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HEALTH: BIG BUSINESS

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COMPUTER PEOPLE FOR PEACE
THE DOLPHIN CENTER
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COMPUTERS

"Health is no more a priority of the American health industry than safe, cheap, efficient, pollution-free transportation is a priority of the American automobile industry."

from The AMERICAN HEALTH EMPIRE, a Health-PAC report

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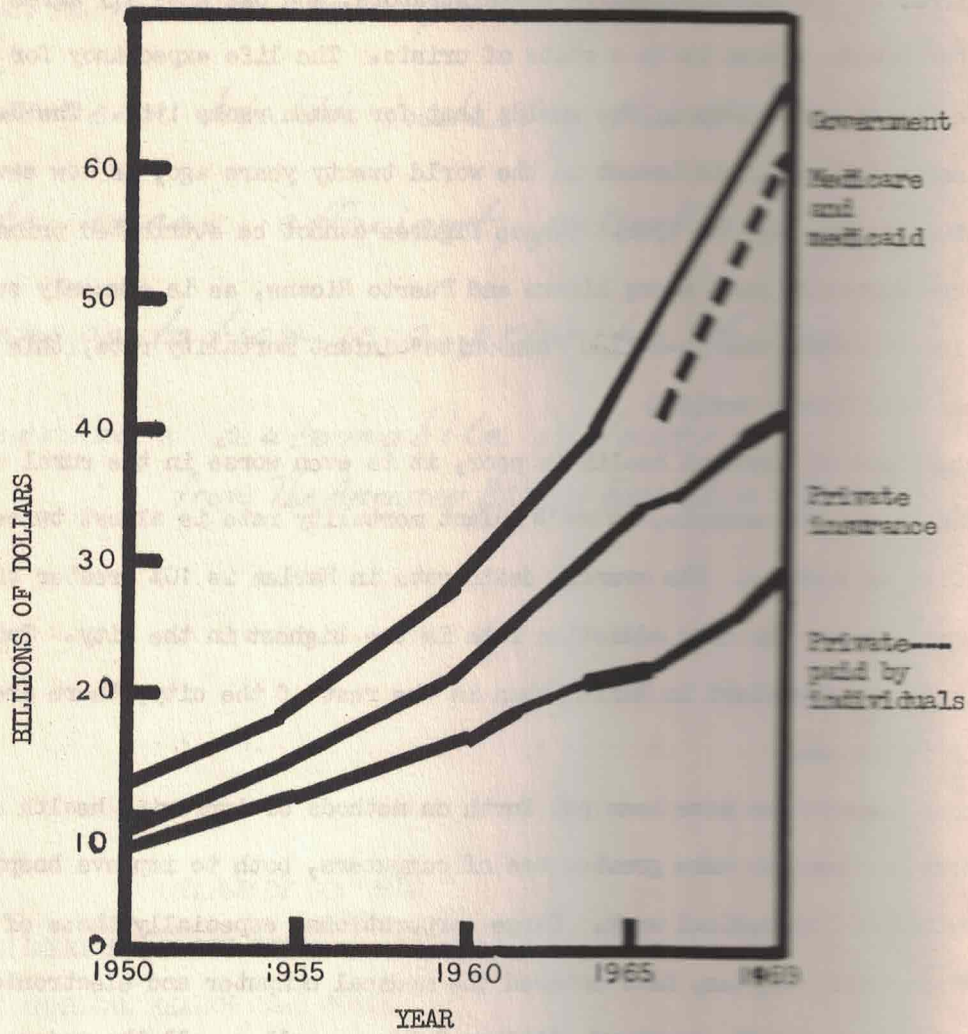
I. THE AMERICAN HEALTH CRISIS

Presidential commissions, health administrators, and patients all agree that the American health system is in a state of crisis. The life expectancy for men in the United States ranks 18th in the world; that for women ranks 11th. The U.S. maternal mortality rate, the lowest in the world twenty years ago, is now seventh. The infant mortality rate is 13th. (These figures cannot be attributed primarily to the large mortality rate among blacks and Puerto Ricans, as is commonly supposed. For example, excluding the so-called "non-white" infant mortality rate, this country still ranks 10th in the world.)

report
If the state of national health is poor, it is even worse in the rural areas and the urban ghetto. For example, Harlem's infant mortality rate is almost twice that of New York City as a whole. The overall death rate in Harlem is 10% greater than that for the entire city; the drug addiction rate is the highest in the city. Tuberculosis is 3.5 times more prevalent in Harlem than in the rest of the city; there are 75,000 alcoholics in Harlem.

Various suggestions have been put forth on methods of improving health care. One of these has been to make greater use of computers, both to improve hospital efficiency and aid in medical work. Large corporations, especially those of the military-industrial complex, have entered the medical computer and electronics field, including United Aircraft, Lockheed, Litton, G.E., as well as all the major computer companies. By 1969, the medical computer and electronics market was estimated to be almost one-half billion dollars per year.

Does the entrance of military industries in the health field represent a shift of national priorities from military to domestic needs? Have these corporations developed a social conscience, in response to domestic unrest and anti-war feeling in the country? The answer to both these questions is "No." What is happening is an effort by large military-related industries, swollen from the large armaments programs of the last 20 years and burdened with high cost, high technology products, to find, as military funding levels off, new sources for profit and investment in the developing \$63 billion health industry.



Who pays the nation's health bill ?
from Reference 5

In so doing, they are not helping to bring to a halt the crisis in American medical care, but rather fueling it further. For the American health system has long suffered from the distortions in medical care brought on by its profit-seeking elements--the drug companies, the hospital supply and equipment companies (which are themselves expanding into medical electronics and computers), and of course, the private doctor. In joining cause with the so-called medical-industrial complex, the erstwhile members of the military-industrial complex are working on familiar economic terrain--that of public funding through government and other third-party agencies (e.g., Blue Cross) under conditions of minimal public scrutiny, resulting both in serious inefficiency and high profits.

The introduction of vast new sums of money or new technologies won't rescue the American health system from its present state of ill-health unless the roots of the present crisis are exposed and new efforts are made to relieve them. Scientists and technologists entering the medical field can only wander about aimlessly or else be pawns of those who determine the priorities of the system unless they develop an understanding of the field as they participate in it.

Recently, community and consumer oriented health groups such as the Health Policy Advisory Center (Health-PAC) and the Medical Committee for Human Rights have begun a systematic analysis of American health care. They conclude that the care and treatment of individual patients is not the first priority of the system, as would be expected, but instead the main priorities are profitmaking, research and education, followed by patient care.

A discussion of this inverted set of priorities and how it came to be will be presented in Part II of this article. Part III will examine present uses of computers in medicine, and how they serve to reinforce the priorities of the present, inadequate health system. Finally Part IV will outline proposals for alternatives to the present health system and how computers might be used in conjunction with them.

II. THE AMERICAN HEALTH CARE SYSTEM

"Most people who have set out to look for medical care eventually have to conclude that there is no American medical system - at least there is no systematic way in America of getting medical help when you need it, without being financially ruined, humiliated, or injured in the process. What system there is - three hundred thousand doctors, seven thousand hospitals and supporting insurance plans - was clearly not designed to deal with the sick. In fact, the one thing you need most in order to qualify for care financially and to survive the process of obtaining it is health, plus, of course, a good deal of cunning and resourcefulness."
(from The American Health Empire, a Health-PAC report)

Since the Second World War, the Industrial Revolution has come to the American health system. In that time, it has changed from a cottage industry, dominated by individual private doctors, to a modern corporate structure, represented by university-related medical centers. For example, before World War II, most of the medical dollar went to the doctor; today, hospitals receive 44% of that dollar, and private doctors only 22% (9).

The reasons for this are found in two parallel developments that took place about the time of World War II--the growth of Blue Cross hospital insurance plans and major advances in biomedical technology. Blue Cross was organized by hospitals during the 1930's depression to secure them a guaranteed financial base. It quickly became not only a steady, but an abundant, source of income for these institutions. Because it was run largely by and for the hospitals with few government controls, Blue Cross represented a blank check to the hospitals. They were able to enlarge their staffs, engage in major new construction, and purchase expensive equipment, regardless of the impact of these "improvements" on patient care, and then pass the costs on to the consumer through increased Blue Cross premiums. Under these circumstances, a natural alliance sprung up between hospital administrators, who wanted their institutions to grow and large computer, equipment and drug companies, which sold to hospitals.

The dynamic of this system was continued growth. The more hospitals grew the more money they had available for expensive equipment and research facilities,

the more easily they could attract the best staff and medical students, the more prestigious they became, the more funds they could attract, and so on. One of the results of this was the development of large complexes of smaller hospitals and health centers affiliated with a single medical school or center which provided professional staff in return for access to teaching & research opportunities. These can only be called medical empires.

Another result was that the priorities of the health system became the priorities of these empires: research, education, and profit-making first, followed finally by patient care.

Consider profit-making by the U.S. health industry: about \$63 billion was spent in 1969 on health care in the U.S. The total market for medical technology alone is estimated to be nearly half a billion dollars a year (5). Industries servicing the health system have been among the most profitable in the U.S. For example, in 1969, U.S. drug companies had after tax profits of \$600 million, hospital supply companies \$400 million. The American Hospital Supply Company, the largest in this area, has had its earnings grow at 16% per year for the last decade. No wonder the investment firm of Goodbody and Company advised its customers, in 1969, "Steady growth of the health industry is about as certain as anything can be." (1)

Research is another important priority of the medical system. Whatever success means to the individual scientist, to the institution it means enhanced prestige, perhaps national publicity (hence easier recruitment of staff and students), and more funds. The sums of money involved are quite large; last year \$2 billion was given to the medical system for research, almost all by the federal government (5). While some of this research has resulted in improved patient care, its importance has vastly overshadowed that of patient care.

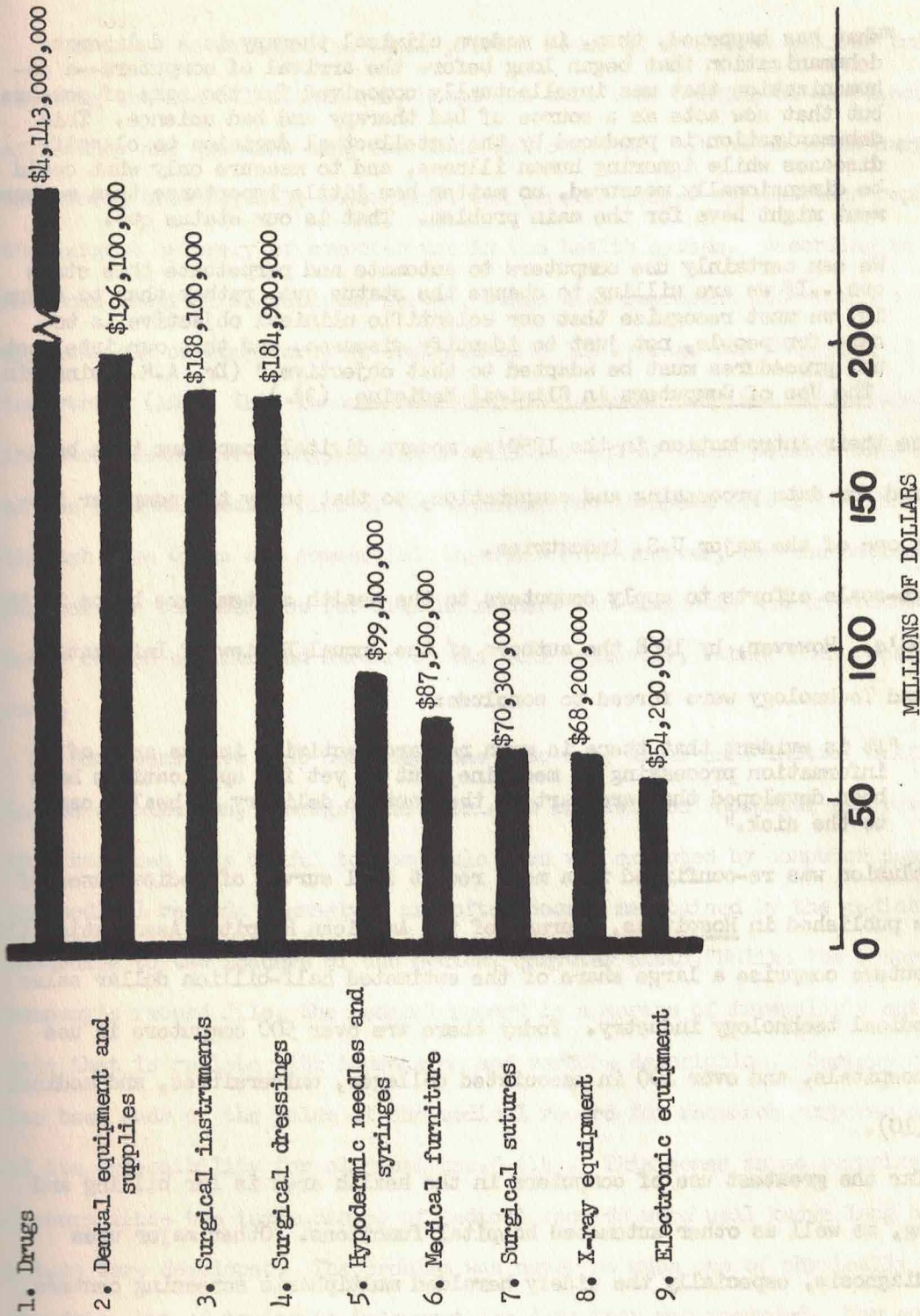
Finally, education (that is, the reproduction of its own personnel) is a priority for the health system, one that is increasingly important for its own sake, often at the expense of patient care. Medical schools have recently been channelling more of their students into specialty practice, and encouraging re-

search in the specialty area before and after graduation. Although this may bring prestige to the school, it also increases the education time for doctors, when there are already too few of them. Worse yet, over one-third of all medical school graduates do not even practice medicine (5), many of them going into teaching, research, and hospital administration--priority areas under the present health system.

Under these circumstances patient care, instead of being supported by research and education, is placed in service to them. Those too poor to pay a private physician find that the only care available is that provided by the hospital clinic, where in return for care they yield themselves as teaching and research subjects. The care a poor person will get if he or she has an exotic or "medically interesting" disease will be excellent. However, the patient can expect little for the vast majority of ordinary maladies he or she will suffer.

Furthermore, as opposed to other interest groups in the system, patients are not organized, and thus have no leverage to change priorities. The number of hospital beds is limited (often by Blue Cross, to keep its total liability for hospital costs down, since you can't hospitalize more people than you have beds for). As a result the hospital beds are almost always filled, and Blue Cross always pays the bills. Thus the quality of patient care, within limits, does not affect hospital income or growth. Under this circumstance, what is the chance that, subject to many pressures, the doctor is going to expend great energy on the mundane illnesses of ordinary patients? What is the chance near Harlem, where community groups have determined their greatest health problems to be drug addiction, alcoholism and mental health(11), that a doctor with the health system's values would consider the treatment of an alcoholic or drug addict a matter of great import? Not much chance.

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Breakdown of the medical market by components in 1967.
from Reference 5

III. COMPUTER APPLICATIONS IN THE AMERICAN HEALTH SYSTEM

"What has happened, then, in modern clinical therapy is a deliberate dehumanization that began long before the arrival of computers--a dehumanization that was intellectually conceived for the sake of science, but that now acts as a source of bad therapy and bad science. This dehumanization is produced by the intellectual decision to classify diseases while ignoring human illness, and to measure only what could be dimensionally measured, no matter how little importance that measurement might have for the main problem. That is our status quo.

We can certainly use computers to automate and perpetuate this status quo...If we are willing to change the status quo, rather than to adorn it, we must recognize that our scientific clinical objective is to care for people, not just to identify diseases, and that our intellectual procedures must be adapted to that objective." (Dr. A.R. Weinstein in The Use of Computers in Clinical Medicine (3).)

Since their introduction in the 1950's, modern digital computers have been widely used for data processing and computation, so that today the computer industry is one of the major U.S. industries.

Large-scale efforts to apply computers to the health system were begun in the early 1960's. However, by 1968 the authors of the Annual Review of Information Science and Technology were forced to conclude:

"It is evident that there is much research activity in the area of information processing in medicine, but as yet few applications have been developed that are part of the routine delivery of health care to the sick."

This conclusion was re-confirmed in a more recent 1971 survey of medical uses of computers published in Hospitals, Journal of the American Hospital Association (10).

Computers comprise a large share of the estimated half-billion dollar sales of the medical technology industry. Today there are over 500 computers in use in U.S. hospitals, and over 100 in associated colleges, universities, and medical schools (10).

By far the greatest use of computers in the health area is for billing and accounting, as well as other automated hospital functions. Other major uses include diagnosis, especially the widely heralded multiphasic screening centers, and biomedical research. A discussion of these computer uses, the associated technical and social problems, and how they reinforce the present priorities of the health system, follows.

A. Billing and other Automated Hospital Functions

In order to rationalize their present modes of operation without fundamentally altering the medical status quo, hospitals have been turning to computers to improve efficiency and get more bang for their medical buck. It comes as no surprise, therefore, that payroll, accounting, and general ledger applications represent the largest category of computer use in the health system. According to the 1971 American Hospital Association survey, these uses represent 46% of all medical applications of computers, as compared to a 32% average for such uses in other industries (10)! This is most important in terms of hospital needs, since despite increased federal funding, patients still pay out of their pockets some \$26 billion of the national health bill of \$63 billion, not to speak of \$11 billion indirectly through Blue Cross and commercial insurance(5). However, for the patient, the emphasis on computer use for billing rather than diagnosis and treatment results in being chased earlier and harder by the bill collector, rather than receiving better care.

Computers have also commonly come into use, after some initial difficulties, in the compilation, storage, and retrieval of patients' hospital records. However, this has been less useful to hospitals than was expected by computer people since the medical records themselves are often poorly maintained by the medical staff. According to two leaders of the medical computer field, "Unlike the insurance company's record file, the medical record is a morass of irregularly entered 'soft' data that is replete with impression and verbose description. Serious criticism has been made of the value of the medical record for research purposes as well as of its accessibility for clinical use." (14). This comes as no surprise to many doctors since the inadequacies of medical records were well known long before computers were developed. The problem was never so much one of physically retrieving the data, but of trying to interpret the data that was recorded. Now computers have rationalized the system of record retrieval, but of course, they put out no better information than went in.

COMPUTERS AND HOSPITAL APPLICATIONS

| APPLICATIONS | NUMBER OF COMPUTERS USED |
|---|--------------------------|
| Hospital patient billing | 213 |
| Payroll computation and payment | 167 |
| Accounting (including receivables, payables) | 150 |
| General applications | 125 |
| Clinical research, information, statistics and analysis | 73 |
| Revenue and expense accounting | 60 |
| Supply inventory and accounting | 48 |
| Hospital patient records | 42 |
| General ledger accounting | 30 |
| Inventory control | 28 |
| Educational institutions | 24 |
| Billing and invoicing | 22 |
| Research | 19 |
| Medicine and physiology | 14 |
| General business | 11 |
| General science and engineering | 10 |
| Diagnosis, treatment; including on-line information | 10 |
| Medical data and tests: analysis | 4 |
| Computer-assisted instruction | 4 |
| Statistical analysis of clinical data | 3 |

from Reference 10
(Jan. 1971)

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Much work has also gone into establishing so-called total hospital information system. This is especially important for large institutions, such as the U.S. Veteran's Administration Hospital System, which in 1966 operated 165 hospitals and 202 outpatient clinics throughout the country, employing 136,000 people with a budget of \$1.26 billion dollars. The goals of these systems are to save staff time by automated record-keeping and communications, and improved scheduling of diagnostic and therapeutic procedures. This would result in monitoring patients' locations and medical records, hospital bed status, planning diets, scheduling diagnostic radiology procedures, etc. The V. A. began its efforts in this area in 1960, did a systems analysis of its facilities, and defined eleven major hospital subsystems. By 1969, nine years later, only two of these subsystems were operational (2). The technical problems encountered and the progress was typical of similar smaller operations elsewhere. Even when these technical problems are solved however, they will finally result in an increased hospital efficiency, perhaps of as much as 10% or 20%. But as a result the costs of running the hospital system probably won't go down. For in the past the savings due to increased efficiency have usually been eaten up as profits, by the profit-making sectors of the health system, or through increased expansion of staff and facilities, by the "non-profit" hospitals and medical schools.

Finally in this discussion of automated hospital functions, attention should be given to medical data banks as an obvious extension of automated data collection and retrieval within hospitals. Certainly if there is any use of computers that is potentially good from most people's points of view, this is the one. For example in a patient-oriented medical system which emphasizes bringing medical care into the home and community through a series of neighborhood medical centers, a local computer terminal connected through telephone lines to a central regional or national computer could bring a patient's entire medical record to the community medical worker in a matter of minutes. Also in case of emergency away from home, a patient's medical history could be available to local doctors almost immediately.

Unfortunately, in the world in which we live, as opposed to the one we are struggling to build, medical data banks also pose a serious threat to the individual citizen. Many Americans sense, correctly, that the government is much more responsive to the needs of the rich and powerful, the corporations and banks, than to the individual citizen. They know that information collected by government agencies is ultimately accessible to representatives of large institutions, no matter what safeguards are supposedly built into the system. Thus they know that potential employers may not hire them on the basis of outdated or irrelevant medical information, insurance companies may refuse them coverage unfairly, business or political antagonists may use medical information to embarrass or smear them, etc. They also know that the building of data banks in any new area will only feed the present, dangerous trend of establishing data banks affecting all areas of personal experience, and help further give the government control over each citizen. Thus it is to be expected that community and more socially conscious professional groups will oppose the establishment of medical data banks until the society is radically restructured and the values embodied by the government deserve respect and support.

DISTRIBUTION OF COMPUTERS IN THE U.S. HEALTH INDUSTRY

| Type of Industry | Number of Facilities | Number of Computers |
|---|----------------------|---------------------|
| Medical manufacturing, wholesale and retail trade | 302 | 465 |
| Accident and health insurance | 83 | 194 |
| Offices of physicians and surgeons | 1 | 1 |
| Hospitals | 420 | 568 |
| Colleges, universities and professional schools | 62 | 111 |
| Medical not-for-profit organizations | 9 | 13 |
| Other Medical | 17 | 31 |
| TOTALS | 894 | 1383 |

from Reference 10
(Jan. 1971)

B. Diagnosis and Multiphasic Screening

While 46% of all computer applications in the health system relate to billing and accounting, only 19% of their applications "could possibly be construed" as related to research or to patient care. "This represents a lower proportion of special applications than is found in any major industry." (10)

Of this 19%, some smaller fraction is directed toward diagnosis and multiphasic screening. However, this fraction is clearly increasing, given the interest in multiphasic screening centers as new initiatives for preventive health care.

One major computer aid to diagnosis, which has been extensively studied in recent years, is that of pattern recognition. Here the computer is used to search for any abnormalities in a record produced by a measuring device, such as an electrocardiogram or electroencephalogram. Also the computer can be connected to an electronic system that scans microscope slides to give blood cell counts or analyze cancer-detection smears.

While these applications show real promise, progress in this area has not been as rapid as originally expected, since each problem of pattern recognition has unique aspects, requiring different types of numerical representation. And, as was said at a recent conference on the clinical use of computers,

"Finding an appropriate numerical representation is largely an empirical matter, following different ad hoc rules found to be useful in each special situation...In fact, to put matters in their true perspective, it should be said that for almost any automatic recognition problem, 95% of the design effort involves the search for an appropriate numerical representation of the event to be classified." (13)

This requires a cooperative effort between computer and medical people, one that is just beginning to be made.

Multiphasic screening centers have been given nationwide publicity in recent months as possible new initiatives in preventive health care. Here ostensibly healthy individuals visit a screening center, their medical histories are compiled, then they are given a wide variety of medical tests to look for abnormalities whose effects may not yet have been noticed by the individual. At present almost 150

of these centers are functioning throughout the country at a cost of \$25 to \$75 per person treated (12).

In view of the difficulties mentioned earlier in pattern recognition techniques of diagnosis, the role of computers in the multiphasic screening centers has been limited primarily to data collection and paperwork: compiling medical records, and recording test results from expensive, often automated, testing systems. While many of the technical problems associated with the system have been ironed out in recent years, there are serious questions about the medical value of the tests.

According to Michael Halberstam, a practicing M. D. and sometime writer on health matters for the New York Times,

"Medical controversy rages over almost every one of the tests involved in automated screening, with the exception of the standard blood count and urinalysis. Routine chest x-rays are being abandoned as uneconomical in detecting the presence of T. B. and as too late in the diagnosis of carcinoma...

"Diabetes detection is another darling of the screeners. I've had four year's experience in a Public Health Service diabetes detection program within a government agency. All we can detect are: (1) fat people; (2) old people (the norms are not age-corrected or adjusted); (3) young girls taking anovulatory pills; and (4) known diabetics who 'just want to see how I was getting along.' This would be mildly worthwhile if we had any evidence at all that treatment of early diabetes has any effect on preventing overt diabetes or vascular disease. Of course, if the 'early diabetic' is fat, he should lose weight, but we didn't need a glucose tolerance test to tell us that.

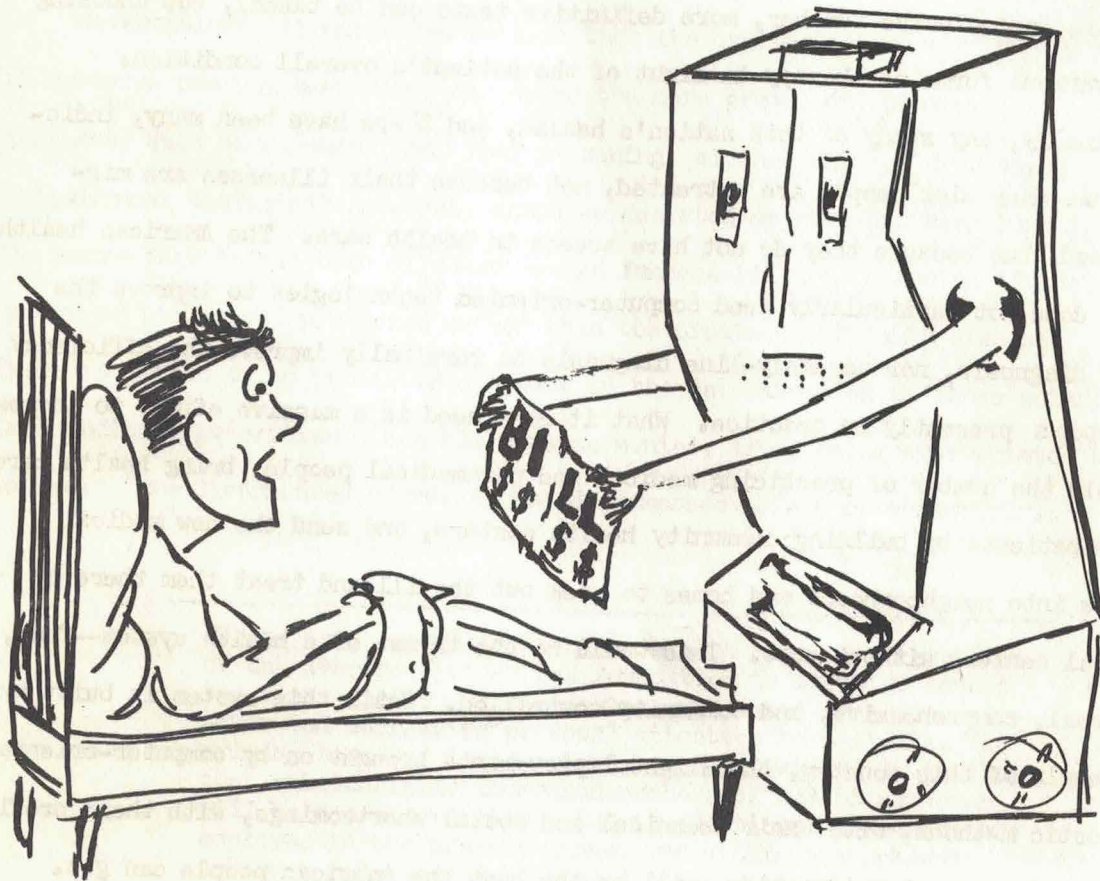
"And so it goes. The more we test, the more we're discovering that a high uric acid result doesn't necessarily mean gout, that a high calcium isn't necessarily parathyroid or renal or neoplastic disease--in short, that some 'normal' people have high test results. But we're discovering this is at vast economic, medical, and psychological expense." (6)

Dr. Halberstam's conclusion: "Right now, automated screening is a medical research tool and little more." And, one might add, a source of jobs for researchers and technicians, and a source of profits for computer and medical equipment companies.

Some further medical questions about the value of screening centers are suggested by the experience of Kaiser-Permanente, a California health insurance plan that pioneered in the use of these centers. According to a recent report in the New York Times, the most common disorders found among the more than 47,000 patients

tested each year have been " obesity, high blood pressure, anxiety, arthritis, and diabetes" (12). A layman can even see that, with the exception of diabetes, the diagnoses of these disorders can be done quite simply without automated health testing.

In addition to medical questions about the value of tests given at screening centers, there are other serious social and medical problems raised by computer-oriented diagnostic tests. In the case of multiphasic screening centers, the cost of \$25 to \$75 per person effectively prevents access to this service by poor and



low-income people, those most in need of health care, as well as many middle income people. Furthermore, the high-technology, high-cost equipment at the centers requires steady, high-volume use, which means that the centers are efficiently, hence profitably, run primarily for people who are members of health plans, unions or employees of large businesses. Unfortunately the medically indigent are most often those not in organized groups--the aged, the unemployed, welfare families, etc.

There are other persuasive arguments against putting much of our human and financial resources into improved methods of computer diagnosis. As various doctors have noted, the establishment of a diagnosis does not at all establish therapy. (For a more detailed comment on this, see Reference(4)). The difficult medical problem for the doctor is not so much diagnosing the ailment (often if early tests are inconclusive further, more definitive tests can be taken), but choosing among various forms of therapy in light of the patient's overall condition.

Finally, any study of this nation's health, and there have been many, indicates that many sick people are untreated, not because their illnesses are misdiagnosed, but because they do not have access to health care. The American health system does not particularly need computer-oriented technologies to improve the art of diagnosis, nor assembly-line diagnosis to marginally improve the efficiency of doctors presently in practice. What it does need is a massive effort to increase manyfold the number of practicing medical and paramedical people, bring health care to the patients by building community health centers, and send the new medical workers into neighborhoods and homes to seek out the ill and treat them there or at local centers without cost. This would be the thrust of a health system--free, universal, comprehensive, and community-controlled. Until this system is built by the people of this country, the slight improvements brought on by computer-oriented diagnostic methods, with their technical and social shortcomings, with their profit making and research orientation, will be the best the American people can get.

C. Biomedical Research

One of the more successful areas of computer use in the medical field has been that of biomedical research. Here the computer performs complex, repetitive logical tasks which humans cannot match for speed and accuracy.

Computers have been used to check assumed models for natural processes by calculating the results expected from them in various experimental situations. They have been used as real time automatic monitoring and control devices during experiments. They have been used to compare observed and predicted values of experimental parameters, and to reduce complex data to simple graphic form. They have played an indispensable role in the rapid development of modern biomedical science.

Nevertheless, it must also be said that the overwhelming use of resources in research has not been directed toward the more prevalent, preventable diseases, such as malnutrition, lead poisoning, alcoholism, and drug abuse. Indeed, most biological research, computer assisted or not, has been pure in the sense that it has been directed toward fundamental understanding of the nature of biological processes rather than the treatment of human disease. There is little or no public involvement in the determination of these scientific (and medical) priorities since all science monies, after being appropriated by Congress, are distributed by review boards composed solely of scientists.

"There is a crisis in American health care. The intuition of the average citizen has foundation in fact. He senses the contradiction of increasing employment of health manpower and decreasing personal attention to patients. The crisis, however, is not simply one of numbers. It is true that substantially increased numbers of health manpower will be needed over time. But if additional personnel are employed in the present manner and within the present patterns and "systems" of care, they will not avert, or even perhaps alleviate, the crisis."

Report of the National Advisory
Commission on Health Manpower, 1967

In summary, then, each of the three major areas of computer use reinforce the priorities of the present health system--profit making, research, and education--while contributing little or nothing to patient care.

By the very nature of their form of ownership, of course, computers in the health system must be oriented toward profitability--that is, toward making a profit from those who are ill, since it is they who directly or indirectly pay most of the costs of the health system. But even within this social framework the services returned by computers to the system are not primarily directed toward patient care. They are directed toward biomedical research, with its limited priorities in the area of patient treatment, especially for prevalent preventable diseases. They are directed toward increasing the efficiency of the hospital system through automation of communications within the hospital. And in the area of diagnosis, where they come closest to the individual patient, their contribution is of dubious medical value, and focuses on the definition of disease, when the central problem is treatment of the patient.

IV. PRIORITIES AND COMPUTER USE IN AN IMPROVED HEALTH SYSTEM

The main priority of the American health system must be patient care, with research and education in service to this central task. Profit making should play no role in this system, concerned as it is with human life.

Such a change in orientation would bring many changes to our health system. Patient care would have to be free at the point of delivery, so that need alone determines whether an individual gets medical aid. (The costs of care would be borne by the entire society through progressive forms of taxation.) The system would have to be universal, so that all have the same access to medical care, whether they be urban or rural dwellers, innercity or suburban residents, Southerners or New Englanders. An important component of universal health care would be the establishment of community health centers on a nationwide scale. This would allow for much greater contact between individuals and the health system, whereas at present patient care is centralized, often far from people's homes, and takes place during times inconvenient for working people.

Health care would have to be comprehensive, thus would undoubtedly involve a much greater emphasis on preventive care than is now the case. Only by changing the present medical payment system of fee-for-service could a good preventive care system be developed.

Finally, of course, medical care would be community/worker controlled, that is, all those who participate in the health system, health workers and patients, would participate in determining the goals of the system. This is probably the most important priority in a new health system, since a new medical system could not remain free, universal and comprehensive for long unless the broader community participated in decision making, rather than just narrow interest groups as at present.

Clearly the goals outlined above do not basically require technological advances for their accomplishment, although modern technology would be helpful to these health systems. For example, medical data banks could be of value in a patient

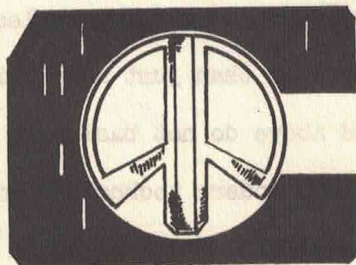
oriented, health system by permitting community health workers almost immediate access to the medical record of all patients, whether from the community or not. (However, the balance between accessibility and privacy is difficult to determine under any system). Computers could also be used to gather data and statistically evaluate the effects of various therapies on patients, taking into account a wide range of characteristics defining the patient's medical conditions.

But, of course, we don't live in a society with a patient oriented medical system, we must build such a system. Under these circumstances there are a variety of things which medical computer people must do. First they must educate themselves to understand how the present American health system works, and how computers are used to reinforce its disordered priorities. They must also help others who are not directly involved in this work to understand its shortcomings, so that they won't be misled by the glowing promises of those who are trying to preserve the status quo.

Then computer people must work with individuals and groups in their field, to re-orient as much as possible how computers are being used, so that they will be directed toward building a people oriented medical system.

At the same time as they work within the field, computer people must also join with others in the health system fighting for new priorities--insurgent medical groups, staff groups, community groups, and health consumer groups.

And finally, with a growing awareness that the problems facing this society are interlocked, we must join with other people and interest groups to radically reorder the values and priorities which are responsible for the present crisis of the American system.



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ABOUT CPP

This booklet was written and assembled by members of Computer People for Peace. We hope that it is of help to both computer people and community workers concerned with the crisis in American health care.

Computer People for Peace was started more than three years ago around the issue of the War in Vietnam. Now, like many groups, we are focussing attention on the related problems here at home. Since the computer is just a tool which is used to implement the priorities of this society, we feel that CPP's role is to inform the public about the current applications of this tool. This booklet is part of a series which deals with computers and privacy, and computers and the military-industrial complex. For further information, or additional copies please send the attached coupon.

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