AMBULATORY CARE IN
THE GOOD SAMARITAN
MEDICAL CENTER

Vincent D. Taylor and Joseph P. Newhouse

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AMBULATORY CARE IN THE GOOD SAMARITAN MEDICAL CENTER

Vincent D. Taylor and Joseph P. Newhouse

This research is supported by The Hospital of The Good Samaritan under a letter agreement. Views or conclusions contained in this study should not be interpreted as representing the official opinion or policy of the sponsor.
PREFACE

This Rand Memorandum was prepared in cooperation with The Hospital of the Good Samaritan, Los Angeles, California. It is part of a project in which Rand is working with individual medical institutions to develop workable solutions to problems faced by them. By following this approach, Rand seeks to ensure that its recommendations on improving medical care will take into account the practical difficulties faced by those who have the responsibility for delivering care. Rand Memorandum, RM-6057/1, Improving Budgeting Procedures and Out-Patient Operations in Nonprofit Hospitals, January 1970, is part of the same project.

The authors wish to acknowledge the help of Dr. John C. Wilson, Jr., Miss Margaret J. Wherry, and Dr. William H. Grishaw of The Hospital of the Good Samaritan. They are also deeply indebted to all those physicians who graciously gave of their time for interviews and replied to a lengthy questionnaire. Special appreciation is due Dr. Peter S. Bing who made the arrangements for this study and provided counsel throughout.
SUMMARY

This Memorandum proposes that private practice should serve as the model for the provision of non-emergency ambulatory care in the planned Good Samaritan Medical Center of Los Angeles. Almost all patients, whether private patients of the attending staff or nonprivate patients, would receive non-emergency ambulatory care in the Medical Center offices of the attending staff or in special “integrated medical units” that closely resemble private offices. Teaching ambulatory care to interns and residents would be conducted in the integrated medical units.

This proposed approach differs sharply from standard practice of a teaching hospital, where ambulatory care is only provided in an emergency room or in specialty clinics. As compared to the standard methods, the proposed approach will provide care that is of higher quality, more convenient and pleasant, and less expensive. Because of the teaching and experience gained in these on-the-job situations, interns and residents will also be better prepared for the situations they will face when they begin practice on their own.

The specific recommendations are as follows:

1. **Private office practice should form the core of ambulatory care operations at the Medical Center.** Our studies indicate that compared to typical outpatient clinic practice, private office practice is not as expensive, is more convenient to physician and patient, and provides better continuity of care. We believe, therefore, that the Medical Center could provide a model for the country by adapting private-practice medicine to the needs of a major medical institution.

2. **Ambulatory care operations under the direction of the Medical Center should be integrated, to the maximum extent possible, with private office practice located in the Medical Science Building.** We therefore suggest that:

   (a) **Integrated medical units should be established throughout the private office space in the Medical Science Building.** Each integrated unit would consist of several senior physician offices together with office and examining room space for several house staff (that is, interns and residents). Offices within an integrated unit would share a waiting room and other mutually agreed upon supporting staff and services. The offices in the integrated unit would be interconnected so that the senior physicians could conveniently
share supervisory responsibility for the interns and residents in the unit. The bulk of training in ambulatory care would be provided in these units.

(b) Nonprivate patients should be treated in private offices, including the integrated medical units, rather than in separate clinic facilities. Persons who appear at the Emergency Room seeking non-emergency care would be offered the option of receiving care in the integrated units or in the Medical Center offices of the attending staff, rather than in the Emergency Room. Patients sponsored by the Good Hope Medical Foundation could also be treated in this way, if acceptable to the Foundation.

(c) Training in ambulatory care should be provided largely in the integrated units. Rather than establishing specially clinics that meet periodically in separate facilities, training in outpatient care would be given by assigning interns and residents to integrated medical units of the major specialties. The house staff would care for nonprivate patients and would also see private patients of the senior physicians of the integrated unit. The senior physicians would be responsible for the training of the house staff and the care that they provide the patients.

3. Physicians who wish to perform ancillary procedures in their own offices should be permitted to do so. Our survey of physicians who indicated interest in moving to the Medical Center revealed that a majority would choose to have almost all ancillary procedures performed by central Medical Center facilities rather than do the procedures themselves. The minority who wished to perform certain procedures in their own offices, however, felt very strongly on the subject. Most of this minority were internists who felt that their practice would be seriously impaired if they could not obtain simple laboratory tests in a timely, convenient manner. Unless permission to perform procedures on their own is granted attending physicians, we believe it will prove impossible to obtain an appropriate balance of specialists in the Medical Sciences Building. Since most physicians will make use of the central facilities, a procedure of allowing individual laboratories, x-rays, and electrocardiographs in the building will not greatly affect the overall operations of the Center. Furthermore, because individual physicians will be able to perform lab tests in their own offices if they become dissatisfied with the performance of the central lab, there will be a strong incentive for the central lab to keep the quality of its services high.
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I. INTRODUCTION

The Hospital of the Good Samaritan, Los Angeles, California, has developed plans for a new medical center complex that will include substantial operations in ambulatory non-emergency care. A Medical Sciences Building will have office space for approximately 100 attending physicians initially, with potential growth to 200 physicians. A full-scale Emergency Room will operate around the clock. A greatly expanded training program for interns and residents will require extensive teaching in ambulatory care. The Good Hope Medical Foundation, which now provides subsidized care in its own clinic facilities, will probably seek to care for its patients within the Medical Center.

We were asked by the Medical Executive Committee of Good Samaritan Hospital to work with members of the hospital staff to develop plans for provision of non-emergency ambulatory care in the Medical Center. Our recommendations are the result of detailed studies of several outpatient clinics, fact-finding visits to additional outpatient clinics, discussions with approximately 30 individual physicians on the Good Samaritan staff, and responses to a detailed questionnaire from these same physicians. The specific recommendations are presented in the Summary. The reasoning and supporting evidence that led to them are presented in the sections that follow.
II. DEFECTS IN TYPICAL HOSPITAL OUTPATIENT CARE

To the extent possible, ambulatory care in the Good Samaritan Medical Center should conform to the patterns prevailing in private practice. Put another way, it would be a mistake to follow the normal hospital pattern of providing most ambulatory care in the Emergency Room and in specialty clinics. Rather, each patient should be assigned to a physician, whether or not he is a private patient. Furthermore, all physicians should provide ambulatory care in essentially the same manner and in the same setting, regardless of whether they are on the attending staff, are full-time members of the hospital staff, or are members of the house staff.

There are strong economic reasons why the Medical Center should attempt to conform to the patterns of private practice in providing ambulatory care. But leaving economics aside, there are sufficient medical and human reasons to prefer the private-practice form of providing care. To understand these reasons, one needs an appreciation of the way care is typically provided in hospital outpatient departments.

THE EMERGENCY ROOM

The largest number of outpatients are usually seen in the Emergency Room of the hospital. The name is a misnomer. The vast majority of patients who utilize the Emergency Room are not medical emergencies. They come to the hospital because they have no private physician, because their own physician is unavailable, or simply because they believe the quality of care is better than they could obtain elsewhere. When they arrive, they are subjected to time-consuming and expensive registration procedures. If the hospital dispenses charity, they must be further interviewed to determine their eligibility for discounts on their bills. If they have been seen in the hospital previously (as most have), their medical record must be obtained from the central record room of the hospital. This last operation alone can take an hour or more—and cost a dollar or more.

Because of the registration requirements, because of the need to obtain prior
medical history from the medical record, and because the patients are unscheduled and tend to come in bunches at certain hours of the day. Patients in the Emergency Room generally wait for an hour, and may wait two or three hours, to obtain care. Of course, obvious emergencies are cared for on a priority basis, but the congestion created by the non-emergency patients often interferes with attempts to provide timely treatment or to determine those who truly require it. This extensive queueing of patients not only interferes with care of true emergencies and is aggravating to the patients, it also adds a substantial increment to the cost of providing care. It increases cost first of all because the hospital is required to set aside extensive areas for waiting space. There must be enough room not only for the patients but for those who accompany them. If an Emergency Room treats 25 patients an hour and there is an hour’s wait, there must be reception space for about fifty people to wait for there is usually another person accompanying each patient. To take care of peak loads, it will probably have to be twice as large. The long waits also increase cost because they cause some patients to become upset and attempt to see a doctor before their turn. Dealing with these attempts upsets the routine, takes the time of personnel, and generally decreases the efficiency of operation.

When a patient finally gets to see a doctor in the Emergency Room, it is very likely that he will see an inexperienced medical staff member of the hospital. Since the Emergency Room is often considered the least desirable duty in the hospital, it is put, to the extent possible, upon the lowest status physicians—the house staff. Because the Emergency Room is considered an unpleasant place, it is often difficult to get senior physicians to provide supervision and assistance to the house staff on duty. The result is that the care provided in true emergency situations is often inadequate and the training received by interns and residents is almost always far below the potential level.

Finally, and perhaps most importantly, each visit to the Emergency Room is treated as a completely separate episode. Thus, the patient in all probability will not see the same doctor even if he returns for treatment of the same medical condition. This is a serious shortcoming from the medical, human, and economic standpoints. Although the notes in the medical record can indicate the gross aspects of a patient’s illness, they are no substitute for the careful scrutiny of a physician. Important changes in the patient that would be obvious to the same physician may be completely missed by a new physician making a follow-up treatment. (This deficiency still exists in most hospitals even if follow-up visits are scheduled in another, non-emergency clinic, since the return visit will usually be with another physician.) It is not the best medicine. It is also poor economics. The physician must generally spend a substantial amount of time familiarizing himself with the patient’s medical history and making certain that he is not overlooking anything important. This means extra expense because of the additional time of the physician, of those who assist him, and of the patient.

In sum, the Emergency Room provides care that is impersonal, inconvenient, expensive, and often inadequate. Because it is usually overcrowded and undersupervised, the interns and residents who staff it generally do not receive the full potential educational value from the time spent there.
SPECIALTY CLINICS

Not all outpatient care, of course, is provided in the Emergency Room. In the typical hospital where teaching of interns and residents is an important activity, there are numerous specialty and subspecialty clinics that meet periodically. Depending upon the nature of a particular clinic, it may meet daily, one or more times a week, or perhaps only once a month. It is in these clinics that the majority of teaching in ambulatory care takes place. Attending physicians devote their time to give treatment to patients and supervision to interns and residents. Full-time members of the hospital staff usually attend clinics in their specialty and thereby help to keep the attending staff up-to-date on the latest developments in the field.

Although the specialty clinics are superior to the Emergency Room as providers of care and of medical training, they also suffer from many defects in actual practice. For example, all patients may be scheduled to arrive at the beginning of a clinic session—ensuring that some patients will not be seen until two or three hours after they arrive and maximizing the waiting space required. Because the attending staff devote their time to the clinic, they have a natural and understandable tendency to arrive late (and there is little that a hospital can do about it). This wastes the time of patients, of interns and residents who are in attendance at the clinic, and of nursing personnel assigned to the clinics. Clinics also suffer from a lack of continuity of care, since there is often no effort made to assign a patient to a specific physician. As in the Emergency Room, the lack of continuity adds to cost and detracts from the quality of care—and these effects are even more important in the specialty clinics because the medical cases are usually more complex.

COSTS AND INCENTIVES

Private practice appears distinctly preferable to clinic or Emergency Room care on grounds of quality, convenience, and concern for the patient. Conventional wisdom, however, holds that clinics operate much more efficiently than private practice offices and, therefore, the country must move toward the clinic form of practice in order to get the maximum output from its scarce medical resources. Although it may be true that a highly efficient clinic will be more economical than the average private practitioner, the average clinic seems to be much more expensive than the average private practitioner.

We have studied in detail the outpatient clinics of two large hospitals, both heavily involved in teaching interns and residents, and the operations of a small charitable clinic that also has teaching activities. We found each one of these to be substantially more costly than private practice. Nor could the higher costs of the clinics be attributed to teaching activities. Teaching primarily adds to the time spent with each patient by teachers and students. It also probably adds to the cost of ancillary services. It does not significantly affect services and personnel needed to support the physician such as billing or obtaining a medical record—yet we found substantial excess costs in the non-physician components of care in these clinics.
Table 1 shows the total non-physician costs per visit at the three institutions studied, as well as selected components of this total cost. To make these figures more comparable with private physician practices, we have excluded Emergency Room costs. Inclusion of such costs would raise clinic costs still further. We have also excluded ancillary service costs for the same reason. These cost figures are compared

<table>
<thead>
<tr>
<th>Cost</th>
<th>Average of Three Clinics</th>
<th>Sample of Private Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total overhead cost per visit&lt;sup&gt;a&lt;/sup&gt;</td>
<td>$14.24</td>
<td>$4.54&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Billing and cashiering cost per visit</td>
<td>2.07</td>
<td>0.46</td>
</tr>
<tr>
<td>Medical records</td>
<td>1.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Outpatient Department administration</td>
<td>0.79</td>
<td>—</td>
</tr>
<tr>
<td>Registration</td>
<td>0.27</td>
<td>—</td>
</tr>
<tr>
<td>Appointments</td>
<td>—</td>
<td>0.53</td>
</tr>
<tr>
<td>Other clerical and nursing</td>
<td>3.57</td>
<td>3.20</td>
</tr>
<tr>
<td>Other professional personnel (non-M.D.)</td>
<td>1.22</td>
<td>—</td>
</tr>
<tr>
<td>Household and property and institutional overhead charged to clinics&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3.93</td>
<td>(included in rent)</td>
</tr>
<tr>
<td>Supplies</td>
<td>0.90</td>
<td>not available</td>
</tr>
<tr>
<td>Rent</td>
<td>(b)</td>
<td>1.53</td>
</tr>
</tbody>
</table>

<sup>a</sup> Overhead costs consist of all non-physician costs except costs of ancillary services and costs of space.

<sup>b</sup> The $4.54 figure excludes $1.53 per visit for rent. This was done because we did not want to impute a rental value to the clinic buildings which were owned. We felt most of the rental charges were capital costs and not maintenance costs. Hence, to keep the total costs as comparable as possible, neither rent nor an imputed space charge was added in. Costs of supplies are also excluded from the private physician figure.

<sup>c</sup> In one of the clinics, household and property were disaggregated from institutional overhead charges. In that case they were over 60 percent of the total household and property and institutional overhead charges.

with similar figures obtained from a sample of 20 private physicians on the staff of Good Samaritan Hospital. Although the sample is quite small, the differences between the clinics and the private practitioners are so vast that there is little doubt about the superior cost performance of private practice. This conclusion is supported by national survey figures on incomes and costs in private practice. They show that

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1 Because of our agreements to preserve confidentiality of information, Table 1 presents only the average of the costs of the three institutions.
overhead costs (roughly equivalent to our category of non-physician costs) average about 40 percent of gross income. Applying this percentage figure to a typical Los Angeles office-visit charge of $12.00 yields an overhead expense of $4.80 per visit—somewhat below our sample finding (if rent is included) and far less than the clinic figures. The finding that private practice is less expensive than clinic care is also supported by the surveys of internists made by Richard Bailey. He found that care provided in large group practices, which share many of the features of clinics, was significantly more expensive than that provided by small groups or solo practitioners.

The differences shown in Table 1 are so large that they will undoubtedly lead to questions about their accuracy and representativeness. Our methods of collecting and identifying costs are discussed in the Appendix. Considerable care was taken in obtaining the figures used, and we are confident that they are reasonably accurate. Based on our general knowledge of per visit costs at other hospital outpatient departments and in private practice, we are also confident that they are reasonably representative. The costs of private practitioners are, if anything, biased upwards. This is because personnel working for the private practitioner may perform tasks that are unrelated to office visits per se, but rather are related to the physician's activities in the hospital or to his teaching activities. The same cannot be said for the personnel in the clinics, whose time, so far as we can tell, is entirely devoted to the production of clinic visits.

Although the proponents of clinic medicine point to the potential efficiencies of larger scale operations, they overlook the management problems that arise with large clinics. The physicians are the ones who have the most to say about the levels of supporting staff and services in the clinics, but they generally are little concerned about the costs of this support and little influenced by those responsible for managing the operations. By contrast, in his own practice the physician gives careful attention to keeping down overhead costs—since each additional dollar of overhead reduces his net income by an equal amount.

In addition to the positive incentive of increased income for higher efficiency, the private physician also faces the discipline of the marketplace; this limits his ability to raise his fees to cover the costs of inefficient operation. Although he may have some flexibility in setting fees, if he gets too far out of line with prevailing rates his patients will begin to go elsewhere for care. Hospital clinics, however, can pass their overhead costs along to third parties (such as Medicare and Medicaid) or to private philanthropy (which may underwrite the deficit incurred by the clinic). Charges to paying patients are generally well below cost, so the inefficiencies of the clinics do not drive patients elsewhere. The clinics themselves do not suffer from

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2 *Medical Economics*, December 8, 1969, p. 86.
4 For further analysis of this problem and the data in Table 1 see Joseph P. Newhouse, *The Economics of Group Practice*, The Rand Corporation, P-4478, October 1970.
their inefficiencies; the community at large bears the penalty through increased philanthropic donations, higher taxes, and larger insurance premiums.

By using private practice as the central focus for ambulatory care, the hospital can take advantage of the efficiencies that physicians maintain in their own practices. Since the physicians will be seeing nonprivate patients in their own offices, the supporting services will be the same as for private patients. The excess costs that we have found in clinics will be avoided. At the same time, the nonprivate patient will gain the medical and personal advantages of private practice.
III. THE PROPOSED CONCEPT FOR AMBULATORY CARE

Our proposal is for the Good Samaritan Medical Center to provide offices for private physicians in the hospital in what we term "integrated medical units." These units would provide the setting for patient care that is to be provided by interns and residents. The offices of full-time staff and those private physicians who wished to participate in the teaching program would be grouped together in a number of such units within the Medical Center complex. Members of a unit would share a waiting room and other mutually agreed upon facilities. For example, four senior physicians might form a single integrated medical unit in internal medicine. Generally all physicians in a unit would be of the same specialty.

Associated with each unit would be office and examining room space for several house staff. The senior physicians of the unit would share the teaching and supervision of the house staff. For example, the house staff of a unit might see patients four mornings a week and each senior physician would have supervisory responsibilities one morning a week. The objective would be to make the teaching setting as much like private practice as possible, both because this will provide a realistic training experience and because there appear to be medical and economic advantages to this type of practice. We envision that interns and residents would be responsible for making and keeping appointments with patients, for reviewing the accuracy of any bills issued to patients, and for reviewing the budget and expenditures of their teaching units.

The Medical Center should involve all physicians of the Center, including full-time and house staff, in the management of the ambulatory care operations. This could be accomplished by giving each integrated medical unit a budget, which would include not only salary money for any physician staff members employed by the hospital but a lump sum budget to cover any expenses associated with the support of these staff members (such expenses as nursing, billing, supplies, and so

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1 The exceptions would be true emergency care, provided in the Emergency Room, and treatment of relatively rare conditions, where the requirements of teaching dictate that special clinic sessions be held.

2 The decision to participate in teaching would be made jointly by the senior physician and the director of the teaching program. Not all senior physicians would participate.
forth). Use of this budget would be controlled by the senior physicians of the unit, but they would be expected to involve the house staff in all important decisions. It would be desirable if the budget contained a "share-the-savings" feature so that whenever actual expenses were under budget, the physicians in a unit would receive a share of the savings as additional compensation. This would provide all physicians with the same financial incentives that we have seen operate so successfully in the office practice of private physicians.

For the senior physicians, the proposed concept involves only minor changes in their method of practice. They will continue to see private patients as in the past. Nonprivate patients seen by them or under their supervision will also be handled in essentially the same manner as their private patients. Although the senior physicians will be devoting some of their time to supervision of the house staff, this time should not be much greater than the time donated to hospital clinics by those active in teaching now. It may even be less, since the physician will not have to travel back and forth from his office to a clinic in another location. If the time demands on senior physicians appear burdensome, we believe that the Medical Center should devise a compensation scheme that will make supervisory work attractive—perhaps by crediting the supervising physician with some portion of the fees generated by the house staff.

The most significant changes (and benefits) will be for those patients who come to the Medical Center for care and who have no private physician. In the typical hospital they would be classified as nonprivate patients, probably be seen first in the Emergency Room, and perhaps eventually be assigned to a clinic. Under the proposed concept, these patients generally would be assigned immediately to a senior physician in an integrated medical unit. Actual care would usually be provided by one of the house staff assigned to the unit under a senior physician's supervision.

All persons who appear at the Emergency Room seeking non-emergency care would be offered the option of receiving care in the integrated units or in the Medical Center offices of participating members of the staff. This alternative will be less expensive, more pleasant, and offer greater continuity than treatment in the Emergency Room. For this reason, we would expect that almost all care provided by the Emergency Room during normal office hours will be for true medical emergencies. Non-emergency cases that appear at the hospital will be quickly channeled into the normal system of ambulatory care, thus avoiding the inefficiencies, lengthy waits, and fragmented care of most hospital outpatient departments.

Over time, as the reputation of the Medical Center spreads, the number of patients "showing up at the front door" will increase. If the numbers are more than sufficient to meet the needs of the teaching program, the patients could be referred to senior physicians who wished to accept such patients—an additional benefit for the staff. During our interviews, a number of physicians mentioned that the staff at Good Samaritan was already so busy that this feature, while attractive in theory, was not of much value to the existing staff. We therefore asked the physicians in our sample whether they were satisfied with their present patient load. Fourteen said they were; nine said they were not. Of the nine, two physicians wanted fewer
patients; the other seven (including two internists) wanted more (most wanted at least 25 percent more) patients. This suggests that there still is some flexibility among the staff and that this feature will benefit a number of physicians on the staff. Perhaps even more importantly, this should appeal to young physicians who are attempting to build up their practice. Since one of the major reasons for developing the Medical Center is to attract young physicians, this referral system is an important benefit of the proposed concept.

Medically, the proposed concept should result in better continuity of care. If a follow-up visit is needed, the patient will make his appointment directly with the physician initially treating him. If a house staff member is caring for him, he will have the same physician during the physician’s period of rotation in the medical unit. Further, the senior physician of the unit to whom the patient is assigned will provide continuity across the changes in house staff.

The system should also be much less time consuming for patients. Each patient would have an individual appointment in advance. Experience at the Massachusetts General Hospital has shown that when patients were given individual appointments, the no-show rate, patient lateness, physician lateness, and patient waiting time were all cut sharply.3

Finally, care would be provided in a manner and in a setting far more pleasant than those of most hospital clinics. This advantage of the proposed concept seems certain to become increasingly important. Traditionally, hospitals have provided outpatient care to indigent patients at charitable rates. These persons were in no position to demand more convenient or pleasant care. Now, however, hospitals are increasingly providing outpatient care to higher income families who have no personal physicians, or whose physicians are unavailable when needed. They will not tolerate the inconveniences and discomforts suffered by the indigents. Furthermore, government programs such as Medicare and Medicaid are now paying the full cost of care provided to low income families. It seems likely that government will increasingly insist that patients covered under its programs deserve more than traditional clinic care. For these reasons, and because government programs give the indigents the option of obtaining care from private practitioners, it is questionable whether the traditional clinic will be considered an acceptable provider of care much longer.

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IV. ISSUES AND PROBLEMS

Under our proposed concept, private-practice medicine would provide the pattern for most ambulatory care in the Good Samaritan Medical Center. A number of problems must be overcome if private-practice medicine is to be successfully adapted to the teaching and care needs of a major medical center, such as the one being planned. We have addressed these problems, formulated possible means of dealing with them, and tested their acceptability to a sample of the staff of the Good Samaritan. Our approaches to dealing with the problems and the response of the staff members are described in this section.¹

ACCEPTABILITY OF THE PROPOSED IDEA TO THE STAFF

The great majority of physicians with whom we spoke were enthusiastic about the proposed method for combining private practice and medical education. Of the 24 physicians who replied to our questionnaire, 20 said they were "in favor of conducting the bulk of intern and resident teaching in ambulatory care in the fashion described," 3 were not; 1 physician did not reply to the question. We then asked, "Would you be willing to supervise interns or residents in the care of nonprivate patients in your office suite?" Twenty-one answered yes; 2 no, 1 did not reply. We also asked if the physician would expect some kind of financial compensation for supervising two interns or residents. Eleven physicians said they would expect compensation if they spent one morning per week; 11 said they would not; 17 said they would expect to receive some sort of compensation for spending two mornings per week; 3 said they would not.

MIXING OF PRIVATE AND NONPRIVATE PATIENTS

As more and more persons are covered by government-sponsored insurance programs, it will become increasingly difficult to obtain a sufficient variety of pa-

¹ The questionnaire from which these responses were obtained is available separately from the authors.
tients for teaching purposes without including private patients. One of the advantages of the integrated teaching concept is that a member of house staff could see a private patient in the office and under the supervision of the patient's own physician. The response to our questionnaire indicates that under these circumstances most physicians believe that many of their private patients would be willing to participate in the teaching program. Twenty out of 22 physicians said they would be willing to allow an intern or resident to see their private patients in their own office under their supervision. We next asked the physicians: "What fraction of your private patients would be willing to be examined by an intern or resident under your supervision?" The 21 replies received were as follows: small minority - 4; large minority - 7; a majority - 4; nearly all - 6. We also asked: "Would those private patients examined by interns and residents expect to pay the same or less than if they had been seen exclusively by you?" The replies were: the same - 17; less - 3; more - 1.

Another possible problem is the mixing of private and nonprivate patients in the waiting room of those attending physicians who participate in the teaching program or in the care of nonprivate patients. Some physicians fear that their private patients will resent being treated along with nonprivate patients. Children's Hospital of Boston treats both private and nonprivate patients within the same attractive facility and in the same manner. Their experience has been that under these circumstances nonprivate patients dress and act so as to be indistinguishable from private patients. Of our sample of physicians, 70 percent felt that this experience would be duplicated in the Good Samaritan Medical Center. Eighty percent indicated they would be willing to intermix private and nonprivate patients in their offices.

**APPOINTMENT SCHEDULING**

The integrated teaching and care program requires that centralized operations, such as the reception desk in the Emergency Room and the Good Hope Foundation office, be able to assign new patients to available physicians. This requires centralized information on the physicians' appointment schedules and availability for various types of patients. We believe that this can best be accomplished by having each physician (including house staff) keep his own appointment book, but to feed this information to an on-line computer. Physicians could either use the on-line system to replace their appointment books, or they could merely provide the necessary up-to-date information to the computer system. The centralized operations could then use the information to determine which physicians would be available to patients needing care. Actual appointments would be made by calling the appropriate office and confirming it with the physician's staff. No appointments

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would be made through the computer facility without contacting and confirming it with the physician.

Although at this time we do not have a cost estimate for the computer system, the cost should be moderate. If it is too high, a manual system with the essential features of the computer system could perhaps be developed. The computer system would have the benefit of permitting a variety of information about future schedules to be routinely printed out and made available to individual physicians. It would also permit the assignment of Emergency Room drop-ins to fill empty spaces in the office schedules of those physicians who wish it. This feature should be particularly attractive to young physicians who are attempting to build a practice.

Nearly three-fourths of the physicians in our sample were in favor of the proposed appointment information system. The comments of those who did not favor the system indicated that many of them did not completely understand the proposal. We conclude, therefore, that the concept will be acceptable to the staff. Since there are similar systems already in operation in several hospitals, technical feasibility has been proved; its adaptability appears to offer no problem.

MEDICAL RECORDS

Medical records present a major problem. Although a single, central record is considered important for teaching purposes, most private physicians are adamant about maintaining physical possession of their records. Therefore, private patients who participate in the teaching program cannot have a single record, available to all physicians in the Medical Center. A second problem with single records is that they are usually stored in a central location, giving rise to considerable delay and expense each time a record needs to be consulted—and most physicians like to consult the record each time they have contact with a patient, even if it is only to answer a telephone request.

To surmount these problems we propose that a master teaching record for any patient participating in the teaching program be kept by an internist, since he will generally be the first to see the patient. Any time such a patient saw any physician in the Medical Center, a form containing the relevant medical history from that visit would be inserted in the master record. In addition, physicians (including internists) would maintain their own records for their private patients.

The master teaching record could move from office to office. The on-line computer system used for appointment information could also be used as the basis for a "record accountability system" and to keep track of the location of records. When a patient was not under active treatment by any specialist, the record would reside in the responsible internist's office or teaching unit. This system should minimize time-consuming and expensive movements of the record.

The on-line computer system could also issue new medical record numbers for patients with no number listed in the computer file; thus the complexities of the typical centralized assignment of medical record numbers would be avoided. (One
physician made the worthwhile suggestion of using Social Security numbers to identify records.) Also, certain information from medical records could be coded in an on-line computer to facilitate research and emergency treatment (for example, the patient's primary physician, selected diagnoses, allergies, special conditions, statistics on prior hospital stays, and so forth).3

When queried about a close variant of this approach to medical records, 78 percent of our sample indicated that they found it desirable.

ANCILLARY SERVICES

Planning for the provision of ancillary services in the new Medical Sciences Building raises many difficult issues. Questions of quality, cost, convenience, and income are involved. Physicians, patients, and the hospital all have a stake in the manner in which these services are provided. Depending upon whose interests are given the most weight, different ways of providing ancillary services will be preferred. Thus we wish to evaluate some of the alternative ways of providing ancillary services in terms of reliability, costs and convenience to the patient, and cost and convenience to the physician.

Because of the economies possible in larger scale operations, it seems likely that most x-ray and laboratory procedures could be performed more cheaply in centralized facilities than in individual physicians' offices. On the other hand, having these procedures done in centralized facilities will be slower and less convenient to both the patient and physician. Convenience and speed can be increased by having the procedure done in smaller facilities, closer to the physician's office. The smaller the facilities, the greater the speed and convenience will be, but the higher the cost and (perhaps) the less the reliability.

The point at which the benefit of having the procedure performed in a smaller facility outweighs the additional costs incurred will, of course, depend upon the nature of the procedure. We asked the physicians in the sample, based on their best judgments as to the likely cost, convenience, and reliability of each of the alternatives to indicate which of four alternatives they preferred for each of a number of procedures. In making their choice, they were to assume that they paid the actual cost of performing the procedure under each alternative and that they billed the patient. (We allowed for the possibility that in some cases the physicians might prefer one size facility for some of his patients but another size for other patients. However, the only physician who exercised this option was one internist who generally preferred centralized facilities, but wished smaller facilities available for an emergency.)

Of the four alternatives listed in Table 2, the ones labeled "Own Office" and "Central Facility" need no description. The other two alternatives were defined as follows:

Small Shared Facility. This small facility would be shared with 2 to 4 other physicians. It would be located so that patients and personnel could have easy access to it. Procedures performed in it might be done either by the physician's own personnel or by personnel whose salary expense would be shared with other physicians using the facility. Other expenses incurred in operating the facility would also be shared among the physicians using it.

Same Floor Facility. This facility would serve all of the physicians located on

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Own Office</th>
<th>Small Shared</th>
<th>Same Floor</th>
<th>Central</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hemoglobin</td>
<td>7 2</td>
<td>2</td>
<td>2</td>
<td>2 9</td>
</tr>
<tr>
<td>2. Hematocrit</td>
<td>7 1</td>
<td>2</td>
<td>3</td>
<td>2 9</td>
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<tr>
<td>3. White count</td>
<td>7 1</td>
<td>2</td>
<td>3</td>
<td>2 9</td>
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<tr>
<td>4. Differential count</td>
<td>7 1</td>
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<td>3</td>
<td>2 9</td>
</tr>
<tr>
<td>5. Routine urinalysis</td>
<td>7 3</td>
<td>2</td>
<td>2</td>
<td>2 8</td>
</tr>
<tr>
<td>6. Urea nitrogen</td>
<td>7 1</td>
<td></td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>7. Cholesterol</td>
<td>7 2</td>
<td></td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>8. Sedimentation rate</td>
<td>7 2</td>
<td></td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>9. Glucose</td>
<td>7 2</td>
<td></td>
<td>2</td>
<td>13</td>
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<td>10. Blood grouping</td>
<td></td>
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<td></td>
<td>11 13</td>
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<tr>
<td>11. Protein bound iodine</td>
<td></td>
<td>1</td>
<td></td>
<td>10 13</td>
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<tr>
<td>12. Potassium</td>
<td></td>
<td>1</td>
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<td>10 13</td>
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<td>13. Prothrombin</td>
<td>7 1</td>
<td></td>
<td>3</td>
<td>13</td>
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<td>14. Rh factors</td>
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<td></td>
<td>10 13</td>
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<td>15. Transaminase</td>
<td></td>
<td>1</td>
<td></td>
<td>10 13</td>
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<td>16. Uric acid</td>
<td>6 1</td>
<td></td>
<td></td>
<td>4 13</td>
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<tr>
<td>17. Cross match</td>
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<td>11 13</td>
</tr>
<tr>
<td>18. Throat culture</td>
<td></td>
<td></td>
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<td>11 13</td>
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X-ray

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<td>19. Chest</td>
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<td>3</td>
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<td>20. GI</td>
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<td>21. Skeletal</td>
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<td>11</td>
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<tr>
<td>22. Fiberoptoscope</td>
<td>7 1</td>
<td></td>
<td>7</td>
<td>13</td>
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Other

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<td>12</td>
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<td>24. EEG</td>
<td></td>
<td></td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>25. Hearing</td>
<td>2 1</td>
<td></td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>26. Vision</td>
<td>8 1</td>
<td></td>
<td>4</td>
<td>12</td>
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Note: If physician indicated that for certain types of tests (for example, simple vision) one location would be preferred, but for other types of tests (nonsimple vision) another location would be preferred, both locations were counted.
the same floor of the Medical Sciences Building. The number of physicians using the facility would thus be in the range of 15 to 20. Because of its size and because it could not be adjacent to all offices, the facility would need to be staffed by full-time technicians. Under these circumstances, it seems most reasonable that same-floor laboratory and x-ray facilities be operated as part of the corresponding hospital operations.

The physicians indicated their preferences about location for 26 different tests. Their replies are not easy to summarize, but certain generalizations can be made. There were sharp differences among specialties on preferences for where laboratory and x-ray services should be performed, as can be seen in the table. For example, 9 of 11 internists thought hemoglobin tests should be performed in the office or in a small shared facility, while 11 of 13 noninternists thought the same test should be performed in same floor or central facilities. And generally physicians not in internal medicine (especially surgeons) thought almost all procedures should be done in central facilities, while most internists wanted to perform a number of tests in their office. In particular, the internists wanted the ability to do routine blood tests, routine urinalyses, and a few other tests in or very near their offices. Internists unanimously wanted to do EKG’s in their offices, and most wanted to be able to do a chest x-ray and fluoroscopy there. For these tests the internists thought the speed and convenience of a small nearby laboratory outweighed any possible cost saving or increased reliability from having the tests performed in central facilities. Likewise, orthopedic surgeons indicated a need to do chest and skeletal x-rays in their offices.

Many of the internists with whom we spoke made it clear that unless they were given freedom to choose where laboratory and x-ray services should be performed they would not move into the Center. Thus, it is quite doubtful that many internists could be persuaded to move into the Medical Center unless they had a number of options concerning ancillary services.

As Table 3 shows there was also a divergence of opinion on the desirability of the hospital doing the billing for services done in the hospital laboratory and the desirability of the hospital laboratory’s charging higher than competitive prices. The picture that emerges from the questions and answers presented in Table 3 is that most physicians want the hospital laboratory to bill for the services it performs, although a few wish to bill for these services, and they feel strongly about it. (Those who voted “no” on alternative A.2 voted “yes” on alternative A.1.) Second, if the hospital’s charges are substantially above those of competitive laboratories, a considerable number of physicians want the option to send their work to other laboratories. Those physicians who voted “no” on alternative B.2 generally felt strongly about this. These responses indicate that it would probably be unwise to establish limits on the freedom of choice of physicians in the Medical Center with respect to these matters.

There is an additional consideration that may even be more important. The above discussion has assumed that the hospital’s laboratory and the outside laboratories are of equal quality. If for some reason the quality of the hospital’s
Table 3

Opinions on Laboratory Pricing and Billing Policies

Would you be willing to have all tests and procedures not done in your own office done in the hospital facility under the following circumstances:

A. The amounts charged by the hospital are competitive with surrounding laboratories and:
   1. You bill the patient? Yes: 5  No: 13
   2. The hospital bills the patient? Yes: 17  No: 3

B. The amounts charged by the hospital are substantially higher than those obtainable from local laboratories and:
   1. You bill the patient? Yes: 3  No: 14
   2. The hospital bills the patient? Yes: 10  No: 7

Note: For each question we asked how strongly (very, moderately, or not very) the physician felt about his answer. Most physicians indicated they felt very strongly about each answer.

Laboratory should slip below acceptable levels, it would be, in the words of one physician, “intolerable” to have a prohibition on the use of other laboratories.

From our conversations with the staff, we feel that most physicians in the Medical Center will use the hospital laboratory and x-ray facilities, assuming that they are of acceptable quality and are not overly expensive. This is natural, since many physicians do not want the responsibility of running a laboratory and the hospital’s laboratory will be more convenient for their patients than an outside laboratory. Nevertheless, we think the best way of ensuring that the laboratory and x-ray facilities do operate well is to allow the physician to use other facilities if he desires.

Sharing of Facilities

In a teaching unit, a small group of physicians would share a common waiting room and supervisory responsibility for teaching of one or two house staff in ambulatory care. These sharing arrangements will be easier and simpler as the offices of the physicians involved in the sharing arrangements are more interconnected. We asked our sample of physicians a number of questions about their willingness to share space and to have their offices interconnected with other offices. There was a considerable degree of variance in the answers to these questions; thus we conclude that it is important that the inner space of the office building be very flexible. This flexibility will permit open arrangements of space in teaching units where the senior physicians are agreeable, but will still permit privacy to be maintained for those physicians who demand it.
SUPPORTING SERVICES

Office practice of a physician comprises much more than simply the examination and treatment of patients. It involves a number of supporting services such as billing, accounting, purchasing, appointments, medical records, and nursing. We have considered a number of possible alternatives for the provision of these services in the Medical Center and obtained opinions from our sample of physicians on some of these alternatives.

Our basic conclusion is that the Medical Center may find it useful to offer some services, such as accounting, payroll, and purchasing, to private physicians located in the Center, but it should be at the discretion of each physician whether he wishes to purchase the services. We have found physicians quite capable of managing their practices. From our observations, personnel in private physicians' offices are usually kept busy — in contrast to the clinics we have studied, where excess personnel appear common. We believe, therefore, that it would be unwise to interfere with the ability of private physicians to manage their own business affairs.

In our questionnaire, we suggested the possibility that the Medical Center might be able to assist the physicians in obtaining a commercial medical billing service on more favorable terms than if each acted individually. Of our sample, over 70 percent indicated an interest in such an offer. If the Center offered a standard accounting for physicians located there, 50 percent of the sample said they would be interested in purchasing it. Likewise 50 percent would be interested in having the Center handle their payroll. Should such a system prove to be successful, it is likely that some of the other 50 percent would choose to subscribe.

QUESTIONS OF CONTROL

A number of physicians expressed concern that the hospital might try to influence their practice of medicine. While the concern is understandable, other experiences with physicians' offices in hospitals have shown that "hospital offices have not led to improper institutional control over private medical practice. Professional policies and procedures remain the responsibility of the medical staffs of the institutions." We suggest that professional policies and procedures in the new Medical Center remain the responsibility of the medical staff. At the same time, it is reasonable to insist that tenancy in the building be contingent upon membership in good standing of the hospital staff.

4 C. Rufus Rorem, Physicians' Private Offices at Hospitals, American Hospital Association, Chicago, 1959, p. 75.
Appendix

CLINIC AND PRIVATE PHYSICIAN COSTS

The striking differences in overhead costs between the clinics and private practice naturally leads to questions about the representativeness of our sample of clinics and private practitioners, and about what kind of costs are included in the calculations. Of course, the only way that representativeness can be settled definitively is to gather data from additional clinics and practitioners. We hope this Memorandum stimulates that effort.

As to our study, this appendix details what costs are included and how we gathered these cost data. For private physicians each employee filled out a questionnaire that asked her to allocate her time among ten activities: appointments; receiving and registering; billing and cashiering; accounting; medical record filing; x-ray procedures; laboratory tests; ECG tests; vision and hearing tests; and "other work" tasks. Each task was carefully defined for the employee. The physician supplied the amount of the employee's salary, and the salary was allocated to the various tasks. We excluded ancillary services cost (x-ray, laboratory, ECG, vision and hearing) from total overhead, and calculated the remaining overhead costs for each physician. These were divided by his monthly office visits in October 1969 to arrive at an average cost figure for each physician.

The cost figures shown in Table 1 (p. 5) are weighted averages of the costs of 20 physicians in the sample, using the proportion of total visits in the sample associated with each physician as weights. Thus, the figures show the expected costs that any patient chosen at random from the patients of the physicians in the sample would have to bear. The final figure arrived at for total overhead costs, $4.54, excluding rent, appears a little high. An overhead percentage of 40 percent (including rent) applied to a visit charge of $12 will produce a slightly lower figure. Still, if the true figure for all physicians is lower, the differences between private practice and the clinics are that much greater.

For the clinics, insofar as was possible, we calculated the actual amount of personnel time going into each separate task and, using actual wage rates, made our own cost estimate. In two of the three cases the Outpatient Department was charged
with some of the overhead of the entire institution. In one case these costs were less than 10 percent of total non-physician costs in the Outpatient Department. In the other case such costs were slightly over 20 percent of total non-physician costs. In the latter case, however, fringe benefits and telephone charges were charged as overhead (and comprised most of the overhead costs). Thus, while there is a certain amount of arbitrariness in the clinic figures, we feel that they are not merely accounting figures, but do reflect the resources used to produce clinic visits.