind), the methedrine or speed prolongs and intensifies the LSD trip or experience. It may even reactivate the trip in regular users without further LSD intake.

By increasing the dosage over a period of weeks or months the amphetamines can produce a gradually increasing tolerance without bringing about actual physical dependence. The psychological dependence that occurs in the habituated user is a very real factor that is of major concern. Users in this group are frequently "mainlining" or using higher oral doses and may develop an "amphetamine psychosis" characterized by disorganized behavior, hallucinations and paranoia. Upon withdrawal of the drug, prolonged periods of sleep, marked hunger for food, depression and panic may occur, lasting from several days to several weeks. The person with unstable personality in this depressed state may attempt suicide or become involved in other anti-social or acting-out behavior. The habituated high school or college student frequently has difficulty studying, becomes disheveled, loses weight, is more susceptible to illness, and eventually may drop out of any productive endeavor.

*Hallucinogens*

The third group of drugs consists of the hallucinogens, the psychedelics or the psychotominetics. LSD or "acid," DMT (dimethyltryptomine) and STP (2,5-dimethoxy-4-methylamphetamine) are the most powerful. Peyote, mescaline and psilocybin and such exotics as nutmeg and morning glory seeds are also included in this group.

All of these drugs act qualitatively in much the same manner as LSD; only the quantity of drug needed to produce the same effect will vary from drug to drug because of differences in chemical activity or potency.

When LSD first appeared there was much interest in its medical application, specifically for the treatment and evaluation of emotional problems. The most encouraging reports to date have come from its clinical application in the treatment of chronic alcoholism.

To give some idea of the effects of LSD, it may be said that one ounce of LSD can "turn on" a city of 300,000 people. Most of the LSD appearing on the drug scene is being manufactured illegally and dispensed in tablet or capsule form in dosages of 50 to 150 micrograms. This dose, when "dropped" or ingested, will start a "trip" or psychedelic experience. The experience will depend on the user's personality make-up, emotional state at the time of ingestion, past experience with other drugs, and the quality of the drug itself. Acid can be purchased for $5.00 to $10.00 a pill, depending on the available supplies. Increased dosages lead to prolongation of the trip rather than intensification. Tolerance develops and disappears rapidly, and there is no evidence of physical dependence.

Within 20 to 45 minutes after ingestion the psychedelic experience begins and may last from 10 to 16 hours. The user will almost invariably experience one of the following: distortion of sense perception; depersonalization; disorientation in time and space; visual illusions; pseudo-hallucinations involving shape, size, color and apparent plasticity. Thought processes are frequently disturbed, resulting in changes of mood ranging from euphoria to anxiety. Some users may react with overwhelming fear, confusion and panic; while others appear to be withdrawn into themselves in a somewhat catatonic state. These adverse reactions are more likely to occur in a person with emotional instability. These individuals are the most unfortunate, for the drugs only potentiate borderline problems and magnify existing ones. Contrary to popular belief, the proper preparation of the user and the presence of a well experienced "guide" do not guarantee a good trip.

The somatic complications of LSD include chromosomal abnormalities. Current research activity by responsible investigators continues to support earlier observations of the "breaks." I am not aware of any knowledge of the relationship of dosage, or frequency of use, to the effects on chromosones. Answers to these questions will come with time.

Flashbacks or recurrent experiences weeks to months after the last dose of LSD ingested are reported with increasing frequency. What triggers these trips and how long they continue to occur is still unclear.

DMT is prepared as a liquid. Tobacco or marijuana can be dipped into the liquid preparation, dried, and smoked in a pipe or a "reefer." The effects are milder than those of LSD, but DMT tends to give a greater proportion of visual illusions. The onset is more rapid and lasts only about 30 minutes. You can, no doubt, imagine the effect this may have when it is combined with marijuana.

STP stands for "Serenity, Tranquillity and Peace." It is related chemically to the amphetamines and mescaline and its effects are more intense and prolonged than those of LSD. It has been called by the unflattering name "mega-hallucinogen." Its effects may last up to 72 hours or five days in a dose as small as 10 micrograms. The complications are great, both psychologically and physiologically. Abdominal discomfort, blurred vision, elevations of temperature and delirium are not uncommon complications accompanying the usual psychedelic experience. Death has been reported from respiratory depression and convulsions.

Nutmeg has been known for a long time among sailors and even prisoners as a psychedelic agent. The experience is similar to LSD. The onset of effects is usually two to five hours after ingestion and may last 12 to 24 hours. Again, the side effects of malaise, headache, dry mouth, dizziness and abdominal discomfort usually discourage most people after their first or second experience.

Morning glory seeds contain two alkaloids of lysergic acid as the active ingredients. Only two varieties of the plant produce psychedelic effects. Many young adolescents who eat morning glory seeds find either no effect at all or a bum trip since the Agriculture Department is spraying them with insecticides and nauseating chemicals to discourage their ingestion.

*Marijuana*

The last, but certainly not least of the hallucinogens is marijuana (Cannabis sativa). It is known by a variety of names—"pot," "hashish," "gagga," "weed," "grass" and others. Marijuana has been written about for thousands of years but has no known use in medical practice throughout the world, including the United States. The chemical compound THC (tetrahydrocannabinol) produces the euphoria or "high." It is only one of the cannabols found in the resin, which comes from the flower of the female plant and the leaves near the flower. The chemical activity in marijuana depends on the climatic conditions where it is growing. The ideal climate is tropical or semi-tropical as is found in India and Mexico. Marijuana grown in the U.S. has very little activity. THC has been recently synthesized and is now a greater source for research with responsible investigators.

In this country marijuana is usually smoked, although it may be eaten or drunk. The cigarettes are generally referred to as "joints," "sticks," or "reefers" and are a mixture of the leaves and the flowering top of the cannabis plant. The set, or the people involved, and the setting in which the drug is smoked will influence the experience a great deal. Marijuana has its effects on the central nervous system, although the actual mode of action is still unclear. After inhaling the smoke, the user may begin to get a high within a matter of minutes, depending upon how much is smoked and the quality of the mixture. The effects may last from three to five hours. Smokers usually describe a feeling of well-being, euphoria, or an inner joy, and distortion of time, space and depth perception. In compatible groups people may enjoy singing, laughing or talking about irrelevant issues. An experienced smoker may become quite anxious, paranoid, have panic reactions, or experience depression again depending on his personality. The dangers of a prolonged reaction, called psychosis, seen with LSD are small with marijuana in this country. In India the incidence is much higher. Hallucinations both auditory and visual, have been reported although these are also unusual.

There is no physical dependence and there are no withdrawal symptoms, but there is very definitely psychological dependence in the chronic user of marijuana. This is particularly true of the person who uses it as an escape from a psychological conflict such as depression, anxiety or a sense of failure. It is the chronic user who will frequently become victimized by the pusher, who is anxious to get him on more expensive drugs such as the narcotics. The extent of physiological dependence on marijuana is not generally known, for several reasons. The quality of marijuana will vary from batch to batch. Where it was grown, how it was mixed, how it is being dispensed, and whether it is being laced with other drugs such as DMT are factors affecting studies and statistics.

The laws concerning possession of small amounts, smoking or selling marijuana are a great source of contention among adolescents and young adults. On the basis of *available* knowledge of the potential hazards, the answer is clearly that these laws should be re-evaluated in terms of their harshness and penalties. Should marijuana be legalized? This is perhaps

the most difficult question of all to answer for there is a tremendous amount of emotionalism and puritanical prejudice involved on both sides. There is no way to answer this as a flat yes or no. I do feel that laws imposing penalities out of proportion to the seriousness of the offense contribute to disregard for the law. If the younger generation continues to find inequities or inaccuracies in one small area such as the laws regarding marijuana, they will disbelieve totally and fail to heed other warnings which are well founded.

### Adolescents and the Use of Drugs

The next major question is: Why do adolescents become involved with the drug scene? It is alarming when we consider the large numbers of intelligent youth who are involved. Four years ago the use of drugs by young people was a casual topic of conversation. Today it is a major symptom of youth's turmoil. It can be related to a multitude of factors in our society such as the current social conditions, the international and national dilemmas, the ineffectiveness of many people youth look to as authority figures, and our affluence. As a result of youth's frustration and confusion they criticize all of society and what it represents, and a number turn to drugs as a false instrument to find their values. Taking drugs is in a sense a form of acting out behavior. Dr. Graham Blaine, who is chief of psychiatry at Harvard University Health Services, suggested that drug takers be divided into three very broad categories, realizing however, that not everyone is going to fit into *a* category. These categories would be the experience seeker, the oblivion seeker and the personality change seeker.

The *experience seekers* are the majority of young drug takers and comprise approximately 80 percent of the total number involved. The affluence we enjoy has provided much in the way of luxury items and free time. Free time leads to boredom, and in an attempt to overcome this boredom many seek adventure by taking drugs. Most adolescents have a need for peer affiliation and participation. The use of drugs, and the magic that it brings, proves the user is "in" and not a chicken. The experience seeker may be a student who is lonely, an outsider who is on the fringes and wants to be popular and admired. By distributing drugs he feels important, wanted or needed by the group of people he is supplying. It may also be the president of the class or the captain of a football team who derives some strange inner gratification by "turning on" others. The danger of being arrested is an adventure and many find this exciting. At the same time, breaking the law or being arrested demonstrates strength by defying authority.

Many experience seekers are taking drugs because they are angry or feel resentment toward authority. Because of real or fancied rejection by parents, they break rules by using drugs to upset their elders and get attention. This attention may not be the most desirable, but it is certainly better than no attention at all. Some of these young people are obviously asking for arrest and punishment, thereby bringing disgrace to their families. This form of acting-out is on an unconscious level.

The glue sniffer and many of the methadrine takers are in the experience-seeking group. These younger adolescents are somewhat lethargic or lacking in emotion. The "shock" or "rush" reassures them of their ability to experience emotion.

A large number of students, particularly the marijuana smokers, are trying to prove that the concern about the harmfulness of this drug is unfounded. The public smoke-ins where marijuana is openly smoked and offered to the police are ways of mocking the official attitude about law enforcement. A few experience seekers are hoping to find the meaning of life with the hallucinogenic drugs. They anticipate a vision that will provide an answer to the dull or drab existence they have had up to the present time.

The second group, *oblivion seekers,* are in some ways more serious extensions of the experience seekers. They take drugs for a year or more and perhaps have adopted the philosophy of Dr. Timothy Leary, "turn on, tune in, to drop out." By this it is meant to turn on with LSD, speed or marijuana, tune in with the world that transcends this one, and having tuned in, to drop out of this world. It is preplexing to understand why these young people from middle class and upper middle class families choose to turn on, particularly when the pressures they talk about from home, school and community do not seem to be strong enough to warrant this type of action. Often their explanations are voiced as disgust with the materialism and hypocrisy they see around them.

A closer look at some who are turning on in order to drop out frequently reveals in them outward expressions and feelings of contempt but underlying feelings of fear, inadequacy and incompetence. Perhaps it is because they are unable to meet not only their own expectations, but those of their parents and their society.

The drug scene then, through its illusions and pseudo-hallucinations, transports them out of this world into the false security of the psychedelic world. There they feel free of fear and failure which bothered them consciously or unconsciously before they joined the drug scene. In others there is a struggle for independence which they feel can only be obtained by repeated drug experience. The results in the habituated user, unfortunately, are only dulled senses that make his confused world a little more tolerable. The oblivion seekers take greater risks and are more likely to accidently become the victims of overdosages and medical complications.

The third group includes the *personality change-seekers*. Many of these young people are trying to bring about basic changes in their personalities. They are the ones who are most likely to become addicted and permanently incapacitated by repeated drug use. They feel compelled to combine drugs and increase dosages to overcome frustration and disappointment. Unfortunately, their goals are never reached, for continued participation brings rapid deterioration. They are usually identified and labeled as the freak outs or the kooks. The psychiatrically ill person, such as the psychopath, severe neurotic and schizophrenic, often joins these ranks. This group, which comprises approximately 3 to 5 percent of drug users, is probably responsible for most of the crimes and violence that occur in various drug communities around the country.

There are other young people who do not belong in these categories and should be mentioned. The "new morality" has brought changes in our youth's sexual activities. Sexual intercourse tends to be experienced at earlier ages by greater numbers. This brings pressure for performance at a time when most young people are physically or emotionally incapable of such experiences. The result may be feelings of sexual abnormality, which not infrequently result in a search for drugs to make them sexually more mature. There is no drug that is a true aphrodesiac.

Members of one additional group claim they are imitating the use of tranquilizers by their parents. These mood elevators and stabilizers are prescribed and dispensed in large numbers and are readily available in many homes. This, undoubtedly, leads a few of the young to seek similar peace of mind through drugs such as marijuana, rather than taking their parents' chemical escapes. Perhaps it goes beyond this, for in our society we live with "the myth of the magic of the drug."

## Conclusions and Recommendations

This presents a rather bleak picture; we have good reason to be concerned about the sale and use of drugs among high school, college students and young adults. There are measures that can be taken to remedy these problems, but they are not simple. As I have mentioned, drug abuse is only a symptom. These symptoms do not always stem from individual home environments but from society as well.

1. Education is of primary importance. Educational programs should include factual knowledge of the risks involved, and what we do and do not know about the long and short term effects of drugs and the medical complications. This education is directed at those who are involved and those contemplating taking drugs. It will also satisfy the curiosity of a few who may not need to try drugs once they know the true facts about them. More important than bringing education to the students, is the instruction of faculty and administrators. Young people who are indecisive will turn to respected elders for advice. If they find ignorance or get false information, they will not heed any further advice or warnings from these individuals. Any state, federal or school sponsored educational programs should include teachers, guidance counselors, principals and parents within the scope of their instruction.

2. Further research is being done by many responsible investigators concerning the physiological and psychological effects of LSD, marijuana and the newer synthetics. Our present suspicions about the long term effects of drugs can be proved or disproved only by sound and thorough investigation.

3. Looking for adventures or challenges is by nature one of adolescent's most noteworthy traits. Community centers for youth, work in local community mental hospitals, or tutoring programs in under-privileged areas can be just as exciting and challenging as joining the drug scene. This approach can have a doubly beneficial effect. Tutorial programs in the ghettos provide knowledge and understanding which help to relieve racial tension and environmental conditions contributing to drug abuse.

I would like to close by quoting Dr. Graham Blaine's book (1967), *Youth and the Hazards of Affluence*: "More than providing these essentials is the willingness on our part to try to understand and respond to the unspoken demand which comes from the young. These demands are for firmness, consistency and respect from parents and teachers. These are so often covered over by the belligerent request for unlimited freedom, by expectations that we tolerate ridiculous extremes in dress and behavior, and by surly defiance, that we have missed the message that lies beneath. We must learn to translate the language of the adolescent if we are to understand him. His true message is often the opposite of what his words and actions seem to imply. He tells us so often and so clearly to leave him alone, but at heart he may want us to pay attention. The students at Berkeley are demanding freedom at one moment and asking for more personal interest and authority in the next. There is no way to achieve a permanent harmony between the generations, but in today's society is wide room for improvement."

## Reference

**Blaine GB Jr:** Youth and the Hazards of Affluence. New York, Harper & Row, 1967, p 139

# Current Trends and Issues in Emergency Medical Care

GABRIEL HILKOVITZ

*Department of Medicine,*
*Medical College of Virginia,*
*Richmond 23219*

## General Trends

In the last 20 years, we have witnessed the growing importance of emergency rooms in community health care, particularly in large metropolitan areas. Almost imperceptibly at first, and then with incredible momentum, public demand for urgent and emergency medical services expanded with population growth and the disappearance, maldistribution or unavailability of family physicians.

The impact was felt by metropolitan teaching hospitals and by private and community hospitals in cities, towns and rural areas, particularly in the evenings and on weekends and holidays when the incidence of highway and home accidents, family quarrels and alcoholism reached unprecedented levels.

Overworked family physicians began to depend more and more upon emergency rooms to cover their off-duty hours while patients became less inclined to bother their physicians after office hours. It seemed also that more and more patients had no particular family doctor and arrived in the emergency room without being referred there. In many non-teaching and private hospitals it became necessary to employ full-time emergency room physicians in group practice arrangements which usually specified that patients were to be referred back to their own doctors for after-care and continuing medical supervision. Since family physicians could now direct their patients to emergency rooms without fear of offending or losing those patients, the presence of full-time physicians in the emergency rooms increased rather than decreased the work load. Administrators accepted or encouraged this trend to ensure income from emergency services adequate to cover the remuneration guaranteed under contracts with the emergency room physicians.

This arrangement, by and large, has worked well at the non-teaching institution and represents a distinct improvement over the earlier situation in which physicians on the hospital staff, or with hospital privileges, took turns to cover the emergency rooms. In some rural areas and even in towns of considerable size, the emergency room of the local hospital even now is supervised only by a nurse who often has difficulty finding a physician for an emergency, particularly when the patient wants his own doctor. This situation is becoming a subject of public concern as evidenced by articles in newspapers and magazines questioning the idea that medical care in the United States is uniformly of high quality.

## Problems of the Teaching Hospital

Whereas non-teaching institutions were generally able to renovate or rebuild their emergency rooms and staff them with experienced, full-time physicians, teaching hospitals usually had to accommodate the augmented work load in aging and disreputable facilities while continuing to depend for staffing upon interns and residents, for whom the experience is essential.

The revamping of emergency services in private hosptials often affected a teaching hospital, located in the same area, in two major ways. In the first place, the teaching hospital enjoyed a temporary decline in the emergency work-load; there was at least a decline in the rate at which patient visits had been increasing up to that point. In most instances the respite was brief because population growth and other factors continued unchecked. In the second place, the overcrowding and unpleasant atmosphere in the teaching hospital's emergency rooms contrasted so markedly with the dignity of the private hospital's emergency service, that the more affluent and medically insured members of the community began to avoid the teaching hospital altogether. In numerous instances the teaching hospital

experienced a disproportionate rise in the percentage of indigents in its patient population with serious implications for its financial well-being, its educational programs and job satisfaction among its employees.

When conditions in the emergency rooms preclude the entry of an appropriate variety of patients into the hospital, the repercussions are many. Students and housestaff may gain experience predominantly with patients lower in the socio-economic scale and with the patterns of disease and psychosocial maladaptation in that group. Opportunities to diagnose and treat early disease, to enter into intelligent therapeutic planning with receptive and educated patients, to practice preventive medicine and to participate in elective surgical procedures decrease as the emergency rooms deal overwhelmingly with indigent patients, with advanced disease among the elderly, with the recurrent problems among the chronically ill, with alcoholism and all its attendant problems, and with the injured. A dearth of paying patients wreaks havoc with an institution's financial picture and precipitates many administrative headaches, not least among which is the lack of money for emergency room reconstruction.

In some centers the pressure from emergency admissions is so great that the availability of hospital beds for elective procedures has been reduced to an intolerable level; orthopedic services and training programs may be cited as examples, for it is not uncommon to find this department almost wholly preoccupied with trauma surgery.

Morale among the nurses and job satisfaction for other employees may suffer when a hospital's inpatient population is largely indigent, elderly, and chronically ill. Patient turnover rates may also decline when disposition and discharge arrangements are blocked by social and economic difficulties, and the hospital takes on many of the characteristics of a nursing home.

## The Teaching Hospital's Role in Community Health Care

As a result of these problems, teaching hospitals have begun to examine their role in community health services. Arguments in favor of even greater involvement with the health needs of the community are supported by the thesis that teaching hospitals, insofar as they may be supported by tax revenues, represent public investments in health care facilities and have an obligation to yield to the pressures. Counterarguments view the teaching hospital as a source of future physicians and advances in medical science from which the public benefits ultimately, and stress that unlimited patient care is not the primary objective of an educational institution.

It is becoming increasingly clear that a teaching hospital cannot provide unlimited patient care, or assume responsibility for the entire indigent population, without going bankrupt or neglecting its educational objectives. In cities without municipal or county hospitals, the teaching hospital cannot bear the burden without assistance from local government, public health departments and existing government or voluntary agencies for health, welfare and family services. It must look to these agencies to provide nonemergency services elsewhere, to operate first-aid stations and satellite clinics in needy areas, and to subsidize the costs of indigent patient care. The burden is not easily shifted to these agencies, however, if they lack the necessary funds. In other instances the complex array of overlapping and underlapping health and welfare services make coordination, effective cooperation and area-wide planning very difficult.

## Some Solutions for Teaching Hospitals

Meanwhile, teaching hospitals have had to be content with some reorganization in their emergency services without outside help. It has seemed inappropriate to employ full-time physicians in their emergency rooms because of the conflict with intern and resident training and traditional departmental prerogatives. Supervision of the emergency rooms has had to be vested in one or more faculty members or a committee of representatives from each of the major clinical departments. Neither arrangement has proved entirely satisfactory. A faculty surgeon gains little academic satisfaction from full-time supervision of an emergency service if this prevents him from doing major surgery. An internist may have little interest in surgical or obstetric emergencies and is likely to be less qualified in these areas than the residents whom he is required to advise and teach. Committee control is often unsatisfactory because departmental interests are allowed to override the well-being of the entire emergency service. Not many teaching hospitals have conferred departmental status upon the emergency service because this arrangement, again, is not in keeping with traditional academic organization.

### *Specialization of Emergency Rooms*

One avenue out of the dilemma which, incidentally, improves patient care, is to abandon the older concept of a general emergency room for adults, children, pregnant women, alcoholics, psychotics, and the injured as well as the sick. The emergency service can be divided into separate, specialized receiving rooms, each under the full control of the corresponding clinical department. This arrangement does not necessarily require a central receiving room or triage station from which patients proceed to the appropriate emergency room. A very satisfactory system has been devised at the Medical College of Virginia

wherein ambulance personnel do most of the screening. Children are taken directly to the pediatric area, pregnant women to the obstetric receiving room and injured patients to the surgical suite. Somewhat arbitrarily, it was decided that patients with chest pain should be brought to the medical suite and those with abdominal pain or bleeding to the surgical area. In actual practice this has presented no problem because the different emergency rooms are near one another and patients are transferred quickly should they arrive initially in the wrong area. Separate receiving rooms for alcoholics and psychotic patients are envisioned at this institution but, for these patients, a preliminary medical evaluation will probably be necessary in the medical emergency room to rule out associated organic disease.

As each clinical department develops its own emergency service, further refinements become possible. A special trauma unit can be separated from the general surgical area; in the medical area, special receiving units can be developed for patients with serious cardiac and pulmonary disease, as extensions of the respective in-patient, intensive care units for those diseases.

*The "Instant Care" Concept For Non-Emergencies*

In order to protect the specialized emergency rooms from misuse, patients with non-emergency problems can be seen in a special "drop-in" or "instant consultation" clinic located conveniently near the emergency rooms. Operating around the clock, seven days per week, this clinic can provide adequate diagnostic and treatment facilities for any patient who believes that his symptoms may be serious. For this clinic to remain fully functional, patients must be referred subsequently to an appropriate setting for after-care—either their own family doctors or an outpatient clinic. If the patient's illness turns out to be more serious than thought initially, he can proceed to the appropriate emergency room.

*Supporting Services*

The specialized emergency rooms and the "instant care" clinic function much more smoothly if they are served by a central x-ray department and clinical pathology laboratory in which only emergency procedures are performed. Chest x-rays, urinalyses, blood counts, blood urea nitrogen, blood sugar and serum amylase measurements, electrocardiograms and other important tests should be available within minutes to allow adequate preliminary evaluation.

Pharmaceutical supplies should be restocked daily by a pharmacist; the variety of drugs and solutions kept on hand can be reduced to a minimum. Physicians and nurses should neither fill prescriptions nor hand out free samples. For those patients who cannot get to a pharmacy, small supplies of prepackaged drugs can be given out, properly labeled, to tide them over until a pharmacy can be reached. Aspirin, Darvon®, Benadryl®, Phenobarbital, Hydro-Diuril®, Dilantin®, Digoxin, Kaopectate®, Paregoric, Tedral® and Aminophyllin suppositories are some of the preparations which can be supplied to patients in this way.

Sterile trays and instruments should be obtained from a central sterile and supply area so that the washing, packaging and sterilization processes are eliminated entirely from the emergency areas.

Similarly, there ought to be an appropriate division of labor among dietetic assistants, housekeepers, attendants, aides, transport personnel, clerks and unit managers to free nurses and physicians from paramedical tasks such as filling out requisitions, ordering diets, restocking supplies, cleaning and other maintenance duties, answering telephones, making clinic appointments and so on.

*Improvements in Patient Care*

In each of the separate emergency areas, patient care can be studied and improved when it is recognized that each step in patient care is susceptible to critical evaluation. Reception, registration, the medical interview, the physical examination, the formulation of a provisional diagnosis, the use of special tests to verify or amplify the diagnosis, the initiation of treatment and the formulation of an appropriate plan for admission or discharge and after-care, must each be evaluated for efficiency, acceptability to patients, cost, duration and appropriateness. Improvements can then be achieved in each step by eliminating factors which cause delays, misunderstandings, poor coordination, mistakes, inappropriate and wasteful use of personnel or equipment, poor patient-staff relationships and inappropriate staff responses or behavior.

The reception process may be cited as an example. The goals of this step are (a) to welcome the patient and those who accompany him; (b) to evaluate quickly the seriousness of the emergency; (c) to get the patient effectively into the registration process, or to bypass that step if circumstances demand it; (d) to give those with the patient the information they need about waiting and parking facilities, public conveniences, telephone facilities and sources of refreshment; (e) to prevent relatives and friends from entering and overcrowding treatment areas; (f) to keep relatives and friends informed about the patient's progress and the anticipated duration of his stay; (g) to get medical attention for relatives who become faint or hysterical; (h) to guide relatives to the patient's bedside at the appropriate time and to terminate visiting privileges discreetly so that treatment can proceed; (i) to comfort bereaved and anxious relatives and identify the need for a chaplain's services; and (j) to engage relatives or friends in

helpful activities such as recruiting blood donors, guarding the patient's valuables or making important telephone calls for him. The simple step of clearly separating reception from registration, and of employing a trained, mature receptionist who can endow the service with friendliness, understanding, sympathetic help and dignity, can remove many of the difficulties encountered by relatives in busy emergency rooms and effect a marked reduction in the incidence of complaints.

Similarly, the whole system of patient care can be speeded up and endowed with qualities which bespeak the personal interest of the staff. Personnel reeducation and training, the elimination of noise and confusion, and the logical delegation of responsibilities are some uncomplicated remedies which can be instituted.

*How Much Care?*

The idealists among us, who advocate comprehensive medical care for each patient in the emergency room setting, would subject patients to complete medical, social and psychological evaluations regardless of the presenting complaint. In practice, patient resentment runs high when physicians, social workers and nurses engage in seemingly unrelated interrogations and examinations despite their best intentions. It is probably better to bear down on the presenting problem in as thorough a manner as possible while remaining sensitive to the other needs which can then be dealt with in an appropriate clinic. For example, the asthmatic attack must be broken in the emergency rooms but exploration of the psychic, social and allergic background can be deferred to a more appropriate time and place.

Some of the confusion and congestion in emergency rooms results from policies which permit nonemergency work, elective procedures, delays in admitting patients to hospital beds, and lengthy observation periods. These practices tie up beds and stretchers and prevent the staff from concentrating on emergency work. Unfortunately, bed and nursing shortages in many hospitals cause a back up of patients in the emergency rooms and make it even more necessary that policies concerning admission and observation of patients, and elective procedures, be devised and adhered to strictly to keep stretchers vacant and the staff available for new emergencies.

The emergency service must maintain a state of readiness at all times for civil disturbances and other disasters that can occur suddenly.

An advantage to having separate, specialized emergency rooms is that the surgical suite and its associated trauma unit can be relieved instantly of all routine work when a disaster occurs, since patients can be transferred immediately to other emergency rooms. The most serious, salvageable casualties can be dealt with in the surgical area while minor wounds and injuries can be treated in the medical, pediatric and obstetric receiving rooms if necessary.

*Predictions for the Future*

It is likely that emergency rooms will play an increasingly larger role in the delivery of health services. Though efforts are under way to build new medical schools and enlarge existing ones, to graduate more physicians and encourage them into family practice, to train physician's assistants and more paramedical personnel, and to employ computers in multiphasic screening operations and other medical activities, there are reasons to view the future with apprehension.

Medical school curricula and housestaff training programs continue to emphasize specialization; there is no evidence yet that training programs for family practice, and specialty certification in that field, will satisfy the Nation's need for general practitioners. Population growth alone is likely to aggravate the present shortage of physicians, nurses and paramedical personnel because none of the remedies are being implemented on a large enough scale. There is ample reason to suspect that the proportion of aged and chronically-ill persons in the population will increase and that many of the disease-producing elements in our environment will continue unchecked.

# Pre-Hospital Management of Acute Myocardial Infarction

CHARLES L. BAIRD, JR.

*Division of Cardiovascular Disease,*
*Medical College of Virginia,*
*Richmond 23219*

Atherosclerosis of the coronary arteries is recognized today as a major health problem in the United States, since 600,000 deaths are attributed to it annually (Vital Statistics, 1966). The medical profession and the general public are well aware of the important studies of its pathogenesis and prevention. However, the profession has been so preoccupied with these phases of investigation that the mechanism of death and possible modes of correction have remained obscured until recently.

In 1956 Claude Beck of the Western Reserve University suggested that ventricular fibrillation may be the mechanism of death in many instances of arteriosclerotic heart disease (Beck, Weckesser and Barry, 1956). He popularized the phrase "hearts too good to die" to promote the concept that death in coronary disease was frequently electrical and not always associated with a terminal pathologic process. In 1960 Dr. Adelson reported a study of 500 consecutive sudden deaths attributed to coronary disease, discovering that only one-third of these patients had a recent thrombus or myocardial infarction, while two-thirds of the group had no "new" anatomic disease (Adelson and Hoffman, 1961). This provided further support to the concept that the lethal mechanism in arteriosclerotic heart disease, more appropriately termed ischemic heart disease, was unrelated to the degree of myocardial damage and most likely was an electrical phenomenon. Electrocardiographic monitoring of patients with acute myocardial infarction in coronary intensive care units has subsequently documented that ventricular fibrillation was frequently the mode of death in these patients. The 30 percent decrease in hospital mortality rate of patients with acute myocardial infarction has been attributed to the coronary intensive care unit system with its technique of instant defibrillation (Day, 1956). However, improved supportive medical therapy and the use of antiarrhythmic drugs may have also decreased the incidence of serious arrhythmias such as ventricular fibrillation. The fate of these patients resuscitated after ventricular fibrillation is excellent, as illustrated by a recent report of a one year mortality rate of only 12 percent in 53 such patients (Lawrie, 1969). Such rewarding results in coronary intensive care units have encouraged physicians to consider wider applications of these effective cardiopulmonary resuscitative techniques.

## Pre-Hospital Phase of Myocardial Infarction

The major concern in the management of acute myocardial infarction is the care of patients outside of the hospital, since 55 percent to 75 percent of patients dying with acute myocardial infarction never reach the hospital. In 1966 Frank Pantridge of Belfast, Northern Ireland alerted the medical profession to this problem by the establishment of the mobile coronary care unit, to provide safe transportation as well as prevent death from cardiac arrest (Pantridge and Geddes, 1967). Dr. Pantridge's mobile coronary unit consists of an ambulance with routine monitoring and resuscitative equipment, such as a battery operated defibrillator and pacemaker catheters. The house physician and nursing personnel of the Royal Victoria Hospital coronary care unit are immediately available to accompany this ambulance when summoned by telephone from one of the Belfast physicians. This unit admitted 794 patients with acute myocardial infarction during a 39 month period and encountered 126 cardiac arrests (Pantridge and Adgey, 1969). There were no survivors in 71 patients who did not receive cardiac resuscitation prior to the arrival of the mobile coronary care unit. Cardiac resuscitation was administered to the remaining 55 patients prior to the arrival of the unit; ventricular fibrillation was observed in 48 and asystole in seven

of the patients. Thirty-nine of the 48 patients with ventricular fibrillation were successfully defibrillated but none of the patients with asystole were resuscitated. The majority of the patients who failed to respond to defibrillation were observed to have had inadequate ventilation or sternal compression prior to the arrival of the mobile coronary care unit.

The successful resuscitation by Dr. Pantridge's mobile coronary care unit's team of 30 percent of patients collapsing outside of the hospital with cardiac arrest is significant, particularly since two-thirds of this group were long term survivors. It is doubtful whether any of the patients could have effectively been resuscitated by the available rescue squads and ambulance services that provide emergency health care in the metropolitan areas of the United States. Wilder et al (1964) reported 17 patients in whom appropriate resuscitative measures were applied during transport to the hospital. In all of these patients ventricular fibrillation was abolished in the emergency room but none of the patients survived to leave the hospital. This study reflects the widespread disappointment with the present day techniques in the management of cardiac arrest outside of the hospital. However, the concept of the mobile coronary care unit system remains as a controversial issue (Steel, Cooper and Fox, 1969). Dr. Pantridge's goal of early monitoring of patients with suspected myocardial infarction was achieved by the admission of 75 percent of patients within four hours after the onset of symptoms (Pantridge and Adgey, 1969). This represents a significant improvement over a previous report of an admission rate of only 16 percent in four hours (McDonald, 1967).

It is surprising that only 11 of the 794 patients were arrested during the period of transportation by Dr. Pantridge's mobile coronary care unit. This low incidence must be attributed to the fact that 40 to 50 percent of the mortality occurred during the first hour in patients who died of acute myocardial infarction (Bainton and Peterson, 1963). It is possible that the early administration of antiarrhythmic drugs, such as lidocaine (Xylocaine® hydrochloride) and atropine, may have decreased the incidence of cardiac arrest during transport. It would appear from Dr. Pantridge's data, however, that the major problem is cardiac arrest that occurs shortly after symptoms, a problem that can only be partially solved by the institution of the mobile coronary care unit system. This does not preclude recommending a program to provide effective emergency health services with specially trained, certified para-medical personnel for electrocardiographic monitoring and correction of fatal arrhythmias due to myocardial infarction as well as other disorders such as respiratory failure, complete heart block and electrocution.

### Future Management of Myocardial Infarction

Unfortunately, the medical profession is oriented to hospital based "crisis care" to such an extent that certain aspects of community health problems are left unattended. However, the epidemic of coronary deaths that is now occurring outside of the hospital in the United States has stimulated physicians to realize that any appreciable reduction in the mortality rate must come from their advice and support in the emergency health service field. At the present time it appears justifiable to recommend a community program of sophisticated emergency health care, although hopefully in the future preventive care will render such a proposal obsolete.

The least expensive and possibly most effective program would be educating the public concerning the early signs and symptoms of acute myocardial infarction. This could be initiated by physicians as well as volunteer and government supported agencies. Particular attention would be paid to the detection of high risk individuals who have hypertension, diabetes mellitus, hyperlipemia or other conditions that predispose to ischemic heart disease and its complications. The community education program would encourage immediate self referral of patients to a monitoring area (Fig 1) upon the onset of symptoms. It would be quite advantageous to have electrocardiographic monitoring and basic resuscitative equipment at industrial nursing stations, department store dispensaries, and other strategically located extra hospital sites where nurses and/or para-medical personnel provide first aid care. The patient under observation in these units would be managed similarly as if hospitalized in an intensive care unit. Complete electrocardiograms and constant electrocardiographic monitoring would take place until arrival of the ambulance, which would continue electrical surveillance during transport to the hospital. The proposed system of extra hospital monitoring would be enhanced by the effective use of an emergency communication program. The transmission of electrocardiograms via radio telemetry and/or telephone would allow the hospital physician on call for the coronary unit to prescribe antiarrhythmics and other drugs for patients under the supervision of the nurses and para-medical personnel. It is possible that the early administration of atropine for bradyarrhythmias, and/or parenteral lidocaine (Xylocaine® hydrochloride) therapy may prevent subsequent cardiac arrest. If such an assumption proves valid, self-administration of these drugs may be indicated, particularly after transmission of the electrocardiographic data to designated coronary care units.

The proposed public educational system would have such a significant impact on hospital emergency room care that reorganization of these services would be

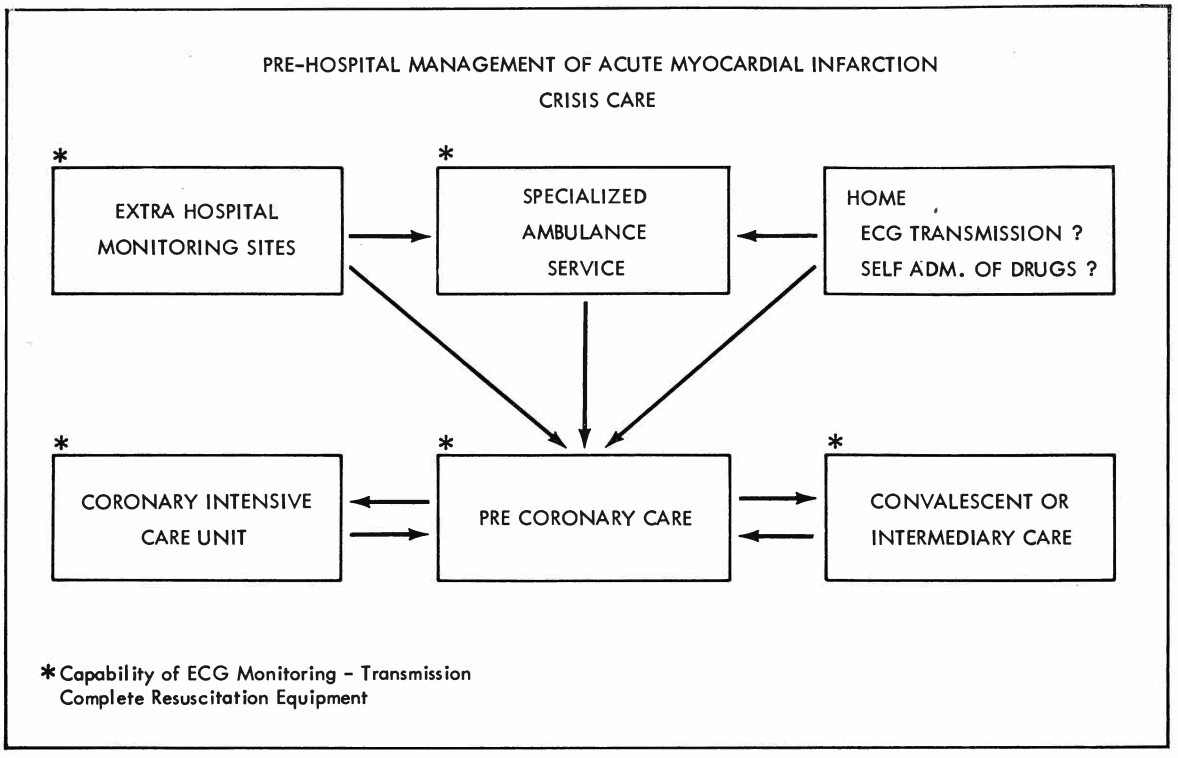

PRE-HOSPITAL MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION
CRISIS CARE
EXTRA HOSPITAL MONITORING SITES
SPECIALIZED AMBULANCE SERVICE
HOME ECG TRANSMISSION ? SELF ADM. OF DRUGS ?
CORONARY INTENSIVE CARE UNIT
PRE CORONARY CARE
CONVALESCENT OR INTERMEDIARY CARE
* Capability of ECG Monitoring - Transmission
Complete Resuscitation Equipment

Fig. 1

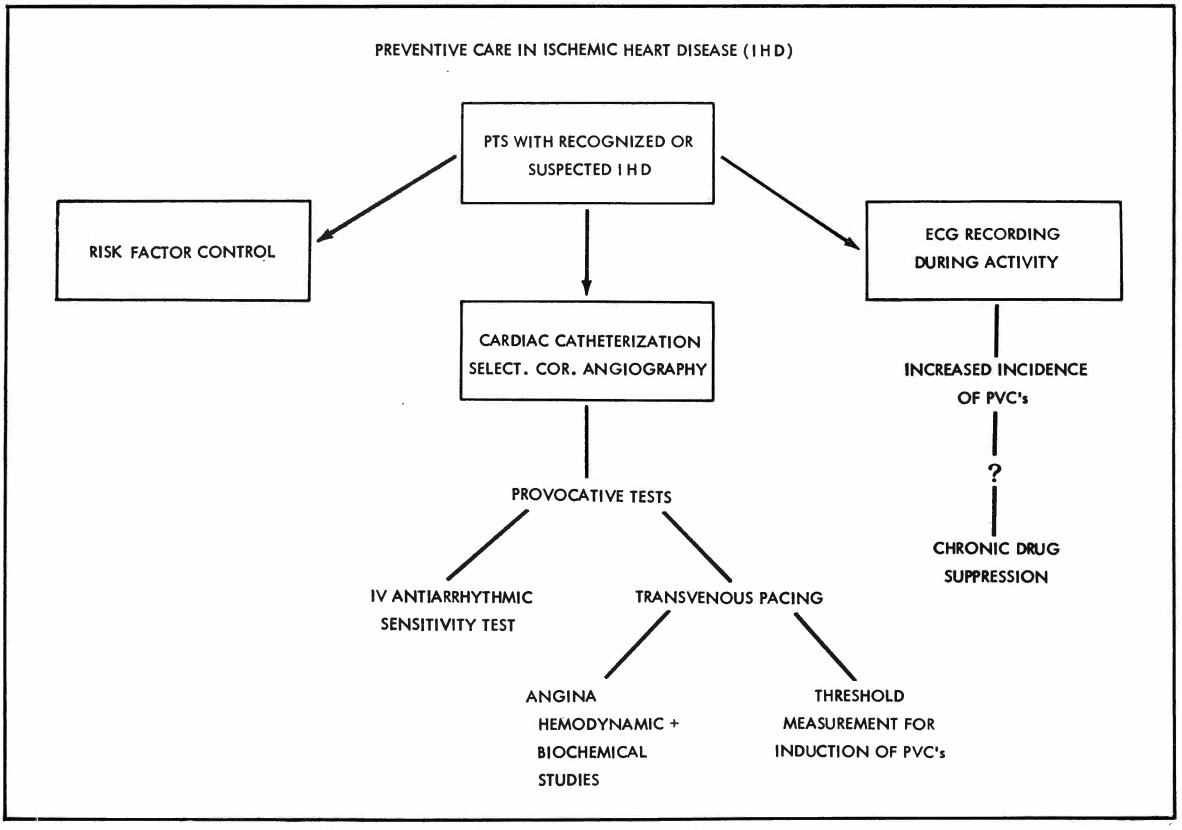

PREVENTIVE CARE IN ISCHEMIC HEART DISEASE (IHD)
PTS WITH RECOGNIZED OR SUSPECTED IHD
RISK FACTOR CONTROL
ECG RECORDING DURING ACTIVITY
CARDIAC CATHETERIZATION SELECT. COR. ANGIOGRAPHY
INCREASED INCIDENCE OF PVC's
?
PROVOCATIVE TESTS
CHRONIC DRUG SUPPRESSION
IV ANTIARRHYTHMIC SENSITIVITY TEST
TRANSVENOUS PACING
ANGINA
HEMODYNAMIC + BIOCHEMICAL STUDIES
THRESHOLD MEASUREMENT FOR INDUCTION OF PVC's

Fig. 2

necessary. A pre-coronary care area, consisting of simple electrocardiographic monitoring with a supervisory staff of nursing personnel, could be developed to screen these patients for possible hospital admission (Sidel, Acton and Lown, 1969). Patients who have clear evidence of ischemic heart disease or serious arrhythmias naturally would be admitted directly to the coronary intensive care unit. Patients with suspected myocardial infarction who present themselves for observation but clearly have other conditions that simulate ischemic heart disease (such as hyperventilation syndrome, gastrointestinal disorders or neuromuscular chest pain) would be reassured and released. A third category of patients in which the diagnosis remains obscure and hospitalization is recommended, would evolve from this large scale screening program. It would appear that the convalescent coronary care unit, originally proposed for continued monitoring of patients with recent myocardial infarctions, would be logically suited for this group. If it becomes established that the patient has "acute" ischemic heart disease or significant arrhythmias, transfer to the coronary intensive care unit, where a greater level of sophisticated care exists, would take place. These suggestions of three different monitoring areas are consistent with today's trend toward graded care in hospital administration.

The reorganization of the emergency health services, the public education program, and graded hospital care would have limited effectiveness because of the remaining problem of sudden death. Therefore, it would be necessary to include in the preventive care programs for ischemic heart disease (Fig 2), methods for selection of patients subject to this and other complications. It is conceivable that patients would be admitted to an ambulatory cardiovascular center where various diagnostic and provocative tests would take place. Cardiac catheterization including selective coronary arteriography, atrial pacing, biochemical determinations, and possibly electrophysiologic threshold pacing would be the nature of such studies. Electrocardiographic rhythm monitoring during stress and daily activities of patients in this proposed unit might provide the means for the identification of patients with a high incidence of ventricular arrhythmias. The reports of Chiang et al (1968), and Hinkle, Carver and Stevens (1969), of a greater risk of sudden death in patients with an increased number of premature ventricular contractions, raises the possibility that chronic drug suppressant therapy, such as quinidine sulfate, may reverse such a trend. A large scale study, perhaps on an international basis, is urgently needed to provide an answer to this very important question. Although the mobile coronary care unit system has not been the final answer in the management of cardiac arrest outside of the hospital, it has succeeded in stimulating the medical profession as well as other interested members nity to investigate this problem in its aspects.

## References

**Adelson L, Hoffman W:** Sudden death disease. JAMA 176: 129, 1961

**Bainton CR, Peterson DR:** Deaths from disease in persons 50 years of age and y munity-wide study. New Eng J Med 269:

**Beck CS, Weckesser EC, Barry FM:** F and sucessful defibrillation. JAMA 161: 43

**Chiang BN, Perlman LV, Ostrander LD,** logical significance of premature systoles i disease and sudden death in Tecumseh, M tion 38, 1968

**Day HW:** Effectiveness of an intensiv area. Amer J Cardiol 15: 51, 1965

**Hinkle LE Jr, Carver ST, Stevens M:** asymptomatic disturbances of cardiac r duction in middle-aged men. Amer J 1969

**Lawrie DM:** Long-term survival after ve tion complicating acute myocardial infa 1085, 1969

**McDonald EL:** Coronary care units. The *From* Acute Myocardial Infarction. P symposium sponsored by the Universit Julian DG, Oliver MF (eds) London: Li

**Pantridge JF, Adgey AA:** Pre-hospital Amer J Cardiol 24: 666, 1969

**Pantridge JF, Geddes JS:** A mobile inter the management of myocardial infarctio 1967

**Sidel VW, Acton J, Lown B:** Models for pre-hospital coronary care. Amer J Card

**Steel K, Cooper JK, Fox SM:** Mobile c Circulation 39: 279, 1969

**Vital Statistics of the United States.** U. Health, Education and Welfare, 2, Part 1966

**Wilder RJ, Jude JR, Kouwenhoven WB,** monary resuscitation by trained ambu JAMA 190: 531, 1964

# The Development of a Comprehensive Health Care Program for Patients with Active Tuberculosis

GRACE G. EDDISON AND BARBARA M. FARMER

*Department of Community Health,*
*Albert Einstein College of Medicine,*
*Bronx, New York 10461*

## Introduction

In recent years workers in many fields of medicine have recognized that new systems must be developed for the delivery of health services to all the people of the United States. Community-oriented modifications of anti-tuberculosis health services have become mandatory so that effective long term therapy (minimum of 24 months to several years, or even life) can be achieved. Deuschle in 1959 found that tuberculosis control in Navajo Indians living in Arizona could not be maintained until an amalgamation was created between modern scientific techniques and an understanding of special Navajo cultural mores. Ambulatory tuberculosis treatment was not effective in the Chinese community of San Francisco until clinic hours were made compatible with Chinese cultural living patterns (Curry, 1964). It was discovered that more successful treatment of problem patients, uneducated Negroes and/or skid row alcoholics, could be achieved by locating ambulatory treatment centers within their communities (Cohen and Blacker, 1962; Curry, 1964; Cohen et al, 1966; Curry, 1968). Curry in 1968 developed district treatment teams (each containing a physician, two public-health nurses and a clerk) for each special community. Each team viewed the patient as a complete entity so that medical, social, emotional and environmental problems were reviewed in relation to the patient's illness. In addition, Curry in 1968 and other workers (Vandiviere, Kane and Kavasch, 1970) have recognized that the patient must be enlisted as an active member of the therapeutic team. Flexibility in the organization and delivery of tuberculosis health care must be maintained as too often the convenience of the patient is sacrificed to the convenience of the treatment staff (Moulding, 1966; Fox, 1968). Kane and Deuschle in 1967 pointed out difficulties in doctor-patient communications with the "hill people" of Eastern Kentucky, as physicians from across the nation have been educated in the handling of "clinical material" rather than people.

Another dimension of particular importance in the field of tuberculosis treatment is the rising cost of hospital care. With the advent of chemotherapy the months of hospitalization required for effective anti-tuberculosis therapy have been dramatically decreasing over the past several years. However, traditionally in the United States a patient with positive sputum must remain in the hospital until his sputum has converted to negative—usually a minimum of three months. Any complicating circumstances, even the failure to collect a sputum culture, may increase the hospital stay to six months and up to 24 months for the "problem" patient. On the other hand, developing countries do not have sufficient hospital beds to accommodate the population with active disease. The now classical studies from Madras, India (Tuberculosis Chemotherapy Centre, Madras, 1959; Velu et al, 1960; Devadatta et al, 1961; Dawson et al, 1966) have shown conclusively that patients with active far advanced tuberculosis can receive as effective treatment at home (despite crowded housing, poor nutrition and hygiene) as patients who spend their first year of treatment in the hospital. Furthermore, no increase of infection in contacts of these patients treated at home was found (Andrews et al, 1960; Ramakrishnan, 1961). In Hong Kong (Moodie, 1967)

approximately 12,000 patients with active tuberculosis were not hospitalized but received supervised chemotherapy in clinic centers.

The Van Etten Home Care study, initiated in February 1967 under the Department of Medicine of the Albert Einstein College of Medicine Bronx Municipal Hospital Center, was designed as a control study of home versus hospital treatment for patients with active tuberculosis. The purpose of the study was to determine if domiciliary tuberculosis care for a population of socially deprived patients located in Metropolitan New York could be as successful as has been demonstrated for the very different population in Madras. Results (Eddison and Farmer, in preparation) have shown that such sputum positive patients can be treated successfully in the home rather than by conventional hospitalization without an increase in tuberculosis infection in the contacts of these patients. Furthermore, the cost of home treatment is a fraction of that found in conventional hospitalization. However, among the ghetto dwellers who contract tuberculosis there is a significant percentage of individuals who are chronic alcoholics, street livers, sociopaths, etc.—generally, hopeless individuals whom traditional hospital services have thought could not be rehabilitated. In order to achieve effective medical therapy in this hard core problem group, "pill pushing" alone was not sufficient. In addition, both psychosocial problems and educational deficiencies had to be treated.

During the development of the Van Etten Home Care program, it was discovered that the most important aspect of a comprehensive health care service was a basic philosophy concerning human relationships which must be believed and practiced by all staff members. This philosophy, then, became the major force in the creation of a functioning multidisciplinary team that delivered the actual services to the individual patient. Basic concepts essential to both this philosophy and the development of a functioning treatment team could be utilized in many medical fields other than those restricted to tuberculosis treatment. Though many of the special services rendered Van Etten Home Care patients were designed to reach the hard core problem patient, they also illustrate the effectiveness of certain basic concepts in the delivery of a comprehensive health service.

## Basic Philosophy

In the Van Etten Home Care program a system of comprehensive health care was developed in which pure medical therapy played a small role and in which medical, social, psychological and educational services were delivered by a multidisciplinary team. The four guiding principles of the service were: 1) the belief that the psychosocial situation must be treated in order to achieve effective medical therapy; 2) the belief that the patient's entire family must be treated as a unit rather than the patient alone; 3) the belief that the family unit should not be treated by individual members of the staff but rather by staff working cohesively as a team; and 4) the belief that the total treatment program must be given in an atmosphere of true caring for the patient and his family on all levels.

The key to the success of the program can be found in the interpersonal relationships between staff members (clerical included), between patients, and between staff and patients. Because of the constant interaction between these individuals, it is difficult to describe specific treatment concepts and/or methods which relate directly to specific treatment results in the individual patient. However, it is possible to describe the basic philosophy in broad terms.

The tenor of all interpersonal relationships within such a program must be set by the establishment of one major premise—the conviction that all men are equal. It is important to define, insofar as is possible, what this really means for both staff and patients: 1) Patients are humans of equal importance to staff and to each other regardless of past behavior, education, environment, race or creed. 2) Staff members are of equal importance to patients and to each other regardless of their individual function, title, education and skill.

Simply to state that all men are equal is not sufficient. Each staff member must believe the concept to such an extent that his belief is reflected in his delivery of services. In order to achieve this, a staff member must be secure within himself and have confidence in his own intrinsic worth so that he can effectively treat the patient with openness of feeling, truthfulness, thoughtful understanding and respect. In turn, the patient begins to respond with a gradual strengthening of his own ego, with the development of better interpersonal relationships with other patients as well as staff, with the ability and desire to learn through new experiences without fear of ridicule, and with the development of greater insight into his own behavior. For example, as the patient begins to gain confidence he begins to realize that: he does not have to remain a result of his past environment but rather that he has the strength to begin a change; staff may disapprove of his behavior but not of his person; staff recognizes that he does try even after repeated failures; he does have something to offer not only to himself but to others and to the program and; once he has reached a new level of functioning a little bit more is expected of him until he is able to take over full responsibility for himself. The patient becomes a responsible member of the community of the Program and as such shares in its joys and its problems. As the patient gains more strength and ability he begins to help the less able

patient with problems related to the regularity of medication, to the consumption of alcohol, to the use of drugs, to education, etc. Therefore, a treatment program is developed in which patients not only receive treatment from staff members but also from other patients, so that a casual visitor to the service should be unable to distinguish between patients and staff. In the end the patient receives effective medical treatment for his disease, in this case primarily tuberculosis; but in addition, his original sense of hopelessness and futility is replaced gradually by a sense of well-being, faith in the future, and most important belief in his own intrinsic worth as a human being. However, in order to achieve success, it must be emphasized that a treatment team cannot resort to punitive measures or rapid disciplinary discharge from the program. The first step forward in social rehabilitation may not be realized for a year or longer.

## Multidisciplinary Teams

Since funds were limited for the Van Etten Home Care program, all staff members automatically became members of one multidisciplinary team. The team was composed of:

1) Supervisory personnel in medical, paramedical and clerical fields—the Director of the Program, the Director of Family Therapy, the Executive Physician Aide and the Assistant Administrator. (Funds were never provided for an Administrator.)

2) A treatment unit consisting of:

a) medical personnel—three part-time physicians (½, ¼ and ¼ time) who provided the equivalent of one full-time internist

b) paramedical personnel—one trained social worker and one licensed teacher in the Family Therapy Department as well as two physician aides, a homemaker and a nurse's aide in the Physician Aide Department

c) paraprofessional personnel—one untrained worker in Family Therapy

d) clerical personnel—one medical typist

e) job trainees and volunteers—patients, varying in number from zero to three or four at once

f) students—medical and educational, varying in number from zero to four in each discipline.

3) Part-time specialty consultants in pediatrics, psychiatry and psychology (approximately ⅛ time for each).

This team could be multiplied for larger programs which, in addition, would require "core personnel" composed of supervisory personnel for the total program and appropriate consultants for the delivery of specialty services to all teams. There should be ample opportunity for the participation of students from a variety of fields; for example, social work, nursing and psychology.

It must be emphasized that the assignment of personnel to multidisciplinary teams does not guarantee that the teams will function effectively in the delivery of comprehensive medical care. Success can be achieved only if the basic philosophy—all men are equal—is accepted, believed and manifested by each staff member. Thus a freedom of relationships between the staff member and his patients as well as between himself and his fellow team members is created. Without this freedom, both he and the whole team will fall short of total success.

The most effective method by which the Van Etten Home Care Service was able to develop a functioning multidisciplinary team was through the establishment of a staff group session. The entire staff (including clerical workers) met one hour a week under the leadership of the psychiatrist. Through a general discussion of the goals of the program, the psychiatrist was able to bring out unexpressed hostilities between various staff members, between professional and non-professional staff, and between staff and certain patients. Gradually each staff member gained insight not only into his own function within the total program but also into the function of every other staff member. Each individual became aware of the interaction between staff members, between staff and patients (both therapeutic and atherapeutic), between staff and community agencies, and between staff and the community at large. With an understanding of these interrelationships came the acceptance of the philosophy that all individuals were equal human beings whether they were professional staff, non-professional staff, or patients. Those staff members in authority were no longer able to take refuge behind their professionalism but had to recognize that non-professional staff were of equal importance to the patient and that no one staff member was a superior human to any other staff member or patient. On the other hand, staff learned that this equality in human relationships did not negate the need for authority in the organizational structure of the program. Gradually staff recognized that chaos would exist without trained individuals to supervise and to undertake the burden of ultimate authority for major decisions. As each staff member became secure in his knowledge of all these interrelationships, he became able to work cohesively and flexibly within the multidisciplinary team. The team, then, was able to deliver effective comprehensive health care to the patients.

## Services Rendered

A comprehensive health care service should deliver both comprehensive medical and psychosocial care and, in addition, other services appropriate for

the consumer population. In the Van Etten Home Care program, the medical services represented only a small percentage of the total effort. They were comprehensive in that all members of the family unit were treated for tuberculosis (or tuberculous exposure) and other concomitant diseases by Home Care internists and a pediatrician as well as by specialty services throughout the Albert Einstein College of Medicine Bronx Municipal Hospital Center. A family evaluation conference was held once a week, attended by all staff, in which the family's medical and psychosocial course was reviewed and the treatment plan was reviewed, amended, terminated or renewed as appropriate. Minutes of the conference were recorded in individual patient charts. All new admissions were reviewed in 1–4 weeks, stable families in 4–8 weeks and families no longer requiring intensive care in 8–12 weeks. Chart reviews were conducted once a month and laboratory reports were scanned daily by a physician so that any abnormalities might be noted for immediate action. A part-time psychiatrist was a vital member of the team. Families were presented in weekly psychiatric conferences. Appropriate therapy was instituted which might have included chemotherapy, individual psychotherapy, group psychotherapy and/or family therapy (administered by the Family Therapy staff but when necessary under direction of the psychiatrist), or referral to the appropriate psychiatric service in the community. In this way psychiatric illnesses (including impending acute psychoses) were treated without hospitalization, catastrophic situations within the family unit were prevented, and crisis intervention was provided through either long or short term therapy which also prevented acute psychiatric hospitalization.

Physician aide staff were trained by a physician in the performance of a variety of skills and services related to the medical care of the families. While the tuberculosis source patient was still hospitalized, members of the physician aide staff began intensive education of the patient and his family in the principles of contagion, in the establishment of appropriate patterns of behavior so that medication would be taken faithfully and regularly for as long as needed (sometimes for life), and in self and/or family administration of injectable medication where appropriate. This educational process was continuous throughout the family's stay in the Van Etten Home Care Service, through home visits and/or frequent clinic visits. Patients thought to be poorly motivated received their medication daily in Home Care. Special "Patient Care Control" wall charts were established so that regular physician visits, appropriate specialty clinic visits (including those required to check early signs of drug toxicity), blood work, x-rays, injections, family therapy sessions, group therapy appointments, teaching sessions, special activities and transportation of families could be scheduled in the most efficient manner. These charts were constructed so that not only was the schedule for each family member available at a glance, but also, any failure to complete a scheduled appointment stood out and could be corrected rapidly. In addition, physician aides reinforced and participated in the psychosocial treatment for each family unit; when appropriate certain physician aides worked with the family therapists in special programs.

Effective medical therapy could not have been achieved for this particular population group without the psychosocial and educational services delivered by members of the family therapy staff. They have been the moving force behind new methods of treatment and programming; for example, the work program, overnight camp trips, vocational training for patient employees and volunteers, and special activities organized by patients.

The long and short term family therapy treatment goals for each family member as well as his family unit fell into two categories: 1) concrete services, ie, coordination of programming, environmental manipulation—rehousing with moves to better neighborhoods, help in securing of adequate financial support, assistance with union employment problems, rapid processing of prosthetic aides, etc.; and 2) counseling services, when appropriate with psychiatric consultation, to help develop and make use of the patient's own strengths in order to maintain or develop a useful, gratifying place for himself within his family unit and the community.

Whenever possible, existing community resources were used and personal contact was established by the family therapist with staff in other agencies, thereby utilizing a maximum of service with a minimum of duplication of effort. Members of the family therapy staff have worked intensively with the Department of Social Services (formerly Department of Public Welfare), the Board of Education, the Board of Higher Education (including the adult Head Start Program), New York Tuberculosis and Health Association, Personal Aides to the Homebound, Just One Break, the Office of Vocational Rehabilitation (and other vocational agencies), Bureau of Child Welfare, Family and Criminal Courts, etc.

Psychological testing and evaluation of individual patients in conjunction with their family units produced a major impact on the services rendered family units. Case discussions, staff concerns and treatment problems were discussed prior to the testing sessions so that results could be meaningful. Initial batteries of psychological tests revealed that most of the patients had IQs in the defective or borderline range. It was recognized at the time of testing that some individuals could function at higher levels and could be trained for limited vocations. However, the changes seen in these patients after six months on the service

were not predicted. Many had been functioning at a deficient level as the result of their illiteracy, cultural and social deprivation. They were not retarded.

In 1967 a small exploratory adult patient education program was initiated through the services of a volunteer teacher. Patients responded with an excitement and eagerness to learn. Staff members became aware of the multiple problems of the adult illiterate whose excellent memory with appropriate responses to queries serves him well. However, he may have had to leave his job because work orders which he could not read came with his advancement. Following this he may have turned to alcohol and street living. He may not follow written medical instructions or he may refuse to read eye charts, etc. He is well defended and will not freely admit to his deficiency. Therefore, he will not seek the aid of an educational agency in the city and in fact, adult educational programs begin with the premise that an individual can read and write. There have been on the Van Etten Home Care Service a significant number of young adults between the ages of 19 and 35 who cannot read one word, who may not know the alphabet, and who may or may not be able to sign their names. Therefore, it became mandatory to expand the educational program in order to achieve both effective social and vocational rehabilitation as well as adequate tuberculosis treatment.

Several family therapists trained as teachers embarked on a teaching program designed not only to teach reading, writing and arithmetic (since many were unable to add and subtract simple numbers, welfare budgets were grossly mismanaged and misused), but also to broaden cultural and social horizons. In addition, family therapists taught Spanish speaking patients and children English, kept teenage patients up-to-date in their school work, gave preschool children an initial school experience, and evaluated behavioral problems and possible retardation in problem children. A fascinating and productive extension of the adult teaching program was the use of an illiterate adult patient for the teaching of preschool children. The fear that a child might catch the adult not knowing something in the lesson increased the speed of the adult's learning considerably. The educational program could not have succeeded without the help of student teachers from Pace College whose requirements for an Educational Psychology course were met by teaching patients and family members on all levels. Experience with this patient population suggests that a great majority of ghetto dwellers with tuberculosis have never functioned at a level compatible with their potential abilities. Therefore, it is felt that educational opportunities should be provided at all levels, including high school equivalency, in order to equilibrate function with ability.

An important aspect in the development of the Van Etten Home Care program was the ability to explore new and on occasion radical treatment methods. The most effective of these methods was the institution of overnight (1–4 nights) camping trips which, by patient demand, were scheduled throughout eight months of the year. One camp site, located in the Catskill Mountains (New York State Reserve) had to be reached by a half mile hike uphill, with all supplies except water and wood back-packed into the site. Because reservation of the lean-to was not possible, these trips were taken off season in extremes of weather. The camping activities of wood cutting (usually obtained by felling trees), collecting water, cooking, and cleaning filled most of the daylight hours at the mountain site. However, the majority of trips were to a lakeside camp site in upstate New York to which patients with physical limitations could be driven. Here everyone participated in general camp activities including tent raising (occasionally collapsing) and special group activities such as fishing, swimming, hiking, boating, and canoeing. Many ghetto dwellers had never had normal childhood experiences and thoroughly enjoyed learning children's songs and games; for example, Red Rover, Tisket a Tasket or Hide and Seek. Because staff and patients shared a variety of camping experiences, patients became convinced that all men were equal in Van Etten Home Care. With this conviction, a freedom in interpersonal relationships between patients and between patients and staff began to emerge. As patients gained self confidence they began the long climb towards social rehabilitation.

This freedom of interpersonal relationships carried over into the daily activities within the program. The patient-staff coffee pot, located in the waiting room, provided opportunity for socialization between patients and between staff members and patients. Patients took great pride in the preparation of daily lunches, frequently an ethnic specialty, which were shared by patients and staff alike. Much social and psychological rehabilitation was effected here by staff members who superficially appeared to be relaxing. Of practical importance was the fact that these lunches often provided the only solid meal per day for patients whose Welfare food budget of 66 cents per day per person was not sufficient.

Many patients, including alcoholics, spent all day in Van Etten Home Care activities. Some were taught a variety of crafts which included leather carving, copper and silver smithing, silver jewelry work, enameling, painting, plastics, decorator candles, paper mache objects and jewelry, pottery, tapestries, unusual small pieces of decorative furniture, wood working, refinishing and repair of old furniture, etc. Pa-

tients skilled in sewing, knitting, crocheting and needle work taught their skills to other patients. Children participated in supervised simple projects and were taken on special trips; for example, the zoo, or most successful, an overnight camping trip to upstate New York. Adult patients still under supervision who had progressed in their own rehabilitation, became "staff" members and joined in the supervision and care of children on these trips. Other patients became full-time volunteers registered in the Bronx Municipal Hospital Center Volunteer Corps. They worked in program areas best suited for their own rehabilitation: some in supervision of work projects; some in teaching of either reading and writing or a skilled trade; some as messengers; some supervising children while their parents were participating in Home Care activities, shopping, etc. (staff members also used this service, thereby decreasing absenteeism); and some in training programs for specific staff openings. The goal of the latter training program was that the patient would become sufficiently proficient to either remain with the Service if he wished or be located in another position complete with training, work experience and reference. Former patients were trained and employed full-time as physician aides, family therapists and medical secretaries.

Patients organized special activities and entertainment with appropriate help and supervision from staff members when needed. The biggest patient party of each year was the December Holiday Party attended by Santa Claus (a patient) who called each child by name to give him his own present (the only holiday gift for many children). Entertainment was provided by a volunteer teen-age band that also played for Halloween parties for which patients made crepe paper costumes and joined the children in ducking for apples and other games. Staff costumes at the 1968 Halloween Party reflected the freedom of attitude toward that "dread disease—tuberculosis" by ingenuous costumes for the TB germ, a box of kleenex, an x-ray, urine collection tubes, a needle, and a vampire.

Services rendered Van Etten Home Care patients included quality medical and social services as well as special services and programming developed in order to reach all levels of the patient population including hard core problem patients. The atmosphere created by these special services coupled with the basic philosophy of the program provided a therapeutic treatment milieu for all patients so that any given patient could take from the total program the support he needed for his own independent function.

## Summary

Concepts basic to effective medical care evolved from the development of a comprehensive health service program for patients with tuberculosis. The key to success was found in a basic philosophy underlying all interpersonal relationships—the conviction that all men are equal. This philosophy then became the motivating force behind the creation of a functioning multidisciplinary team in which there was developed a freedom of relationships between each team member (clerical included), and between team members and patients. The effectiveness of this approach in comprehensive medical care was illustrated by examples of special services and programming which were designed to reach all levels of the patient population, including hard core problem patients.

## References

**Andrews RH, Devadatta S, Fox W, et al:** Prevention of tuberculosis among the family contacts of tuberculous patients in South India, and influence of segregation of the patient on the early attack rate. Bull WHO 23: 463, 1960

**Cohen SC, Blacker E:** Ambulatory treatment of pulmonary tuberculosis. Dis Chest 41: 524, 1962

**Cohen SC, Steinfeld LI, Foley JT, et al:** Ambulatory treatment of pulmonary tuberculosis. Dis Chest 50: 21, 1966

**Curry FJ:** District clinics for outpatient treatment of tuberculosis problem patients. Dis Chest 46: 524, 1964

**Curry FJ:** Neighborhood clinics for more effective outpatient treatment of tuberculosis. New Eng J Med 279: 1262, 1968

**Dawson JJY, Devadatta S, Fox W, et al:** A 5-year study of patients with pulmonary tuberculosis in a concurrent comparison of home and sanatorium treatment for one year with isoniazid and PAS. Bull WHO 34: 533, 1966

**Deuschle K:** Tuberculosis among the Navajo. Amer Rev Resp Dis 80: 200, 1959

**Devadatta S, Andrews RH, Angal JH, et al:** Progress in second and third years of patients with quiescent pulmonary tuberculosis after a year of chemotherapy at home or in sanatorium, and influence of further chemotherapy on the relapse rate. Bull WHO 24: 149, 1961

**Eddison GG, Farmer BM:** A control study of home versus hospital treatment of tuberculosis. In preparation.

**Fox W:** The John Barnwell lecture changing concepts in the chemotherapy of pulmonary tuberculosis. Amer Rev Resp Dis 97: 767, 1968

**Kane RL, Deuschle KW:** Problems in patient-doctor communications. Med Care 5: 260, 1967

**Moodie AS:** Mass ambulatory chemotherapy in the treatment of tuberculosis in a predominantly urban community. Amer Rev Resp Dis 95: 384, 1967

**Moulding T:** New responsibilities for health departments and public health nurses in tuberculosis—keeping the outpatient on therapy. Amer J Public Health 56: 416, 1966

**Ramakrishnan LV, Andrews RH, Devadatta S, et al:** Influence of segregation of tuberculosis for one year on the attack rate of tuberculosis in a 2-year period in close family contacts in South India. Bull WHO 24: 129, 1961

**Tuberculosis Chemotherapy Center, Madras:** A concurrent comparison of home and sanatorium treatment of pulmonary tuberculosis in South India. Bull WHO 21: 51, 1959

**Vandiviere HM, Kane RL, Kavasch PI:** The tuberculosis patient's knowledge about his disease. Amer Rev Resp Dis 101: 314, 1970

**Velu S, Andrews RH, Devadatta S, et al:** Progress in the second year of patients with quiescent pulmonary tuberculosis after a year of chemotherapy at home or in sanatorium, and influence of further chemotherapy on the relapse rate. Bull WHO 23: 511, 1960

# Physician Assistants: New Positions and Expanding Roles in U.S. Medical Care

F. J. SPENCER

*Department of Preventive Medicine,*
*Medical College of Virginia,*
*Richmond 23219*

Recently in the United States there has been an increased interest in training physician assistants to help medical practitioners. The demand for medical care stimulated by news media, the lack of physicians to serve the expanding population, and the advent of specialism in medicine have all brought about this trend.

The idea of using physician assistants dates back to the seventeenth century when Peter the Great of Russia introduced to the Russian army the German military surgical assistant known as a *feldscherer* or "field barber." After their military service these Russian *feldshers* became rural medical practitioners. The feldsher still plays a prominent role in Russian medical care (Sidel, 1968). Practically all developing countries of the world have some type of medical personnel comparable to the physician assistant in their health services. These range from the literate and learned assistant medical officers of Fiji to the illiterate but perceptive aid post orderlies of New Guinea who receive instruction in pidgin English (Rosinski and Spencer, 1965; Rosinski and Spencer, 1967).

The World Health Organization (1968) defines a medical assistant as ". . . a health worker who has received an appropriate training and who, in the field of promotion, protection and restoration of health (including diagnosis and treatment of disease) has certain clearly defined duties and responsibilities. He is employed within an organized health service under the supervision and guidance of qualified physicians, to whom he must refer all difficult cases." This definition, with certain modifications, describes the physician assistant now being introduced into health services in the United States.

## Physician Assistant Programs in the United States

The programs currently established in the United States fall under two main headings based upon medical education or training.

### *Programs for Persons with Prior Medical Training*

1. Medical corpsmen. The Department of Medicine of the Duke University School of Medicine has pioneered this type of physician assistant training program. Ex-medical corpsmen with a high school degree or equivalent receive two years of training, divided into basic science study for six months and clinical practice for the remaining time. The preclinical sciences of anatomy and physiology, pathophysiology, pharmacology, animal surgery, medical equipment and instruments, patient care, and laboratory medicine are dealt with in the first six months. Clinical practice includes both working with patients in the University Hospital and with general practitioners in selected sites in North Carolina. The handful of students so far trained have been employed mainly in hospitals. The original class of four students in 1965 has now been expanded to 40 enrolees (Stead, 1966; Stead, 1967). A similar program called Medex (Medecin Extension—Physician's Extension) was initiated last year at the University of Washington in Seattle. Several other educational institutions have expressed an interest in these programs.

2. Registered nurses. The nurse-practitioner originated at the University of Colorado as a joint program of the School of Nursing and the Department of Pediatrics. In this program, registered nurses with Bachelor of Science degrees are given four months training in pediatrics, interview techniques, physical diagnosis, and out-patient department and emergency room instruction. They are then sent to field stations in rural or poverty areas for practice under supervision. Emphasis is placed on maintenance of health in the well child, occupying some 75 percent of the nurse-practitioner's duties (Silver, Ford and Stearly, 1967; American Medical Association Department of Health Manpower, 1970). A similar program exists at the Massachusetts General Hospital.



MCV QUARTERLY 6(3): 150-151, 1970

*Programs for Persons without Prior Medical Training*

The prototype of this class is a course designed for physician assistants at Alderson-Broaddus College in Philippi, West Virginia. Supported by the Commonwealth Fund, this program was set up by a committee with representation from the College, the University of West Virginia Medical Center, and the West Virginia State Medical Association. In September 1968, 28 students were enrolled in a four year course leading to a Bachelor of Science degree. The curriculum includes liberal arts, basic sciences and clinical sciences correlated where possible with the School of Nursing or other undergraduate study in the college. The duties envisaged include office management and clinical care of patients in hospital, clinic and office (Myers, 1969).

## Principles of Physician Assistant Practice

Certain principles must prevail if the role of the physician assistant is to be clearly defined in American medical practice.

1. Training. The training of the physician assistant must be designed to allow gaining of sufficient knowledge without destroying understanding of the obvious limitations imposed by lack of education.
2. Regulation of practice. Regulation may be direct, by legislation, or indirect, by limitation of equipment and supplies available to the physician assistant.
3. Supervision. Adequate and continued supervision must be provided to prevent the physician assistant from exceeding his ability or otherwise introducing undesirable elements into the practice of medicine.
4. Work satisfaction. The physician assistant must be regarded in his position as distinct—not as a second-hand doctor. The formation of an organization of physician assistants helps establish this separate identity. An association of this type, The American Association of Physician Assistants, already exists in the United States.
5. Specialism. It is possible and sometimes desirable to allow the physician assistant to specialize, with the provision that this be done under specialist supervision.

## Comments

There are now some 20 operating programs for physician assistants in the United States (Kadish and Long, 1970). Many people agree that the physician assistant is a reality and will be a component of American medicine in the future. Acceptance of the physician assistant by the medical profession has been variable but a recent survey in Wisconsin reveals that, of the physicians surveyed, 61 percent believe that a physician assistant of some type is needed and 42 percent would use him in practice (Coye and Hanson, 1969). There is, therefore, indication that the physician assistant will become an established member of the health practice team. The accompanying paper by Maurice Wood details the contributions made to his practice by a nurse physician assistant.

## References


Allied Health Personnel. A Report on Their Use in the Military Services as a Model for Use in Non-Military Health-Care Programs. National Academy of Sciences, 1969

**American Medical Association Department of Health Manpower:** The child health associate. A new training program in Colorado. JAMA 212: 1045, 1970

Can doctors' aides solve the health crisis? Medical World News January 23, 1970, p 25

**Coye RD, Hanson MF:** The "doctor's assistant." A survey of physicians' expectations. JAMA 209: 529, 1969

Extra hands for the busy doctor. Medical World News February 24, 1967, p 71

Health Manpower. Perspective: 1967. Public Health Service Department of Health Education and Welfare, 1967, p 41

**Kadish J, Long JW:** The training of physician assistants: status and issues. JAMA 212: 1047, 1970

Many physicians hire "assistant doctors" to help ease burden. Wall Street Journal April 23, 1970, p 1

**Myers HC:** A new educational program for physician's assistants. Med Times 97: 140, 1969

**Nemuth HI:** Medical manpower: the medical auxiliary. Medical College of Virginia Quarterly 2: 257, 1966

Nurses. Where doctors don't reach. Time July 22, 1966, p 71

**Rosinski EF, Spencer FJ:** The Assistant Medical Officer. The Training of the Medical Auxiliary in Developing Countries. Chapel Hill, University of North Carolina Press, 1965

**Rosinski EF, Spencer FJ:** The training and duties of the medical auxiliary known as the assistant medical officer. Amer J Public Health 57: 1663, 1967

**Sidel VW:** Feldshers and "feldsherism." New Eng J Med 278: 934, 981, 1968

**Silver HD, Ford LC, Stearly SG:** A program to increase health care for children; the pediatric nurse practitioner program. Pediatrics 39: 756, 1967

**Stead EA Jr:** Conserving costly talents—providing physicians' new assistants. JAMA 198: 1108, 1966

**Stead EA Jr:** Training and use of paramedical personnel. New Eng J Med 277: 800, 1967

Training of Medical Assistants and Similar Personnel. Geneva, World Health Organization, Technical Reports Series No. 385, 1968

# British Medical Practice—Some Recent Innovations

MAURICE WOOD

*General Practitioner,*
*South Shields, England*

This presentation might be better labelled "A worm's eye view of the National Health Service" (NHS) as it covers of necessity only a limited spectrum of that program. General practice as a discipline is infinitely variable in its application; and factors of geography, practice size, social classifications of population, and employment patterns can produce enormous differences in the details of practice organization.

My remarks must therefore be very much a personal record of one who has spent his practicing life largely in one town, located in one industrial corner of England. The National Health Service in Great Britain and Northern Ireland came into being on its "vesting day" of July 5, 1948 and any dissertation on general practice in the NHS must include a few words on the situation before that date.

## Medical Care Before NHS

The personal doctor was the hub of medical practice. By virtue of several Government insurance schemes authorized by Acts of Parliament from 1911 onward, free medical attention and medicines were available only to insured persons, ie, those gainfully employed for a minimum period of time. Those health services were not extended to their family or dependents, who were covered by various forms of private sickness funds, eg, those run by trade unions, the long established friendly societies, craftsmens' guilds, etc. These latter schemes usually restricted the choice of doctor and the range of prescriptions but provided a captive population for the practitioner. The remainder of the population was private patients paying on an item of service basis and with full freedom of choice of doctor.

The general practitioners usually had access to hospital beds and, if they wished, operative facilities in their local hospitals which were invariably endowed institutions run by voluntary contributions. These hospitals were normally visited on a part time basis by specialists from the larger regional or teaching hospitals. The local practitioners retained total clinical responsibility at all times and used these specialist services only in a consultative capacity. The general wards of all the hospitals were free to both the insured and the non-insured population and no bed or clinical fees were demanded; however, all trade union branches and local guilds made regular payments toward the upkeep of their local and regional hospitals.

Adequate numbers of private beds were available, and it was from this area that specialists drew their incomes—their services to the general wards and outpatient departments being voluntary. This system had developed slowly over the years, and it must be admitted that it was showing signs of considerable strain in 1942 when the Beveridge Plan appeared on the scene as outlined in the *Report on Social Insurance and Allied Services* prepared by Sir William Beveridge at the behest of the wartime British Government. This report identified "five giants" in the pattern of social progress: "want, disease, ignorance, squalor and idleness." It stated that a comprehensive social security should be introduced through the cooperation of the government and the voluntary efforts of private individuals.

This plan was finally given teeth by the passage of various Acts of Parliament up to 1948, including the National Health Service Act of 1946 which made medical services available to everyone without respect to insured status, age, or any other circumstances. Local executive councils made up of the representatives of the local Health Authority, the Minister of Health and the local Medical, Dental and Pharmaceutical Committees were appointed, and general medical practitioners were made responsible for the provision of personal medical services under contract with the local Executive Councils. Hospital care was planned and supervised through a system or regional Hospital Boards appointed by the Ministry of Health. Day to day administration of the hospital was carried out by hospital management committees appointed by, and responsible to, the regional boards. Preventive, auxiliary and related services in the health field, eg, home nursing and home domestic help, were made the responsibility of the local authorities.



MCV QUARTERLY 6(3): 152-158, 1970

This established the tripartite system of control which is the root cause of many of the ills of NHS medicine. Central finance for the whole system came partly from compulsory National Insurance contributions, and partly from the local authorities and the National Exchequer. The level of payment to the general practitioners in their contract with the Executive Council was negotiated between the Ministry of Health and representatives of the profession, namely the General Medical Services Committee of the British Medical Association. With some misgivings the profession accepted a capitation fee system based on the pattern set by the National Health Insurance Acts of 1911 onwards.

Thus the scene was set on July 5th, 1948. No one, whether politically or professionally oriented, had any idea of what was going to happen or what demands were about to be unleashed. There was indeed on the political side an element of euphoria in the peregrinations into the future.

The profession was in turmoil and its general practice members were still undecided about signing their Executive Council contract even 48 hours before vesting day. The majority finally had to make an undignified rush to jump on the band wagon before it disappeared round the corner; they did this to the accompaniment of much mutual slanging between the joiners and the non-joiners, and many accusations of non-professional conduct. Most of the concern lay in the pricing of the government deal to buy the goodwill of the practices, and the fact that this price tag was only available up to the vesting day—a neat device for making sure that the majority was in at the start!

### Short Comings of the NHS Act

For the first two years after July 5, 1948, all seemed much the same except that the number of practices increased as associates in large groups branched out on their own to become principals in their own right. This type of change, along with the fixing of the maximum list per principal at 3,500 patients (1,000 average family groups), effectively mopped up the extra insured patients produced by the NHS Act.

The major unexpected effect of the Act at this point was the difficulty that new entrants to general practice found in gaining a foothold. It was necessary to search far and wide, concentrating on the less favoured parts of the country, for a practice. In fact, choice was virtually limited to the industrial areas, and then the terms for an ultimate equality in partnership shares required 10 to 14 years at levels of ⅓ to ⅔ of the partnership profits—thus, in fact, increasing the cost of entry into general practice and leaving the incumbent without a saleable practice at the end of his career.

By July, 1950 practice patterns were much the same as pre-1948, except that the majority of general practitioners were now out of hospital work entirely. Specialists were now appointed full-time to the local hospitals; part-time general practice hospital appointments were being actively discouraged by the regional Hospital Boards, and, in fact, by some local specialists. Only a very few practitioners managed to keep a foot in both camps after 1953, and then only in special local circumstances and with special qualifications. In any case, by this time it was painfully obvious that the general practitioner's work load was increasing, an impression which was confirmed by statistical analysis in my own two-partner practice.

In 1950 the practice consisted of 4,000 patients, each of whom required 1.8 items of service per year; by 1952, 4,300 patients required 2.2 items of service per year; by 1955 the figures were 5,000 and 4.4 services. The increase continued until 1962, when the peak figures of 5,862 patients and 6.2 services per year were recorded—all provided by two general practitioners with two receptionists; you can imagine what this work load represented in terms of hours worked.

During the whole of this period to 1962, there were recurrent crises on the national scene, and disputes with the Ministry of Health on payment were almost continuous. Rumbles of discontent about status, work load, shortcomings of hospital departments, and the iniquities of what almost came to be regarded as the basic adversary, the patient, were almost a daily litany from one's colleagues. These were the symptoms of an underlying malaise caused by the inability of the average conscientious practitioner to do his job effectively. Doctors with full lists of 1,000 family groups found it impossible to do any more than the simplest assessment and treatment processes and, over the years, had to leave more and more to the specialist hospital teams, who potentiated this process by automatically repeating all investigations performed prior to hospital referral or admission.

The basic capitation payment, which contained some provision for practice expense, also contributed to the lowering of general practice working standards—the less money spent on running the practice, the more there was available for the practitioner and his family. There were no means to increase his income except to increase his list of patients, as 95 percent of the population was registered with the NHS. Thus, a premium was laid on inferior standards of practice in a period when there was an increasing work load with consequent increasing stress. In this context, concerned general practitioners had for some years recognized the shortcomings of the service with its increasing pressures, and had begun to postulate ways to change general practice patterns to alleviate these

undesirable features.

As early as 1953, J. S. Collings defined various forms of group practice, and rejected the total and sub-total group practices of the North American model because they diminished the general practitioner's responsibility by dividing it up between consultants. He voted for what he called "Basic Group Practice" which he defined as a ". . . working and financial association of a number of general practitioners sharing the facilities of a small medical center, caring for the whole person, for the family as a unit, providing high level diagnostic and therapeutic service with the aid of organized clerical and nursing assistance" (Collings, 1953). He suggested that the size of the unit should be two to five practitioners serving a population of 5,000 to 12,500. This type of practice should be able to provide personal medical care for up to 90 percent of the needs of the average patient.

By 1964, John Fry was asking, "Will there be a tomorrow in general practice?" and was quoting a World Health Organization Expert Committee as saying that, "The committee is strongly of the opinion that general practitioners fulfill an essential function in the medical services of all communities, since the kind of continuing and comprehensive care that they provide meets the basic needs of the individual, the family, and the community" (Fry, 1964). He further said that the loss of the general practitioner would lead to chaos, and instanced as an example the hospital outpatient departments in Sweden. The patients had free access to these, with average outpatient sessions of 100 consultations, thereby swamping the facilities which were misused and wasted without the protective screening of general practitioners.

Pinsent (1950), Crombie and Cross (1957, 1958), and MacDougall (1966) all took this basic group practice a stage further by envisaging graduate nurses with post-graduate training aiding the doctor by assuming full clinical responsibility for certain minor conditions, by acting as a screen in seeing certain categories of patients, and by undertaking selected home visits. Crombie and Cross delegated full responsibility for 16 percent of all episodes of illness in one year to their nurse. MacDougall saw the community nurse as the only practicable solution to the drastic shortage of family doctors, and Connolly (1966) agreed with this view.

### Some Solutions to the Early Problems of the NHS

By 1962, a pattern of general practice organization in the NHS began to emerge which appeared to hold some hope of relieving the stress indicated by my personal practice figures previously quoted, ie, 5,862 patients with 6.2 services per year. This pattern may be summarized under five headings:

1. The establishment of a group of about five doctors in a custom built or custom altered central office.
2. The introduction of a full-time appointment system.
3. The provision of adequate clerical and receptionist help.
4. The acquirement and training of a community nurse or "feldsher."
5. The organization of a health team concerned with the provision of all elements of medical and social care for the individual and the family, consisting of the medical and nursing members of the group working in close association with local authority staff, eg, health visitors, home nurses, midwives, children's nurses, medical and psychiatric social workers, and the School Medical Services.

In 1964, another medico-political crisis led to the threat of resignation from the NHS of 75 percent of the general practitioners who were members. This was resolved by a new General Practice Charter which altered the methods of payment in a way which partly removed the disincentive to good general practice which had existed under the simple capitation system. It is in this context, at this time, that my narrative becomes more personal.

I practice in South Shields, County Durham, a town of 108,000 people. It is an amalgamation of industry, port, and coastal resort. It lies on the south bank of the River Tyne in a wedge of land bounded by the North Sea to the east and bridgeless river mouth to the north, and is entered from the south and the west by roads which, of necessity, end in the town. The area measures about $2 \times 2 \times 4$ miles. About half of the population lives within the town, the remainder residing in post-World War II municipal housing estates to the south and west of the "Old Town." The heart of the community has remained in the Old Market Place by the river. The communication and municipal transportation services are excellent.

In April, 1964 after 18 months of planning, negotiating and building, my two-man practice joined with two well-known and well-liked single colleagues, practicing as a group from refurbished and extended premises situated in two three-story terrace houses. These premises were bought by the group and the development costs underwritten by the three senior partners for the first year, and then equally by the four partners from the second year onward. These costs were covered by a ten year group practice loan at commercial interest rates. The practice quarters, confined to the ground floor, consist of an entrance lobby, a waiting room, a reception office with fitted wall shelving for records, four consulting rooms each with a sound proofed examination room, a

laboratory, a doctors' common room, and toilets. Recently the reception area has been extended and a secretary's office added in the laboratory. The upper floors were converted into two self contained apartments for resident secretary-receptionists who provide 24 hour telephone and radio telephone coverage.

In early 1965, we extended a pre-existing limited commitment with the psychiatric department of a local hospital to acceptance of full-time responsibility for all emergency admissions seven days per week, and routine treatments on three days per week. Because of this extra responsibility, we engaged a salaried female partner in October, 1965.

### The Use of a Full-time Graduate Nurse

In March, 1965 under the auspices of the Royal College of General Practitioners, we began a study project, financed by the Ministry of Health, to establish how much of the work traditionally performed by the physician could be delegated to a full-time graduate nurse in our partnership of five doctors with 12,600 patients. The objective of the project was to involve her in a limited diagnostic field, in addition to duties of the casualty type, and excluding any form of bedside nursing. She was trained over a period of six months and introduced individually to each of the patients she would be working with by the doctor concerned with the patient's care. She consulted by appointment in her office at the same time as did the physicians, and visited patients in their homes as did they, in her own car. In the office she carried out:

1. Dressings
2. Injections—both therapeutic and immunological
3. The collection of specimens of venous blood, urine, swabs, and Pap smears
4. The preparation and maintenance of the obstetrical kit used in home deliveries
5. The care of instruments and equipment
6. The preparation for, and assistance with, minor surgical procedures

In the field of clinical assessment she was trained to undertake the routine supervision of certain types of cases selected individually by the doctor in clinical charge of the patient, eg:

1. Hypertensive patients controlled on long term therapy
2. Those patients requiring dietary supervision in such conditions as diabetes, obesity, iron deficiency anaemia, and gastro-intestinal disturbances
3. Those patients with stabilized cardiac arrhythmias
4. Those patients stabilized on long term psychotropic drugs, eg, schizophrenia, recurrent and chronic depression, epilepsy, and puerperal psychosis

The nurse obtained the current history, and after reference to the doctor's notes, she made notes of the physical data established after examination. If certain criteria laid down by the doctor in his notes were satisfied, a repeat prescription was provided. If not, the patient was referred back to the doctor as soon as possible, by house telephone if necessary. In any event, the patient was referred back after an interval recorded in the notes, varying from a few days to three months, depending on the condition under treatment. The nurse also attended the daily case conference immediately after morning office hours where she presented her problems and received her home visiting list for the day, after its preparation and discussion.

The nurse made home visits solely in her clinical capacity, attending specific cases at the discretion of the doctor in clinical charge of the patient. Some examples of her work are:

1. Visits to the chronic house-bound sick on long-term treatment
2. Follow-up visits in the case of an established diagnosis, eg, tonsillitis, acute otitis media, and in some infectious diseases and acute febrile illnesses
3. Visits to hospital discharges of all types, but mainly uncomplicated surgical procedures, eg, appendectomy, adenoidectomy, gynaecological cases, fractures, and convalescent medical cases not yet able to attend the office

She was briefed in each case with clinical details and told what to look for, or what information to seek. When reporting back either at the late afternoon office session or the next day's conference, a decision was made as to whether and when a physician's visit was necessary.

During the project all doctor's and nurse's work was classified in two categories: medical or diagnostic and administrative. Each diagnostic category was defined to maintain uniform recording. Each change of activity, from leaving the house to returning to it, was recorded by means of watches screwed to boards in the cars, and by chronostamps in the office. Two runs of one month's recording were taken before arrival of the nurse, and after her training period further recording sessions were taken at intervals over a 12 month period to cover seasonal changes in work loads. During the 12 months of the survey, the nurse worked 33 hours per week in patient contact time, eg, 2½ hours per 1,000 patients. She saw 200 patients per week, doing slightly more work in the office, and absorbed virtually all the work of the minor procedural type. She also contributed to the disposition of patients in follow-up care—especially those with chronic diseases—both in the home and in the office. Statistically, we established that the nurse enabled

us to save approximately 8 percent of the time we actually worked. The data obtained and the inferences derived from them have been published (Council of Royal College of General Practitioners, 1968).

In mid 1966 it was decided to extend the nurse's clinical role to include primary home visits and primary office consultations. Her home visits were limited to those cases in which a presumptive diagnosis could be made over the telephone, eg:

1. The differential diagnosis of various rashes in both children and adults
2. Upper respiratory tract infections, eg, acute sore throats, acute otitis media, infections, etc.

Initially, she sought a doctor's consultation unless she was presented with a text book case, but experience has, as one would expect, honed her diagnostic ability. In addition, she is occasionally required to make a home visit during office hours to assess the degree of urgency of a call. In her office her primary consultations are limited to those who arrive as "urgent" without having made an appointment. These cases average about three for each morning and afternoon session—but can easily disorganize the physician's appointment schedule if seen by him. The nurse takes a full history of the complaint and undertakes a limited routine physical examination including blood pressure, temperature, pulse, respiration and urinalysis. She records the history and physical findings in the patient's notes, and then reports by house phone to the physician concerned. He then either asks for further information or decides:

1. That the treatment and disposal may be handled over the telephone
2. That the patient should be prepared for a fuller examination which he undertakes in the nurse's consulting room on completion of his current consultation

In the 12 months from January 1st to December 31st, 1967, the nurse saw 529 patients in all categories of care. In the same period in 1968, 808 patients were seen, and in the first eight months of this present year (1969), she has already seen 1,015 patients and has now reached a work load equivalent to the average physician in our group. She has also performed 134 Pap smears since January 1, 1969. In 1968 her effort represented 22.5 percent of the total practice home visits and 13.25 percent of the total office consultations. In 1968 a reduction of physcian office consultations resulted in an average increase in consulting time per patient of one minute, raising it to 7.4 minutes per patient. There is no doubt that we are indebted to the nurse for this improvement. This average consulting time represents a range of 2.2* minutes for completing a return insurance note, to 20.8* minutes for a diagnostic history and physical examination. We see our nurse functioning as an essential member of our team—educating our patients in the concept of total family care, carried out not solely by the physician but by him and his team of trained non-medical associates. We have already added four maternity nurses, seconded permanently to our group from the Local Authority Health Department, which is still responsible for their salaries. These nurses help us run our ante-natal sessions and aid us in the few home deliveries that remain. We shortly expect a health visitor seconded from the same source. She will have responsibility for seeking out the medico-social problems of the weaker members of the community and providing supervisory help to the problem families, aided by the home or district nurses who provide bedside nursing in the case of illness in the home. These nurses, too, will serve our patients under our clinical direction. In the future, we hope to have social workers with special training in various fields, eg, geriatric, pediatric and psychiatric, working in close association with us in the office. These people will cover several medical practices of our size, will be on call by us in emergencies, and will cover a regular case load as well.

It is my feeling that we have now reached the limit of the clinical responsibility which a graduate nurse can accept with the present methods of training in the United Kingdom; and, although I realize that some changes will be necessary to adapt this sort of practice in the North American scene, I hope that what I have discussed will give you, as William Shakespeare might have put it, "Much upon to spit and spurn but much upon to think."

### Discussion Following Presentation

*QUESTION:* Were there any difficulties in acceptance of the nurse by the patients?

*WOOD:* We did expect that this would be a problem; in fact we went out of our way to cover it. We introduced the nurse personally to the patient. In other words, she went in the doctor's car on home visits and was introduced by the doctor to the patient as if she were a medical associate. We followed this procedure two or three times, explaining what she was going to do, and how she would fit into the team. Of course, the majority of patients looked upon this as an extra. They would say, "Oh, now I'm going to have a nurse visiting as well as the doctor," and were a little shocked to find that the doctor was not coming in quite so frequently. These were mainly old folk who had become used to seeing his face every four to six weeks and had saved up a host of questions, which often turned the home visit into a social visit more

* These figures represent the extremes recorded in the initial nurse investigation.

than anything. They looked upon this social aspect as an extra bonus. We had to dissuade them from this, and it did take a little doing. In the six years of this project we have only had one individual patient say, "I will not have this," and this was a psychiatric case who decided that the nurse was responsible for his divorce. Apart from this case I can honestly say that we never had any real problem, which I think is due to the fact that we took the time to get her across to patients. I should say that the major problem we met was the acceptance of our nurse by the Local Health Authority. The Local Health Authority is run by a Medical Officer of Health who employs the whole of this team of non-medical associates. They are very much aware of their position in the medical hierarchy. When we produced this hybrid ancilliary who was doing work that even the highly trained health visitors—the most highly qualified auxilliaries in England—were not doing, we expected some objection on their part to our nurse's activities. Being aware of this problem, we were very careful to go along to the Local Health Authority offices and introduce our nurse to each of the individuals with whom she would work in the patient's home, explaining to them where her area of responsibility lay and what we were hoping and trying to do. This, again, was very time consuming, however, in the end, we were quite sure that it was time well spent.

*QUESTION:* Did other nurses accept this move, or did they say you were diluting the pool of available nurses even more?

*WOOD:* When we first went into the project, we had the "queen bee" of the nursing association in England on our side. We had discussed the whole problem with her first. The Ministry of Health saw the situation as you must see it, in the context of the strain under which general practice in the NHS was working. There were not enough doctors to go around, and somehow, somewhere, some method had to be found to take some of the load from the physicians remaining in general practice. The Health Department saw the program, I think, as a way to be rid of some of their doctor responsibilities and to take some of the load from the doctors. The nurses themselves were most enthusiastic, and in addition, the nursing press gave us very good coverage. The terms of the remit for the investigation from the Ministry of Health included the need for us to seek our nurse from the pool of unemployed nurses available either in our own practices or, if necessary, outside our practices. She had to be one, who for reasons of domestic commitment, had retired from full-time or part-time nursing some time before. In other words, we were restricted to employing nurses who were not, at that time, employed by any other body. We were unable to find a suitable nurse within our practice population and had to advertise. There were a very large number of replies; we compiled a short list of six and chose her from amongst these six. In view of this, I think one can say there could be no suggestion that we were diluting the pool of available nurses.

*QUESTION:* Did you find any difficulty in determining the capacity of the nurse?

*WOOD:* The whole project developed from the widely held view that there was an area of general practice, mainly with responsibilities of a supervisory nature, which could very easily be done by a less highly trained individual than a fully qualified doctor. It was felt that these areas could be identified fairly precisely, and that with special training, it was within the capacity of a trained State Registered Nurse (with possibly casualty, surgical and medical ward experience) to undertake this supervisory responsibility. By giving this responsibility to the specially trained auxilliary, we hoped that we would have more time to do the assessment and diagnostic processes for which we, the doctors, were trained. I think this is the major point about team medicine—that one hopes to break down the elements in any work process into component parts, the work of each done by people with the right amount of training. One does not want a man who has been trained 9 or 10 years in the extremes of diagnosis to syringe ears or pare toe nails. This is a waste of his time. Each job, or each part of the job, should have an individual trained adequately for that job and that job alone. This, one hopes, would improve efficiency. This is what work-study and operational research is about.

*QUESTION:* How is she compensated?

*WOOD:* If we are speaking of financial compensation—one of her many compensations—she is paid what a graduate sister of five years experience in a hospital ward would be paid. We look upon her as our ward sister, collecting information and feeding it back to us. This is the way we arranged her rating, and she is paid around $3,000 per year. In addition, she gets superannuation benefits and the usual sort of holidays with pay. She has her own car, and we pay some of her car expenses. Apart from that, the contact with the doctors on a personal basis is what she finds to be the most tremendous compensation.

*QUESTION:* Is she paid by the System or by you?

*WOOD:* She is paid by us, by our own practice. We are then reimbursed by the System for a proportion of this, but the ceiling of this reimbursement is $1,680 per year and we get about 65 percent of that. Above this amount we receive a diminishing reimbursement which comes out of our practice expenses.

*QUESTION:* How does the nurse's income compare to the doctor's?

*WOOD:* The average general practitioner with the average list in the United Kingdom is paid at a level fixed by the Government (the Health Department in discussion with the General Medical Services Council) at about $10,000 per year, after he has paid his practice expenses. This is an arbitrary figure because practice expenses vary tremendously as, of course, do practice incomes. Our expenses, for instance, are about 10 to 15 percent higher than the average for the whole country, because we run this sort of operation.

*QUESTION:* I emigrated to the United States from the United Kingdom some years ago. Does the system of direction to a practice by the Executive Council still pertain?

*WOOD:* There is no control of that sort nowadays; in fact, I do not really remember this ever existing. To refresh your memory, the system is such that the Executive Council will advertise a practice vacancy; doctors will apply for this vacancy, and their applications are assessed by the Medical Practices Committee of this Executive Council. This committee consists usually of four to five people—two doctors, two lay members, and usually one medical chairman. They interview the candidates on the short list and decide which of them should practice in the particular area, bearing in mind the type of area and the type of candidate required. I think that you will recall that in your time there were probably 300 to 400 applications for each practice vacancy. These days have now gone. There are practices at the moment in England for which there have been no applications at all, and they need be re-advertised time and time again. The good practices in the nicer part of the country might have five or six applicants. The reason for this drop in number is simply that the G.P.'s have disappeared from the scene. Like you, my friend, the good ones have left.

*QUESTION:* How long does it take to get a chronic case into a hospital? Is there still a two to three year waiting time?

*WOOD:* Simply, no. In my area I have no difficulty at all. We have a very efficient geriatrician who has organized his unit on a flow basis. He invariably has one emergency bed available for either sex. This he holds as an absolute minimum, and my colleagues and I have no real problems in getting geriatric patients into the hospital. Sometimes the psycho-geriatric cases can be a problem. I think those of you in general practice will know what I mean by this. When they are very disturbed and obviously must go into hospital accommodation, it is then often extremely difficult to get them out again. Though there is quite a large unit in our area, we never seem to have enough beds for the psycho-geriatric patients. I think one of the reasons for this is that we are able to keep them alive so much longer now than in the past. We do not have anything like a two or three year waiting list. In an acute case it might possibly take two or three days; in an absolute emergency, I would not have to wait at all.

## References

**Collings JS:** Group practice: existing patterns and future policies. Lancet 2: 31, 1953

**Connolly MM:** The health visitor and the nurse in general practice. Practitioner 197: 159, 1966

**Council of Royal College of General Practitioners:** Reports from General Practice—The Practice Nurse. September 1968

**Crombie DL, Cross KW:** The contribution of the nurse in general practice. Brit J Prev Soc Med 11: 41, 1957

**Crombie DL, Cross KW:** The nurse in general practice. Med World 88: 524, 1958

**Fry J:** General practice to-morrow. Brit Med J 2: 1064, 1964

**MacDougall IA:** Community care. Practitioner 197: 152, 1966

**Pinsent RJFH:** The future of general practice. Lancet 1: 917, 1950

# Health Services in Australia

D. J. R. SNOW

*Department of Public Health,*
*Perth, Western Australia*

Although I am of course familiar with the broad nationwide pattern of health services in my country, I am, as a State rather than a Federal person, much better informed on the details of the health services available in my own state. Therefore, I will deal with the national scene in broad principle rather than in detail.

Before embarking upon any discussion of health services I believe it would be appropriate to consider the essential objectives of any public health administration. When the objectives are clear, the nature of the organizations which are set up to attain these objectives become much more intelligible. I have seen many statements purporting to define these objectives, but there are two which, I believe, best illustrate the approach used in Australia. The first is shown in a statement once made by your own Abraham Ribicoff, one time Secretary of the U. S. Department of Health, Education and Welfare:

> The main objects of a Public Health Administration are to keep illness from happening, to keep it from spreading if it does happen, and to keep as many people as possible as healthy as possible for as long as possible.

Australia's most distinguished medical scientist, Sir MacFarlane Burnet, once wrote in a similar vein:

> The aim of medicine in the broadest sense is to ensure that every individual from conception to death enjoys the fullest measure of health and well-being that are allowed by his genetic constitution and by the accidents of life.

These are quite profound statements because their implications extend far beyond the limited borders of infectious disease, which was originally responsible for the establishment of organized public health services. They embrace all the causes of human illness—infective, degenerative, neoplastic, mental, nutritional and even social; and *these* are the guide-lines along which both the Federal and State Health Services in Australia have developed or are developing.

First, some general description of the constitutional machinery in Australia will be necessary. Australia is what is called a commonwealth, but for practical purposes it is a federation very similar to the United States of America. It consists of six states and two territories. There is, therefore, the Federal Government (which also administers the two Territories) and the six State Governments—New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania.

Each of the seven governments, i.e., the Federal and the six State Governments, has a Minister for Health in charge of health services. Although in the past a distinguished physician has occasionally occupied one of these positions, because of his political involvement and ability, it is usual and general that all Health Ministers are laymen. Each of these Ministers controls an appropriate department. These are variously called Health Departments, Public Health Departments, Departments of Health and Welfare, and even Health Commissions or Health and Hospital Commissions.

The professional administration of these departments is entrusted to a qualified physician who might be called a Director-General, a Commissioner or a Chief Health Officer. He, in turn, is assisted by a wide range of specialist physicians; most have acquired a post-graduate qualification in public health, known in Australia as in England as the D.P.H. This is roughly comparable to the American M.P.H. and involves an entire academic year's full-time study.

## Federal Role

### *Quarantine*

The establishment of the Federal Health Service stemmed from the need to exclude dangerous infectious diseases from Australia. Diseases such as smallpox and plague were constant threats to a country newly settled by Europeans with maritime ties, and cholera was endemic in neighboring countries. There were also the less immediate but acknowledged risks of the introduction into Australia of yellow fever and louse typhus. In other words, the earliest Federal Health Service was essentially a quarantine service—established on the basis of meticulous maritime quarantine and supported by a

specially trained staff of quarantine medical officers with a chain of quarantine stations strung around the Australian coastline.

Each of these stations occupies a comparatively large area of land and is sufficiently well equipped to accommodate an entire shipload of passengers. Although they are of course not economical to maintain, they are virtually indispensable to the plan of preventing the spread of infection inadvertently brought to the shores of the country. The value of this policy is borne out by the record of these dangerous diseases in Australia.

While smallpox and plague have occasionally gained entry there has been no instance of an outbreak of these infections for over 60 years. To my knowledge, a secondary case of cholera has never occurred in Australia and yellow fever has simply never occurred. In the veterinary area the quarantine service has been instrumental in excluding rabies from the country entirely. This is something of crucial importance. One can imagine what would happen if the cunning wild-dogs or *dingoes* of Australia were infected with rabies virus which is, as you know, a disease which is inevitably fatal. The spread of rabies among the dingoes would have catastrophic consequences on the sheep industry and possibly on cattle industry as well. More recently, attention has been focussed on foot-and-mouth disease. Our veterinarians are determined to prevent the disaster of the last British epidemic being repeated in Australia. Thus, the Federal Authority's earliest responsibility was the exclusion of diseases such as these from Australia. Indeed, today this is still one of its main commitments.

*Coordination*

As the nation developed, however, the responsibilities of the Federal Health Service grew very rapidly. The need for coordination of health policy throughout the country was recognised, and machinery was accordingly set up to facilitate a regular exchange of views among health representatives from all states. A body which is now called the National Health and Medical Research Council of Australia was then formed. Although it is only an advisory body to both the Federal and State Health Ministers through their respective professional officers, it is so important and has such a dominant influence on health policies in Australia that I am compelled to describe it at some length.

This board meets twice a year and has some 18 members including the Health Chief of every state; representatives from the Australian Medical Association, the Australian Dental Association, the learned Colleges (i.e., of Physicians, Surgeons and Obstetricians), the Universities and the nursing profession; and, to ensure that the professionals remain realistic, a prominent businessman is included as well. The Chairman is Director-General of the Federal Health Service—Sir William Refshauge. He also happens to have the honour of being the current Chairman of the Executive Board of the World Health Organization.

This council is without doubt the most highly respected official health body in the land. It is respected not only by politicians, but also by those in the professions and by the public at large. Rarely is any major health decision taken by either the Federal or State Government without obtaining prior advice of this council, and over the course of many decades there has been little cause to criticise any of its recommendations.

It has three main committees: a Public Health Committee, concerned with matters of public health policy; a Medicine Committee, concerned essentially with clinical and therapeutic medicine; and a Medical Research Committee, of which the main functions are to assess the relative importance of various research projects and to recommend appropriate financial grants for these projects. In addition, it has several lesser committees such as the Epidemiology Committee, the Veterinary Public Health Committee, the Mental Health Committee, the Food Standards and Food Additives Committee, the Dental Health Committee, the Committee on Preventive Medicine in General Practice, the Medical Statistics Committee and even the Traffic Injury Committee.

Persons are appointed to these subsidiary or *expert committees* because of their specialist knowledge, rather than because of geographical or state considerations. Their fares and other expenses for meetings are met from federal funds.

The range of subjects dealt with by this council are indicated by the designations of its committees; but there are of course *ad-hoc* or other special subcommittees which are appointed, from time to time, to consider special problems such as smoking or detergents.

This vital coordinating function of the National Health and Medical Research Council at the professional level is supplemented by coordination at the political level through an annual meeting of all Health Ministers. The meeting places, like those of the Council, rotate in turn among the various capital cities. In consequence, although states, under the nation's Constitution, are responsible for public health affairs within their boundaries—and indeed are extremely jealous of their rights—nevertheless there is a very great concordance of administrative action on major health issues. Although the individual systems of administration within the states may differ, and although their methods of implementing various health programmes may vary, there is a basic uniformity of approach which ensures a fairly even standard of public health throughout the country.

*Other Responsibilities*

Apart from the responsibilities of quarantine and coordination, the Federal Health Service has been obliged to assume a number of other major responsibilities over the last 25 years.

One notable commitment has been tuberculosis control. Here, the Federal Authority provides the funds and recommends broad policy, while the states do the work. Tuberculosis has largely been controlled as a consequence of mass miniature radiography, Mantoux testing, subsidised hospital treatment, and tuberculosis allowances to offset hardship.

Immunisation programmes such as Salk (and now Sabin), triple antigen (DPT), and (presently) measles and rubella vaccination—have been, or will be, carried out under an arrangement between the Federal and State Authorities. The Federal Authority provides the material free of charge to the states, which in turn provide the organisation and meet the costs of administration.

Perhaps the most significant feature of the expanded federal role since World War II has been the advent of the Medical Benefits Scheme, the Pensioner Medical Scheme, and the Pharmaceutical Benefits Scheme. These schemes came into operation by federal enactment nearly 20 years ago. The essential principles involved are:

1. The costs of drugs, medical treatment and hospitalization are subsidised by the Federal Government.
2. Individuals and families are encouraged to insure against illness with various benefit funds or insurance agencies in order to supplement the federal subsidy.
3. Individual pharmaceutical preparations (included in an approved list and prescribed by a physician) are obtainable at a net cost of 50 cents to the patient.

The effect of this type of system is that freedom of choice of the doctor is preserved by the patient and the financial burden of ill-health is dispelled.

There are a number of other services provided by the Federal Health Authority such as specialised laboratories, medical and health services to the two Territories, and the maintenance of the only School of Public Health and Tropical Medicine in Australia. However the services I have previously mentioned are perhaps the most important ones, especially when looked at through the eyes of a State Health Administrator.

*State Role*

In discussing the general state component of Australia's health services, I shall deal particularly with the health service of Western Australia because, as I inferred earlier, although no one state service is the exact mirror-image of another, the broad pattern is similar. Thus, what might be said about Western Australia could, with reservations, apply to the type of service provided in all states.

The reservations I mentioned might tend to be somewhat Texan in character but this is rather difficult to avoid when one is conscious of the fact that Western Australia is about eight times the size of the United Kingdom, three times the size of Texas, grows the tallest trees and the hardest timber in Australia, produces wild flowers of unexcelled beauty, has nearly the best wool and wheat, has sired some of the fastest milers (Herb Elliot) and swimmers (Garry Agnew) and even billiard players (Bob Marshall) in the world, and is on the eve of becoming perhaps the largest source of high-grade iron ore and nickel ore in the world. There are of course a few disadvantages (such as the pestiferous bush fly or *musca sorbens,* some desert, rather too much litter and one or two other *minor* problems) but this is no time to dwell on such matters.

*Immunisation*

The fact is that Western Australia has the best polio vaccination record of any other comparable community. Diphtheria and whooping cough are virtually unknown and tetanus is very rare. You may be interested in the system that underlies this achievement. Quite simply it is based on the principle of taking a free service to the child by means of itinerant mobile clinics to supplement the proportion of private immunisations carried out by family doctors.

More than half of Western Australia's population is concentrated in and around Perth (the place that American news media were kind enough to label "The City of Light" because everyone turned their lights on as a neighbourly gesture to John Glenn on his first orbit). The remainder of the population, however, is scattered over a multitude of small towns and settlements, some without doctors, and a regular visiting service is essential if the maximum levels of immunity are to be sustained.

At any rate, the fact is that some 50 percent of immunisations are conducted by private practitioners and the other 50 percent by State Health Service officers. In other words, both private and official agencies contribute to the maintenance of child health in a spirit of partnership rather than competition.

*Infant and Child Health*

An extension of this principle applies in the broader area of infant and child health generally. The Health Department's Infant Health Nursing Service with its network of Infant Health Centres cooperates closely with family doctors and with the University Department of Child Health, in ensuring that deviations

from normal are detected early and remedied promptly.

The approach to the control of maternal mortality may be of special interest because it was patterned on the Minnesota system some ten years ago and has worked well in practice. By statute, any maternal death must be reported immediately to the Health Commissioner. A specialist obstetrician, invariably from the University department of obstetrics, is empowered to investigate all the circumstances in detail. He prepares a summary of the salient features, omitting all reference to names, dates and places. His summary is presented to and considered by a panel of experts legally constituted as a committee, with specific specialists coopted where necessary.

This committee determines the cause of the death and endeavours to identify avoidable factors if any. The chairman, normally a professor of obstetrics, who is the only person other than the Health Commissioner entitled by law to know the names involved, communicates confidentially to the doctor concerned with the intention of helping him to avoid any similar errors of judgement in the future. In other words, the essential approach is educative rather than punitive. Because this is so, answers to the investigator's questions are perfectly frank and uninhibited by the spectre of legal action; and there is whole-hearted cooperation and support from the medical profession at large.

*Welfare of the Aged*

We are closely involved with promoting the welfare of the aged and with ensuring that they remain independent or semi-independent for as long as possible. There is a voluntary agency, known as *The Meals on Wheels Organisation,* with which the Health Commissioner is associated and which receives some financial assistance from the State Government. With the aid of honorary voluntary drivers, using their own cars, a balanced hot meal is delivered once a day, for a nominal fee, to the home of any aged person who needs it. Another voluntary agency assisted by the State provides a home nursing service.

The Federal Government's Pensioner Medical Service enables pensioners to receive free medical attention from private doctors. However, the State Health Department maintains a geriatric service headed by a senior specialist in internal medicine who holds a University appointment as well. He and his aides provide a consultative service to general practitioners and to the major hospitals, and they are medically responsible for the surveillance of old people within Perth's two main institutions for the aged. One of these is most appropriately named *Sunset.*

One of the comparatively recent developments has been the growing number of *cottage groups* that have been established for the aged by religious organisations of many denominations. Capital costs are subsidised both by the Federal and State Authorities, and units are usually sold to appropriate applicants on a life-time-lease arrangement.

*Health Education*

We recognise health education as an indispensable aid in achieving the voluntary cooperation of the public, and we recognise its support for various health measures. Accordingly we have an organisation called the State Health Education Council, which operates under statute and receives a substantial grant to finance its activities. Apart from a secretariat including full-time health educators, it comprises some 17 honorary members drawn from professional associations, from various influential citizens' organisations, and from the several news organisations. In this way an adequate number of pipe-lines for the dissemination of information are maintained.

Short courses in health education are conducted, for groups such as the Red Cross and for interested individuals, so that the pool of potential field workers can be expanded. Special instruction is offered to teacher-trainees and to nurses. We have found health education, implemented in this way, to be extremely helpful in promoting immunisation programmes, the acceptance of fluoridation, the understanding of venereal disease, better food handling, insect control and many other projects. Although there is a level of routine commitments, it has been customary to expend a major effort for a limited time on some specific project. At the present an intensive drug education programme is under way. Although this problem has not yet reached major proportions in our part of the country, we feel that young people should be informed of the nature, effects and dangers of drugs.

Apart from general health education, education for safety is carried out by an organisation known as the National Safety Council. It has four divisions concerned respectively with road safety, industrial safety, home safety and water safety. Officers of the Health Service are associated with this organisation and are particularly active in the field of home safety.

Other areas of public education which are rapidly being developed are cancer education, dental health education and mental health education.

*Other State Responsibilities*

Other potential health problems which I have not yet mentioned are those relative to drinking water supplies, the disposal of refuse, clean air and the control of radioactive substances, pesticides, and therapeutic "poisons."

So far as water is concerned the State Health Service has little direct responsibility, other than to ensure of course that these supplies are safe. The collection, treatment and supply of potable water is

the responsibility of two other major government agencies; but a close liaison exists with the Health Service and the results of the regular routine chemical and bacteriological tests are kept under surveillance by a committee comprising health officers, engineers, chemists and other specialists.

Radioactive substances, clear air, pesticides and poisons are all overseen by the State Health Authority either under specific statutes or regulations promulgated under the Health Act. In essence, they involve the usual system of licensing, permits and inspections and would only be of passing interest to you.

### Flying Doctor Service

I have no intention, nor would there be sufficient space here, to describe the nature of the services in Western Australia that have to do with curative medicine; but there is at least one service in which people in many parts of the world are interested. I refer to the Flying Doctor Service. This is, in effect, a service organized and maintained by an association of private citizens. It is financed partly by public subscription, partly by the various governments, and partly through regular subscriptions from members.

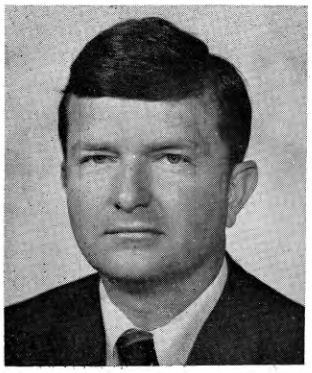
In my state the Flying Doctor agency provides the light aircraft required and employs trained pilots and radio operators, but the State Health Service provides the doctors. The latter are government salaried medical officers based on several towns along our North West Coast, and the radio bases are usually located at or very close to the hospitals where these doctors work.

Each Flying Doctor network comprises a radio base associated with a doctor and a hospital and serves an area of up to 200 miles in radius. There may be some 30 or more "subscribers" dispersed over a wide, sparsely populated area. Each of these subscribers is equipped with a standard radio transceiver and a Flying Doctor medicine chest containing most of the drugs and dressings likely to be required in medical or surgical emergencies. The network is also used for the transmission of private messages and telegrams; at least two regular daily radio sessions are set aside for this purpose. Emergency calls can, of course, be made at any time.

When a doctor is called to the base he is confronted with the task of, in effect, making a diagnosis by telephone. His task is, however, assisted by the use of a chart which divides the human body into a number of designated segments. This, together with a description of the symptoms, enables him to make a fair assessment of the location, intensity and nature of the disorder. Having made a provisional diagnosis he may decide to do one of three things.

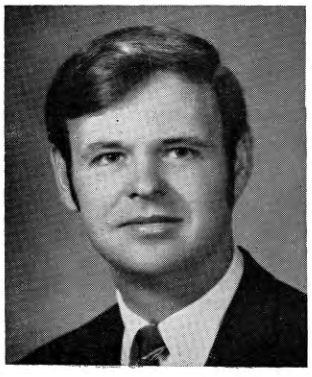
First, he may decide to leave the patient where he is and recommend the administration of one of the numbered preparations in the medicine chest. Second, he might decide to send a plane out to collect the patient and bring him into hospital. Finally, he might decide to go out himself with the plane, render whatever emergency medical aid may be called for, and accompany the patient back to the hospital base.

This service is extremely popular and provides a vital link between cattle stations, sheep stations, missions and other isolated settlements in what can be a fairly harsh environment commonly known as the *Outback*. Although the function of this service is primarily to provide emergency treatment, it is occasionally used for preventive purposes such as scheduled immunisation programmes or infant welfare purposes.



# Contributors

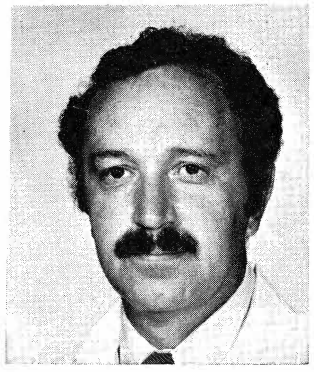
**Charles L. Baird, Jr.** *(Pre-Hospital Management of Acute Myocardial Infarction)* was graduated from the Medical College of Virginia where he also did his internship and residency in medicine. After completing a cardiovascular fellowship at the Cleveland Clinic he served as clinical instructor at the University of California, the University of North Carolina, and the Duke University Medical Center in Durham, North Carolina where he was also director of medical education at Watts Hospital. In 1965 Dr. Baird returned to the Medical College of Virginia and is now assistant professor of medicine.



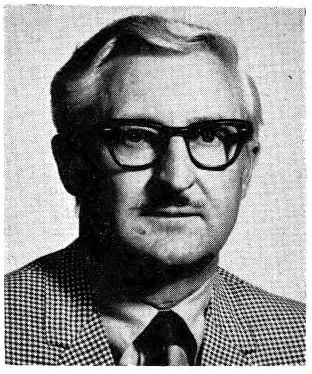
**George M. Bright** *(Drug Abuse in Our Community),* director of adolescent medicine and assistant professor of pediatrics at the Medical College of Virginia, received his M.D. from the University of Texas Southwestern Medical School, Dallas. Completing his internship at the University of Arkansas, he was a resident in pediatrics at Children's and Parkland Memorial Hospitals in Dallas and the University of Arkansas Medical Center. Dr. Bright was a fellow in adolescent medicine at the Harvard Medical School, then was an assistant in the health service of Tufts University. His current professional interests include drug abuse, sex education and other problems of adolescents.

**Grace G. Eddison** *(The Development of a Comprehensive Health Care Program for Patients with Active Tuberculosis)* is associate director of the evaluation unit of the department of community health, and assistant professor of medicine at Albert Einstein College of Medicine, Bronx, New York. Dr. Eddison took her undergraduate education at Wellesley and her M.D. from Columbia. She later trained at Bellevue and Bronx Municipal Hospitals, and was, until recently, director of the Van Etten Home Care Program.

**Barbara M. Farmer** *(The Development of a Comprehensive Health Care Program for Patients with Active Tuberculosis)* is an instructor in the department of community health at Albert Einstein College of Medicine in New York City. She graduated from New Jersey State Teachers College with a B.S. certified to teach the handicapped, then received her M.S. from the Columbia School of Social Work. Miss Farmer worked extensively with retarded children and in rehabilitation programs before coming to Albert Einstein College. Before taking her present position, she was assistant director of the Van Etten Home Care Program.



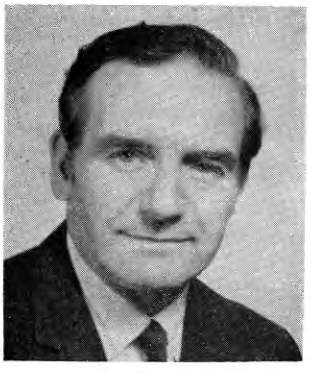
**Gabriel Hilkovitz** *(Current Trends and Issues in Emergency Medical Care)* received his medical education at the University of the Witwatersrand, Johannesburg, South Africa. He interned and took part of his residency training at the Johannesburg General Hospital, and completed his hospital training in internal medicine at Queen Mary's, Greenwhich, and University College hospitals in London, England. He came to the Medical College of Virginia in 1958 as a research fellow in hematology and is now associate professor of medicine and director of ambulatory services.



**Robert W. Jessee** *(Multiphasic Health Screening)* is professor of preventive medicine at the Medical College of Virginia. He received a M.D. degree from the University of Tennessee and a Master of Public Health from Johns Hopkins University. Before coming to MCV, Dr. Jessee was director of the division of local health services of the Virginia State Department of Health.

**D. J. R. Snow** *(Health Services in Australia)* is Deputy Commissioner of Health and director of the division of epidemiology in the department of public health in Perth, Western Australia. He also holds the office of vice-president of the Public Health Association of Australia. Dr. Snow did postgraduate work in the department of public health at the University of Sydney and qualified at Guy's Hospital in London. He served with the Flying Doctors Service in Western Australia.

**F. J. Spencer** *(Physician Assistants: New Positions and Expanding Roles in U. S. Medical Care)* a native of Newcastle-on-Tyne, England, received his medical degree from the University of Durham, England, and took his hospital training at Dryburn Hospital. After serving in the British Army, Dr. Spencer did general practice in England, Canada and the U. S., and then received a Master of Public Health degree from Harvard. Before coming to MCV in 1964 as professor and chairman of the department of preventive medicine, Dr. Spencer had been with the Virginia State Department of Health.

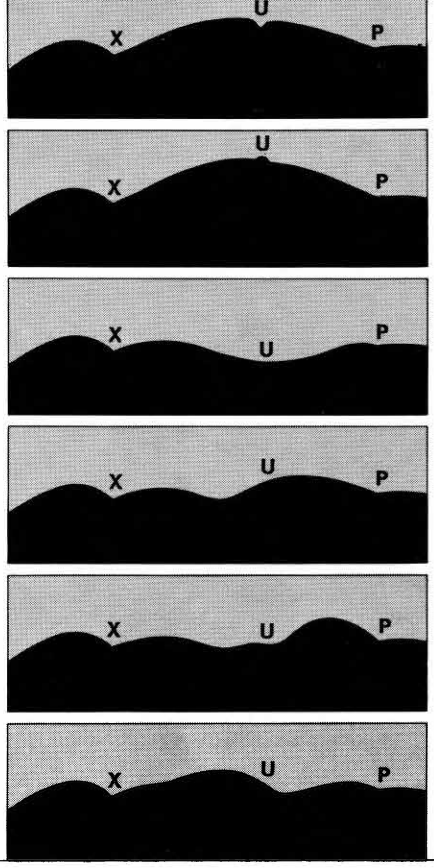


**Maurice Wood** *(British Medical Practice—Some Recent Innovations),* born in County Durham, England, studied medicine at the Medical School, Durham University and completed his medical internship at Newcastle General Hospital and surgical internship at Sunderland Royal Infirmary. After serving in the military, he was surgical registrar at Sunderland Royal Infirmary until he entered practice in South Shields in 1950. He has remained there in family practice and is now a member of a small group of doctors in partnership.

## Excerpt from Part 1, *Inspection* ►

### Abdominal profiles

Careful inspection of the profile of the abdomen from the side may give the first clue of abnormality, directing attention to a specific region and prompting a search for further signs. While distinction begins with visual inspection, palpation, percussion and auscultation are required to make an accurate differential diagnosis.




generalized distention, with umbilicus inverted: obesity or recent distention from gas, etc.

generalized distention, with umbilicus everted: chronic ascites, tumor, or umbilical hernia

scaphoid abdomen, from malnourishment

distention of lower half: ovarian tumor, pregnancy, bladder

distention of lower third: ovarian tumor, uterine fibroids, pregnancy, bladder

distention of upper half: carcinomatosis, pancreatic cyst, gastric dilation

X = Xiphoid
U = Umbilicus
P = Pubis

Adapted from DeGowin, E. L., Bedside Diagnostic Examination, New York, The Macmillan Co., 1967.

---

**The stress-spasm syndrome and the "Donnatal Effect."**
Donnatal provides a predictable, inexpensive way to help the patient who responds to stress situations with gastrointestinal or other smooth-muscle spasm. The characteristic over-all effect of Donnatal achieves two essential objectives: calming the patient, pacifying the gut. Outstanding in effectiveness, safety, economy, uniformity of composition and dosage convenience, Donnatal continues to be prescribed by more physicians than any other agent in its class.

**The Donnatal "spectrum" of usefulness.**
Particularly useful when anxiety and tension accompany, aggravate or account for smooth muscle spasm, Donnatal is indicated for the symptomatic relief of recurring, persistent or chronic visceral spasm, as in gastritis, pylorospasm, esophageal spasm, irritable stomach and colon, nervous indigestion, duodenal or gastric ulcer. Donnatal is also indicated in dysmenorrhea, nausea, motion sickness and nocturnal enuresis. Since Donnatal helps reduce gastric hypersecretion, it is useful in hyperchlorhydria, peptic ulcer and other conditions mentioned above.

For spasm reactors—young and old alike—Donnatal is an ideal choice to control the syndrome—safely, simply and effectively.

**Brief summary:** Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.