

Internships and Residencies
in New York City, 1934-1937
Their Place in Medical Education

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REPORT BY
THE NEW YORK COMMITTEE ON THE STUDY
OF HOSPITAL INTERNSHIPS AND RESIDENCIES
JEAN ALONZO CURRAN, M.D., *Executive Secretary*

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NEW YORK COMMITTEE ON THE STUDY OF HOSPITAL INTERNSHIPS AND RESIDENCIES

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Cornell University Medical College Association

HAROLD J. STEWART, M.D., Attending Physician, New York Hos-
pital

WILLIAM E. STUDDIFORD, M.D., Director of Gynecology and Ob-
stetrics, Bellevue Hospital

JEAN ALONZO CURRAN, M.D., *Executive Secretary*
1300 York Avenue, New York, N. Y.

* Deceased June 1, 1937.

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HERBERT F. TRAUT, M.D., Attending Gynecologist and Obstetrician, New York Hospital

PREFACE. The Task of the Committee

WHEN a comprehensive study of internships and residencies in New York City was first proposed, it was recognized that such a study would be worth while only if it pooled the experience and best judgment of the groups most closely concerned with the training of the physician. The field had already been explored by each of the local medical colleges and by the New York Academy of Medicine through its Committee on Medical Education, but their reports were necessarily of limited scope and objective. It was also apparent that the task of organizing a comprehensive study would overtax the resources of a single agency. Responsibility for the undertaking was therefore assumed by a joint committee, representing the College of Physicians and Surgeons of Columbia University, Cornell University Medical College, Long Island College of Medicine, New York Medical College and Flower Hospital, New York University College of Medicine, and the New York Academy of Medicine.

The committee was organized in 1934 as the New York Committee on the Study of Hospital Internships and Residencies, and the late Dr. John Wyckoff was elected chairman. Under his inspiring leadership a plan was outlined for the study of internships and residencies in the approved hospitals of all five boroughs of New York City.

The carrying out of this program and the publication of the Committee's report were made possible by a generous grant from the Commonwealth Fund.

The study owes much to Dr. Wyckoff. Associated with New York University College of Medicine as Dean, and with Bellevue Hospital as a director of medical service, he con-

tributed a wide knowledge of every aspect of medical education. His sound judgment and gift of organization were invaluable in planning the program, and his understanding of the human situation greatly facilitated the work of those who carried it to completion.

The major task of assembling the material by means of visits to hospitals and conferences with staff members and other physicians, of analyzing the reports of the subcommittees, and of preparing the final report has been the responsibility of Dr. Jean Alonzo Curran, executive secretary of the Committee. Mrs. Rachel F. Saint has been of great assistance to him in the statistical analysis of the material, and Miss Katherine L. Russell, in the compilation of the data and the preparation of the report.

The Committee is indebted to Dr. William D. Cutter, Dr. Carl M. Peterson, and the other members of the secretarial staff of the Council on Medical Education and Hospitals of the American Medical Association for their helpfulness in furnishing needed information on special items and modes of survey.

Thanks are due to Dr. S. S. Goldwater, Commissioner of Hospitals, and to the members of his staff for essential assistance in providing introductions to the municipal hospitals and in supplying data concerning these institutions.

The Committee wishes to express its appreciation of the cooperation given by the medical boards, superintendents, clerical workers, attending staffs, residents, interns, and other personnel of the hospitals. There was commendable frankness in facing local difficulties and willingness to assist in the task of working out solutions.

In collecting and analyzing such a vast amount of statistical material, the Committee has been most fortunate in securing the expert assistance of Dr. Lowell Jacob Reed, Pro-

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fessor of Bio-statistics, Johns Hopkins University School of Hygiene and Public Health. Without a clear presentation of data, it would have been impossible to formulate intelligently the modes of procedure recommended by this report.

Acknowledgment is also due to Dr. H. G. Weiskotten for the assistance received from his pioneer work on the application of internship and residency experience to conditions of practice.

FRANK L. BABBOTT, M.D., *Chairman*
New York Committee on the Study of
Hospital Internships and Residencies

February 1938

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INTRODUCTION. The Purpose and Scope of the Study

THERE has been a growing realization that education of the intern and resident can no longer remain suspended, like Mohammed's coffin, in mid-air, but must seek attachment to its natural foundation in the highly organized preparatory program of the medical colleges. Internships and residencies have remained isolated because of confusion existing in the minds of the medical profession and the supporting lay public as to the purpose of the experience. Failure to recognize that the experience is essentially educational has been the cause of the resistance encountered by the American Medical Association in its attempt to spur the hospitals to the point of meeting at least the minimum essentials of good intern training. The setting up of standards and the dividing of hospitals into approved and unapproved groups has not been sufficient. The internship will not be a purposeful experience until a closer tie-up with the whole basic scheme of education has been achieved by means of a better working understanding between the medical colleges and the hospitals and a clearer definition of objectives.

The hospitals for over a century have enjoyed the privilege of intern service as an aid to the care of their patients. In return for this privilege, the hospitals have a responsibility for intern education. The essence of the problem as determined by this study is a realization on the part of the hospitals that this responsibility must be fully met. It is the due of the interns, and it is the duty of the hospitals.

When hospitals ceased to be purely institutions for the care of the sick and undertook the responsibility for part of the medical educational program, the status of the intern should

have been fundamentally changed. Unfortunately, the issue was not squarely faced, and a period of temporizing began. The educational value of the intern's training remained largely incidental. If he was associated with men who were natural teachers, and if he had natural ability for learning, he undoubtedly received very definite educational advantages. If, on the other hand, the hospital in which he became an intern did not have on its medical staff natural teachers, the intern suffered accordingly. Not infrequently he was rather less well equipped at the end of his internship than he had been at the end of his medical school experience. A realization of the situation has existed, and the problem has been discussed in publications of local and national distribution without bringing about any appreciable change in the educational value of the internship.

In New York City the problem has been further complicated by the very large number of hospitals and house staffs concerned. All efforts at solution on the part of local organizations have fallen short, owing to the lack of complete factual data on which to base the necessary formula for improvement. Behind the effort necessary to put into operation a program for changing the intern from a quasi hospital servant to a graduate student was the thought that nothing could be accomplished until hospital authorities and medical boards not only recognized their responsibility as a part of the educational scheme, but were willing to accept this responsibility and take steps to make their cooperation effective. It was felt that this could be brought about only by a thorough detailed study of the entire subject of internships and their related residencies as they exist in seventy-seven hospitals in New York City. While many of the data that have been accumulated in this report were known in a general way to those most interested in the subject, this knowledge was not defi-

nite enough to use as an argument in persuading responsible individuals that a definite change must take place before the intern will pass successfully from the medical school through the period of the internship, on to the continued education which must be a part of his experience as a medical practitioner.

It is the hope of the Committee that this report, by emphasizing the fact that the hospital internship and residency must take their proper places in the general scheme of medical education, will awaken the hospitals to the necessity of training physicians who will be better fitted to assume the responsibility for the care of the sick and the advancement of public health. In other words, if hospital authorities and medical staffs are not stimulated to carry forward this idea, the study and the report will have failed of their purpose.

It is hoped that the reader will carefully consider the glossary of terms following this introduction. At an early stage of the study it became evident that satisfactory discussion of hospital situations with hospital boards or medical staffs would be impossible unless a clearer definition of terms could be established. While the Committee recognizes that the definitions adopted by it may not find full approval throughout the country, it is of the opinion that they are sufficiently clear to avoid any confusion of thought in the reading of the report.

METHOD OF STUDY

In the original project, the Committee intended that the survey should include only the New York City hospitals approved by the American Medical Association. Fortunately, it was possible to make the scope of this study more inclusive. An effort was made to examine all internships and residencies in the city, irrespective of status, and with a few unimportant exceptions this was accomplished. In addition, selected insti-

tutions in neighboring areas were visited in order to obtain a more representative picture.

The plan of investigation was based upon previous studies of internship and residency education. Valuable guidance was obtained from the deans' offices of the five cooperating medical colleges. For some years, data had been collected through questionnaires to graduates and hospital superintendents as the basis for advice given to fourth-year students seeking internships. The questionnaire outlines were helpful in formulating the outline of the present study. Also, the Committee on Medical Education of the New York Academy of Medicine, over a period of several years, had taken as its major objective a thorough exploration of all phases of the graduate and postgraduate fields. Incidental to this, a preliminary reconnaissance of internships in 1932 had included six special and nine general hospitals.

The information obtained from these sources indicated plainly the need for a more far-reaching and detailed investigation. It was realized that before an acceptable program for qualifying either specialists or general practitioners could be evolved, a thorough understanding of the basic internship was essential.

Naturally, the reports of the American Medical Association published since 1914 have been of the utmost value. An approach to the study of graduate education during hospital residence would be futile without an understanding of these contributions which have been made on a national scale. The criteria established for acceptable internships and residencies were studied carefully.

A preliminary plan of study was given an exhaustive trial in the Bellevue Hospital. This hospital proved to be an ideal testing ground, for within its confines was to be found nearly

every type of service, internship, and residency. From this experimental beginning a final outline of survey was devised.

The mode of procedure was as follows:

Previous to the actual hospital visit, care was taken as to proper approach. In the case of the municipal institutions, a letter of introduction from Dr. S. S. Goldwater, Commissioner of Hospitals, secured every possible cooperation. In the case of the voluntary hospitals, a letter from the chairman of the Committee was productive of an equally cordial reception.

On the day of the first visit, an interview with the superintendent or medical director was obtained for the purpose of explaining the objectives of the Committee. Essential facts as to hospital organization were recorded in systematic form. In addition, blanks were furnished for a record of hospital statistics, and a list of such activities as conferences, clinics, medical rounds, and formal meetings. A register of the names and rank of all members of the attending and house staffs was requested in order to learn their status and arrange interviews. Care was taken to obtain copies of annual reports, intern procedure books, case record outlines, and similar printed material covering hospital methods. In this manner it was possible to organize a systematic approach to the educational problem of the individual hospital.

Next, an inspection of the entire building was undertaken, including all pavilions, laboratories, special diagnostic and therapeutic facilities, record room, library, and house staff quarters. In this way, a general picture of the institution was obtained. With experience, a great many valuable observations may be made during such a tour.

Since the schedule of survey permitted a visit of days or weeks, depending on the size of the hospital, it was possible

to attend a considerable number of formal and informal ward activities, clinics, operations, obstetric deliveries, conferences, lectures, seminars, and clinical society meetings. Perhaps the most important task of any educational survey is to witness the program in actual operation and estimate its virtues and shortcomings. Indeed, the value of subsequent conferences with individual staff members was greatly enhanced by the privilege of seeing them at work. The weekly and monthly staff conferences were of special importance in appreciating the spirit and plan of a service.

A careful estimate was made of the factors entering into the success of these activities from the point of view of the house staff. Certain points were particularly investigated.

1. *Concerning the interns:* Their attitude toward the hospital, the patients, the nursing group, the attending staff, and each other; the quality of patient care shown, particularly by records kept and knowledge of cases displayed at rounds and conferences; the organization of initial instruction and continued supervision of interns in their duties; whether the house staff was adequate in number to sustain high standards of work, and whether their time was properly planned; whether house staff spirit and initiative resulted in reading from special interest, in group case studies, or in seminars.

2. *Concerning the attending staff:* Inquiry was made as to their qualifications, their willingness and ability to instruct the interns, their attitude toward patients, and their general morale. Estimation of the teaching potentialities of this group under any plan of graduate education is a factor of paramount importance.

3. *Concerning the administration:* Of special significance were the vision and sense of responsibility of the superintendents and directors as to their function as guiding spirits and coordinators of intern education. Furthermore, it was neces-

sary to learn the success of provisions for intern health, housing, food, and recreation.

Through the courtesy of each hospital, it was possible to obtain conferences with representative members of the administrative, attending, resident, intern, nursing, and social service staffs. Information was recorded on a form which had been prepared so that the information obtained could be used for comparative analysis. The house staff members were asked to fill out an extensive questionnaire, and each completed form was subsequently checked at a personal interview.

It should be recorded that all the personal interviews were by the same individual, so that variation in interpretation of data obtained was reduced to the minimum.

At the conclusion of the survey of each hospital, an extensive report was submitted to the Committee. Since this report was prepared according to a fixed outline while the situation was vividly in mind, a comprehensive recapitulation was made available for comparative studies. The majority of the hospitals were anxious to have the benefit of a report of the findings of our survey. A report entitled "Hospital Assets and Liabilities," covering the strong and weak points of the hospital's plan of house staff education, was given to each hospital at a follow-up interview. By personally presenting this report, an opportunity was given to check assembled findings in the light of criticism received from the medical board and the superintendent. Re-surveys were carried out when indicated, in order to insure accuracy of conclusions. Judging by the reception accorded these follow-up reports, there was a keen interest in the subject of intern and resident training throughout the hospital field. Furthermore, there was ample evidence of a sincere desire to assist in the common task of promoting a more adequate graduate program.

At the regular monthly meetings of the main Committee,

from the very beginning of the survey, there was a group check and criticism of methods and findings. Also, since the task was of such magnitude, it was necessary to enlist the aid of a large number of other representatives in the New York field of medicine. They were asked to serve on subcommittees, and they gave essential guidance and advice in the compilation of the report.

The personnel of the subcommittees was drawn from experienced physicians holding responsible positions in New York City hospitals, and for the most part actively engaged in medical education. In submitting reports on the various phases of the study, they gave due consideration to all the material that had been obtained in the survey. However, it was not to be expected that they could completely differentiate between their reactions to the material studied and their convictions based on years of experience in dealing with interns and residents. For this reason, the reader will recognize in some instances that the views expressed are perhaps broader than could with certainty be deduced from the facts collected in the study. Wherever it was possible to draw a clear distinguishing line between the two, this has been done. Where it has not been possible to do this, an attempt has been made to avoid confusion of thought by clarity of expression. This method of procedure has the advantage of putting a proper interpretation upon statistical data, rather than being too closely bound by the narrow confines of the purely analytical method.

The subcommittees, not content with local findings only, circularized leaders in special fields throughout the country in order to obtain the benefit of their experience. Consequently, the reports prepared by these several special committees have much more than purely local significance.

As a separate project, letters were written by the deans of

the cooperating medical colleges to a large group of their graduates, covering the years from 1919 to 1931. A questionnaire was enclosed asking them to record the type and extent of their house staff training and its value as applied to their practice. The very gratifying response to this questionnaire is an additional evidence of the wide interest in the subject. Analysis of the material has shed valuable light on the problem from the point of view of previous interns and residents.

CONTINUATION OF THE COMMITTEE'S WORK

The understanding and cooperative relations which were developed between the medical schools and the hospitals during the progress of the study have made it clear that a continuation of the Committee's work will be of value to medical education and to standards of service. The factual information and the analysis of the problems which are set forth in the report offer a basis for further progress. Accordingly, the New York Committee on the Study of Hospital Internships and Residencies plans to maintain its organization permanently in order to gather current data from local hospitals where internships and residencies are available for graduates of medical schools. The Committee will continue to be representative of the various medical schools and other groups concerned with the training of the physician. It plans to encourage the continued improvement of services for interns and residents, to re-survey such services from time to time, and to make available to those responsible for the guidance of students information relative to internships and to residencies and other opportunities for graduate medical education.

GLOSSARY OF TERMS

ONE of the most difficult tasks which confronted the Committee was an accurate definition of terms. It was immediately apparent that no common coin existed in New York City as to the meaning of such familiar terms as graduate and post-graduate education, interns and residents, and rotating and mixed internships. To give the reader a clear idea of the sense in which terms are used in this book, a list of their meanings as evolved by the study is appended. The Committee is not trying to set up definitions for general application, but is merely explaining their use in this report.

Graduate education comprises all full-time hospital training received subsequent to graduation from the internship, and formal study of an organized, long-term type under the jurisdiction of the faculty of an approved medical school. It is designed to prepare the physician to begin the practice of a specialty, and includes residencies, fellowships, and other arrangements acceptable to the qualifying boards or to universities granting advanced degrees. The point must be emphasized that the requirements of graduate education cannot be met by a simple accumulation of any number of short post-graduate courses.

An *internship** is a period of service as a member of the hospital staff while residing in the hospital and receiving a period of formal education subsequent to graduation from medical school. The experience may prepare men for general practice or for advanced special training.

A *straight internship* is one in which the entire term is

* For more detailed discussion of the various types of internships, see Chapter I, pages 13 to 17.

spent in a single branch of medicine; it may include the specialties of that branch.

A *mixed internship* is defined as one in which the intern spends one or more years on two or three services.

A *rotating internship* is defined as one in which the intern spends one or more years on more than three services.

A *special internship* is one which is carried out on the service of a specialty, following a regular internship. It may be either straight or mixed in form. Its function is to give additional experience in one particular branch.

A *houseship* represents an additional period of training on one of the services during the senior year of the internship. Presumably it indicates a special interest.

Residency. The preparation for the residency includes, first, certain basic intern training, followed by special intern or assistant residency training, which should include sufficient grounding in medicine and surgery to ensure adequate development.

A residency with the above prerequisite provides experience as a responsible house officer, in a limited field, for a period of not less than one year and preferably for two or more. In addition to responsibility for continuity and high quality of service, there should be opportunities for basic science correlation, clinical investigation, and research. Instruction and supervision of the interns will be a clearly understood obligation.

It is explicitly stated that the term resident does not include those serving merely as paid assistants on private services. These men have been designated private assistants.

The *fellowship* is similar to the residency in content and objective, but usually places more emphasis on special studies and research. There is not as much administrative responsibility, and residence in the hospital may or may not be in-

cumbent. Fellowships, as a rule, are to be found in institutions with a definitely academic background.

According to the Council on Medical Education, "Clinical fellowships are distinguished from residencies as being extended periods of graduate study, under university control, which are provided for by endowment or other financial arrangement. They usually, though not always, involve the performance of original investigative work and frequently the fulfilment of definite requirements for advanced degrees."

Private assistant is the designation used by the Committee to describe a house staff member who serves merely as a paid assistant on a private service.

Postgraduate education includes all efforts on the part of the physician to improve himself in the art and science of medicine while he is engaged in practice. It includes short courses, attendance at meetings, service on hospital staffs, and all efforts directed toward self-improvement.

Teaching hospital. In this report the term has been applied only to hospitals with an organized program for teaching medical undergraduates on all services. In most instances the students serve as clinical clerks. The institution may or may not be under university control.

Affiliated hospital. Affiliated hospitals have been considered as those furnishing medical-student teaching on one or more services, under the supervision of one of the five medical colleges of New York City.

Nonteaching hospital. In this report the term has been applied to hospitals without arrangements for teaching organized sections of medical students. Such hospitals may have well organized systems for teaching interns and residents but have no affiliation with medical schools for giving instruction to undergraduates.

The term *director* is used to designate the head of a serv-

ice; it carries the same meaning as chief of attending staff. Where the administrative head of an institution is mentioned, he is called the superintendent.

A *clinical clerkship* is an undergraduate assignment, usually during the third or fourth year of medical school. The student is allowed to participate in the diagnostic studies of patients and to follow their subsequent course at the bedside. Clerking serves as a valuable introduction to the internship.

CHAPTER ONE. Resources for Intern and Graduate Education in New York City

A PERIOD of hospital training as an intern is considered an essential part of medical education. However, there has been a growing feeling among the groups concerned that internships as now presented have been an inadequate introduction to practice. Physicians engaged in practice have discovered flaws in their internship preparation. There has been genuine concern on the part of the medical colleges regarding the difficulties encountered by their graduates in securing suitable internships. Senior classes have had their year disrupted by the uncertainties and vicissitudes incidental to internship selection. Hospital medical boards and superintendents, faced with the practical necessity of fitting an educational program into the workaday world of ward and clinic, have frequently been left on the horns of a dilemma. There has been too much interest in what the intern could do for the hospital, and too little consideration of what the hospital could do for the intern. Advanced training, as special internships, residencies, and fellowships, has been in the experimental stage, without uniformity of plan or purpose. Intern groups have suffered from lack of guidance and clearly defined objectives, and have frequently made poor use of their opportunities.

Since the internship is merely one phase of medical education, it is necessary to review briefly its background and objectives. The education of a doctor of medicine has for some years followed a fairly standardized pattern. After a prescribed period of premedical collegiate preparation, medical schools have been forced to the task of compressing all of

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modern medicine into a four-year course. In New York state this formal period has ended with the granting of the medical degree and the termination of university responsibility.

Although additional training has not been required either by the colleges or by state law, the necessities of practice have resulted in a general acceptance of the internship as an essential supplementary experience. Also, to a varying degree, education of physicians has advanced by means of residencies, fellowships, special courses, and voluntary service on hospital staffs. The student period, from the beginning of the pre-medical course to the end of the internship, has averaged from eight to ten years. Few other professional careers demand so long and arduous a preparation, and one might expect an almost uniformly adequate medical qualification. If such is not the case, there is reason enough for a most serious reconsideration of every step of the process.

During the past three years, through the agency of the Council on Medical Education and Hospitals, the Association of American Medical Colleges, and the Federation of State Boards of Medical Examiners, a reevaluation of undergraduate medicine has been completed by means of a survey of all the medical colleges of the United States and Canada. Each college has been given a report portraying its strong and weak points, which serves as a guide to necessary reforms. Remedies sought will not entirely meet the issue, however, unless the direct relationship of internship to undergraduate education is taken into account. Herein lies the cause of the difficulty—curriculum committees have lacked the necessary information about the content of internships on which to base a more far-sighted policy.

It is true that a fund of information does exist. For years the Council has been carrying on a continuous survey of the hospitals on its approved list, and its findings have been pub-

lished annually in the Education Number of the *Journal of the American Medical Association*. By setting up minimum standards, the Council has given valuable guidance to prospective interns and residents. Nonetheless, a fundamental problem has remained—lack of first-hand knowledge by medical college deans of the internships and residencies to which their graduates go. To obtain this knowledge required more time and effort than the average medical school was able to give. Machinery had to be set up for a group project, by which the educational institutions located in a natural geographical subdivision could be brought into intimate contact with the hospitals in the locality. In this way, the preliminaries of medical education could be directly tested in the laboratories of their application, namely, the local internships and residencies.

An intensive study of internships and residencies in New York City has been possible only because of the earlier and more comprehensive studies made by the Council on Medical Education and Hospitals of the American Medical Association and by that remarkably complete work, the *Final Report of the Commission on Medical Education*.* It is doubtful if these agencies have neglected any aspects of the general problem. The American Medical Association after many years of effort has thoroughly awakened the profession to the necessity for better organization of hospital resources for medical education. The rapidly increasing amount of published material within the past three years is evidence of the growing interest.

Special mention should be made of the contribution by the Commission on Medical Education. Its report, covering many phases of American and European medicine, struck a new note by first emphasizing the ultimate purpose of all medical

* New York, Office of the Director of the Study, 1932.

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education—to satisfy the medical needs of the community. It visualized the necessary educational *modus operandi* by simply reasoning backward, step by step, from the point of final utilization of all training to the beginning of the process. Such a concept permits teaching to be purposeful and systematically planned, instead of proceeding along traditional and dogmatic lines.

It was the feeling of the New York Committee on the Study of Hospital Internships and Residencies that each large center in the country had a mandate to study its own local internship and graduate educational problem. In a given area, a thorough understanding of the educational factors can be obtained only through the college and hospital staffs that are in first-hand contact with the situation. This necessary understanding cannot be achieved by disjointed efforts, with each college and hospital setting an independent course. There must be carefully planned correlated effort.

The survey of internships and residencies in New York City had exactly this object in view—to find out to what extent the generally accepted principles of intern and graduate medical training had been applied, to learn the cause of failures, and to suggest possible ways of achieving the ideal in these fields of medical education. If new principles are brought forth, they are merely incidental to the main objective of the study.

With this object in mind, the organized study of internship and residency training in the hospitals in New York City was set in motion. The five medical colleges, with their vital interest in the continued education of their graduates, and the New York Academy of Medicine, with its graduate program and wide representation of the hospitals in its membership, were the forces naturally elected to direct the investigation. Their resources were mobilized through the organization of

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the New York Committee on the Study of Hospital Internships and Residencies.

The first task of the Committee was to make a thorough exploration of obvious leads revealed by previous studies. Over a period of years the local medical colleges have been compiling data as to internships and perfecting methods for the collection of such material. These studies indicated very clearly a great many traces of educational ore worthy of intensive prospecting. A preliminary survey of fifteen hospitals in the city by the Board for Advanced Medical Education of the Academy of Medicine had been able to point to many defects in the internship system. Obviously the criteria issued by the American Medical Association concerning acceptable internships and residencies, the lists of such appointments published annually, and the numerous articles and editorials published in the *Journal of the American Medical Association* have been basic to a critical study of the local situation.

SCOPE OF THE SURVEY

It is difficult to give the exact number of hospitals in New York City because of the tendency to group hospitals into large medical centers, each hospital retaining its old name and a separate board of control. However, for the purposes of this survey each of the medical centers has been considered as a single hospital. On this basis, in 1936 there were 182 hospitals in New York City offering internships, residencies, and other opportunities for hospital training. The seventy-seven whose internships and residencies were at that time approved by the Council on Medical Education have all been studied in this survey.

It was thought that the 105 hospitals not approved by the Council should also be considered in a comprehensive sur-

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vey of the hospital experience obtained by physicians in New York City, and therefore twenty-two of these hospitals, selected on the basis of their size and the number of doctors on their house staffs, were invited to cooperate. Twenty of these permitted the Committee to make a survey and their cooperation provided a sampling of the group sufficiently large for discussion. The situation with regard to the house staffs in these institutions is covered in Appendix 2.

The Council on Medical Education and Hospitals listed a total of 1,760 approved internships and residencies in New York City in 1936. This was exclusive of fellowships and other special graduate arrangements of nonresident status. Since the total house staff population for the entire country was 9,599, it is readily apparent that the house staffs in the approved New York hospitals represent over one-sixth of the entire group. In addition there were 384 interns and residents in approved hospitals adjacent to Greater New York, but these are not included in the present survey.

In the 105 unapproved hospitals there were 240 individuals on the house staffs in 1935; of these 115 were serving in the twenty hospitals that participated in the survey.

HOSPITALS APPROVED BY THE AMERICAN MEDICAL ASSOCIATION

All hospitals which accept the responsibility of house staff education are in reality teaching hospitals. This implication is inescapable. However, no satisfactory method has existed for classifying them by the quality of instruction given their interns or residents. Only an indirect approach is possible, and that a quantitative one—a classification by the extent to which clinical resources are utilized for the teaching of undergraduate medical students. Theoretically, interns and residents in a hospital associated with a medical school will benefit from

the planned teaching curriculum offered to undergraduate students, with an inevitable stimulus to higher medical standards of work. Furthermore, it is generally recognized that an undergraduate teaching program promotes better standards of medical care because the hospitals must meet the additional requirements of the medical colleges.

On the basis of this assumption, the approved hospitals studied were divided into three groups: "teaching" hospitals, those offering instruction to undergraduate medical students on all services; "affiliated" hospitals with student sections on one or more services; and "nonteaching" hospitals with no undergraduate contact. They are listed according to their status in 1935 and 1936.

"TEACHING" HOSPITALS

The twelve institutions listed in this category are divided equally between those that are of the voluntary type and those that are tax-supported. The group includes the following hospitals:

<p>Bellevue Columbia University-Presbyterian Medical Center, including Presbyterian and Babies Hospitals, Sloan Hospital for Women, and Ophthalmic Institute Coney Island Flower-Fifth Avenue Jewish Kings County Long Island College</p>	<p>Metropolitan New York Hospital-Cornell Medical Center, including Payne Whitney Psychiatric Clinic and the Society of the Lying-in Hospital of New York Neurological Institute of New York New York State Psychiatric Institute Willard Parker</p>
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Giving students access to patients and furnishing lectures by members of the attending staffs are only two of the serv-

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ices offered to medical students by a teaching hospital. Just as important is the introduction of third or fourth-year students as clinical clerks under university supervision. On all general services, the clerks become in reality members of the staff and have initial responsibility for survey of the patient's problem through the preliminary history, physical examination, and laboratory tests. Their success as diagnosticians is then tested successively by the interns and residents, who perforce become student instructors, and by members of the attending staff. The patient's progress is followed at daily rounds, formal ward tours, and conferences, in all of which the student has a recognized place.

In certain of the special hospitals, particularly those dealing with contagious disease, the teaching may be systematically planned and under university discipline, but the usual clerkship may not be feasible. In the case of patients with contagious diseases, it is not possible to give the students the same degree of responsibility. Nevertheless, primary consideration is given to the students' needs, and these hospitals deserve inclusion in the teaching group.

Since appointment to the attending staff of a teaching hospital carries with it academic ranking on the college roster, the element of university discipline becomes a factor. Not only can more be required of an individual holding such an appointment, but he is brought into intimate contact with the stimulating influence of a medical faculty. He must keep abreast of medical progress or lose his position. As a consequence, his students and house staff have the advantage of a competent and progressive preceptor.

A further advantage of a teaching service has been the provision by some colleges of modest stipends to attending staff members able to give extra time to teaching.

The suggestion has been advanced frequently that the

remedy for present defects in the house staff program would be to bring all recognized hospitals under university teaching discipline. While such a solution of the problem may seem a desirable one, it is out of the question from a practical point of view. Such an extension of medical college administrative responsibility would render its influence so dilute as to be wholly ineffective. Furthermore, the colleges would not be able to utilize properly so vast an amount of clinical resources. It must also be remembered that each hospital group has its own plan of advancement through which staff members hope to win promotion as a reward of their efforts. Reservation by the colleges of the right to make staff appointments would not be welcomed on so extensive a basis.

“AFFILIATED” HOSPITALS

There is an alternative solution in the extension of a teaching influence to the hospital. It comes about through the recognition by the colleges of certain services as suitable for student instruction. To a considerable degree the remarks made about teaching hospitals as a whole apply equally well to these separate services. The house staff members receive a corresponding benefit from contact with students and their instructors. To a limited extent there is diffusion of the stimulus throughout the hospital. The arrangement also has the virtue of elasticity, permitting the colleges to obtain additional facilities as needed.

In New York City, varying modes of undergraduate and graduate affiliations have been achieved by the twenty-one hospitals listed below, fourteen of which are voluntary and seven municipal:

Beth Israel	Greenpoint
Brooklyn	Harlem
Brooklyn State	Kingston Avenue

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Lenox Hill	*New York Post-Graduate, including Reconstruction Unit and New York Skin and Cancer Unit
Lincoln Memorial	
Methodist Episcopal	
Montefiore	New York Society for the Relief of Ruptured and Crippled
Morrisania	
*Mount Sinai	Roosevelt
New York Eye and Ear Infirmary	St. Luke's
New York Orthopedic Dispensary and Hospital	St. Vincent's, New York Sea View

"NONTEACHING" HOSPITALS

In forty-four of the total seventy-seven approved hospital units, there is at present no undergraduate student contact. A few of these hospitals have the advantage of the services of attending staff members who occupy positions on medical faculties or who are engaged in postgraduate teaching. The remainder have been largely dependent on their own vision, ideals, and powers of self-discipline in evolving a satisfactory educational program. This group includes thirty-five voluntary hospitals and nine that are tax-supported, including two federal institutions.

Beth David	Flushing Hospital and Dispensary
Beth El	
Beth Moses	Fordham
Bronx	French
Bushwick	Gouverneur
Caledonian	Harlem Eye and Ear
Central Neurological	Herman Knapp Memorial Eye
City	Hospital for Joint Diseases
Columbus	Israel Zion
Cumberland	Jamaica

* Affiliated with undergraduate schools, but for graduate and postgraduate teaching only.

The Approved Hospitals

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Knickerbocker	St. Francis
Lebanon	St. John's, Brooklyn
Manhattan Eye, Ear, and Throat	St. John's, Long Island City
Mary Immaculate	St. Mary's
Misericordia	St. Peter's
New York City Cancer Institute	St. Vincent's, Staten Island
New York Foundling	Staten Island
New York Infirmary for Women and Children	Sydenham
*New York Polyclinic	Trinity
Norwegian Lutheran Deaconesses'	United States Marine, Ellis Island
Queens General	United States Marine, Staten Island
St. Catherine's	Woman's
	Wyckoff Heights

Some of these hospitals have achieved commendable standards of work, and by their achievements in meeting difficulties have made valuable contributions to medical education. For example, one hospital has instituted a system of such excellent quality for training the house staff in antepartum and postpartum methods that any institution in the country might be proud to equal it. In another, organized follow-up of cases with house staff participation is equal to that in most university hospitals. Earnest efforts have been made by certain of these hospitals to formulate comprehensive programs for intern education.

However, since financial resources, degree of organization, and effectiveness of administration vary considerably, it is to be expected that educational atmosphere and quality of medical service will vary correspondingly. There is frequent isolation of individual hospitals, since there exists no local coordinating agency. Loss of educational contact, not only with the colleges but with other hospitals as well, has resulted in a

* Independently organized postgraduate teaching program.

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tendency toward provincialism of viewpoint, unprogressiveness, and actual stagnation. This has been particularly true of attending and house staff groups who seldom visit other hospitals. In some cases, former interns make up the majority of the visiting staff, and there is created a serious danger of medical inbreeding.

The problem for a majority of this group is basically that of the smaller hospital with limited clinical resources. For the most part, services are handicapped in achieving desired standards by rotation of both the attending and intern staffs on duty. Frequent changes in personnel have resulted in a break of continuity and a consequent "saw-tooth" curve of efficiency.

Although the presence of an undergraduate teaching program is of vital importance in the educational experience of the intern, there is a need in both the teaching and the non-teaching hospitals for a program or curriculum designed to meet the needs of the intern as distinct from the more elementary requirements of the student. At best, formal teaching exercises for students have proved of scant benefit to the house staff. Interns are usually too busy to attend lectures held during daylight hours, and they are likely to consider them of an elementary nature. Even bedside student instruction is seldom of benefit to the intern, since he is occupied with other duties. Frequently medical faculties have been so busy with the routine requirements of the undergraduate curriculum and with their own research interests that they have had little or no time left for their interns.

TYPES OF HOUSE STAFF APPOINTMENTS IN THE APPROVED HOSPITALS

There has been no uniform definition of the various types of advanced medical training available in hospitals. Besides

the lack of differentiation between residencies and internships there has been confusion in the terms applied to residencies of different ranks. Men of junior rank have been called assistant or junior residents, while the seniors have been designated senior residents, chief residents, house residents, or simply residents. Complete standardization is not desirable, but greater uniformity in the terms applied to these positions would aid greatly in the cooperative task now before the medical schools and hospitals. Also, until an understanding can be achieved, the task of listing house staff opportunities, as has been done annually by the Council on Medical Education in the *Journal of the American Medical Association*, is a difficult one.

A great deal of care was taken by the Committee to define the terms employed in the study. The definitions arrived at necessarily disregard those used in the individual hospitals. No criticism is implied in this; it was done merely to permit grouping and correlation. The definitions are given in the glossary;* however, it seems advisable to consider the various types of hospital appointments at greater length so that the reader will have a perfectly clear concept of the implications of the terms used in referring to them.

INTERNSHIPS

Internships may be divided into four categories: rotating, mixed, straight, and special. While definitions for the first three have been given by the American Medical Association, the terms have been used very loosely by both medical schools and hospitals. Little understanding has existed of the true nature of each type, and of the infinite number of variations by which one form may almost imperceptibly shade into the other.

Rotating internships. A rotating internship was defined by

* See page xxvii.

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the Committee as one in which the intern spends one or more years on more than three services.

Since the rotating plan is by far the most widely used, being offered in fifty, or 83 per cent, of the metropolitan hospitals having regular internships, it merits first consideration. For the most part it attempts to give the intern experience on all services. Actually, in application, the variations existing are almost infinite. There may be assignment to only medicine, pediatrics, surgery, gynecology, and obstetrics, or, on the other hand, there may be separate periods given over to additional brief experience on urology, ophthalmology, otolaryngology, orthopedics, dermatology, rectal disease, neurology, neurosurgery, anesthesia, ambulance, pathology, clinical laboratory, roentgenology, and the private pavilions. The inclusion of so many items may reduce the time spent on one service to as short a period as three weeks. Selective grouping has enabled some hospitals to meet this difficulty by limiting the number of services to which an intern may be assigned. The rotating or general plan then ceases to attempt a circuit of all services, and the term rotating is thus used only in a relative sense.

Mixed internships. A mixed internship is one in which the intern spends one year on not more than two services or two years on not more than three services, such as medicine, surgery, and pathology. Typically, mixed internships are found on the university services, being provided to ensure longer periods of assignment. The intern taking this type has the opportunity of becoming thoroughly grounded in two or three fields. The training received may be used as a basis for graduate education in a specialty or for a limited general practice. It does not give the comprehensive training needed for a completely general practice. Perhaps for this reason, the installation of mixed internships has been limited, being

found in only eight, or 13 per cent, of the hospitals offering internships in New York City.

Straight internships. A straight internship was defined as one in which the entire term is spent in a single branch of medicine, and it may include the specialties of that branch.

This form of service is the most limited of all in variety of experience, and has been devised for the exacting needs of teaching services or as a basis for further training in a special field. Since the straight internship in medicine or surgery may include assignments to the specialties of that field, the term straight is true only in a relative sense. In some instances it has been possible to visualize it as merely the surgical or medical half of a rotating internship. It is offered in fifteen, or 25 per cent, of the hospitals.

*Special internships.** Analysis of the internships to be found in the hospitals of New York City brought to light a special group which did not fit properly into the basic groups designated as rotating, mixed, and straight. For the most part this special group of internships was offered to individuals who had already completed their primary internship. The assignments included periods of six to twelve months on a single service and covered such special fields as pediatrics, contagious disease, pulmonary disease, psychiatry, obstetrics, and gynecology. It will be noted at once that these fields have a common distinguishing characteristic: they may be practiced as a specialty or may be an equally acceptable special interest as a part of a general practice. As a consequence, in hospitals with organized services of these types, it has been found desirable to set up special internships which require as a foundation a preliminary general or basic internship training. The plan has permitted better standards of patient care as well as

* This term was coined during the course of the survey in order to differentiate these appointments from the regular internships.

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a more highly developed educational program for students and interns.

These special internships, therefore, have been used as a stepping stone to specialization or to general practice with a special emphasis. A minority of the group, who definitely wish to specialize and who have displayed the requisite aptitude, may advance into assistant residencies and residencies. For these individuals, there can be eventual application of a full year of acceptable special internship to the graduate requirements of the specialty boards.

For the majority of the special interns, however, there is frank recognition of the value of the added experience in successfully meeting the demands of general practice. They are to this additional degree more competent physicians because of their better understanding of the problems of childhood, of chest diseases, of psychobiology, or of obstetrics and gynecology. Furthermore, the feeling of special competence in one field gives a powerful stimulus to study and progress. It is probably the best insurance against the professional retrogression seen among general practitioners who have come to regard themselves as merely jacks of all trades.

It is of interest to inquire why special internships have been set up in the fields mentioned and not in general surgery and internal medicine. The answer is undoubtedly to be found in the widespread inadequacy of training given in these special fields during the rotating internship and their frequent omission from the mixed and straight services. On the other hand, medicine and surgery have been considered basic and have received chief emphasis. Finally, it is increasingly difficult to justify a special internship which would only partially qualify a man to undertake major surgery in connection with a practice of general type.

In summation, the special internship, interpolated between

the primary internship and a possible residency, appears to be a peculiar requirement of the special fields indicated. It provides a trial ground to determine ability and inclination, while at the same time it gives the necessary additional qualification necessary before beginning a residency. It is unique in being an advanced, separate, special experience which may be applied either to further special training or to general practice. Since one of the problems of the completely rotating internship has been the short period spent on each service, the special internship plays a valuable role in satisfying the minimum educational requirements of the general practitioner in at least one field. From the point of view of successful residencies, the special internship prepares a man to take up his duties without lost motion or a sag in the standards of the service.

In New York City there are sixteen hospitals offering special internships in the following fields: pediatrics, medicine and pediatrics, chronic diseases, communicable diseases, dermatology, tuberculosis, psychiatry, gynecology, orthopedics, otolaryngology and ophthalmology, neurosurgery, gynecology and obstetrics, obstetrics, obstetrics and pediatrics, and pathology. At the time of the survey there were 124 individuals in positions of this type in the city.

Distribution of internships. Sixty of the seventy-seven approved hospitals offer internships of the rotating, mixed, or straight types. Table 1 shows the distribution of these internships by type and according to the undergraduate teaching status of the hospitals.

In spite of the popular misconception that rotating internships are scarce in New York City, it is apparent at once that they exceed all others, being almost three times as numerous as the straight and mixed combined. Fifty hospitals, or 83 per cent of the total number with internships, offer this

TABLE I. DISTRIBUTION OF INTERNS BY TYPE OF INTERNSHIP AND BY TYPE OF HOSPITAL,
APPROVED HOSPITALS, 1936

TYPE OF INTERNSHIP	NUMBER OF HOSPITALS				NUMBER OF INTERNS							
	Teach- ing	Affili- ated	Non- teaching	Total	Teaching hospitals		Affiliated hospitals		Nonteaching hospitals		All hospitals	
					Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Rotating	6	9	35	50	185	47	236	68	481	95	902	72
Mixed	2	5	1	8	104	26	85	25	8	2	197	16
Straight	5	6*	4*	15*	105	27	25	7	16	3	146	12
<i>Total</i>	9†	14†	37†	60†	394	100	346	100	505	100	1,245	100

* In five of the six affiliated hospitals and in two of the four nonteaching hospitals, the straight internships were in pathology only.

† The total is not the sum of the figures in the column since some hospitals have more than one type of internship.

mode of service. Obviously, in the task of preparing doctors for their careers, this type of internship plays a major role.

Of the 902 rotating internships, however, only 185, or about one-fifth, were found in the teaching hospitals, whereas this type of hospital had more than half the mixed and about three-quarters of the straight internships.

There was a striking difference in the number of internships of the various types in the three classes of hospitals. Mixed and straight internships predominated in the teaching group but almost reached the vanishing point in hospitals without medical students. Conversely, rotating services, which included 47 per cent of the internships in the university hospitals, reached 95 per cent in the nonteaching group. Modifying factors will be discussed in later sections of this report, but one is forced to conclude that the rotating internship is not as well adapted to a teaching service of university caliber as is the straight or mixed.

RESIDENCIES AND FELLOWSHIPS

The prerequisites for a residency include an internship and an assistant residency or special internship which have given a thorough grounding in medicine and surgery. The residency itself provides experience for at least a year as house officer in a special field, with responsibility for a high standard of service and for supervision of the interns, and opportunity for basic science correlation, clinical investigation, and research.

At the time the survey was made, there were 545 residents and assistant residents in fifty-three of the seventy-seven approved hospitals. Forty-one of these hospitals had interns as well as residents.

Fellowships* are similar to residencies, but usually there is emphasis on special study and research. Most of them are

* See page xxviii.

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found in institutions with an academic background. The fellowships form but a small proportion of the total house staff positions (there were only thirty-two in New York in 1936), and since they fulfill a function similar to that of the residencies they may be considered under the same heading.

Table 2 shows the number of residents, assistant residents, and fellows in each type of specialty in New York City in 1936.

On general medical and surgical hospital divisions the term resident has been used almost without exception, but on special services there has been a tendency to cling to the designation of intern. The reason for this is readily apparent. On the general services, there has been a need for a super-intern to assist the director with administrative duties and to foster continuity of program. The distinctive title of resident, to distinguish him from the intern, has come into generally accepted use. On the other hand, special services such as ophthalmology, otolaryngology, urology, orthopedics, neurology, and dermatology have frequently grown up entirely apart from the general hospital services. In seventeen instances these services have developed as separate special hospitals, with a natural tendency to organize their house staffs along the lines of a general hospital, and to call the men interns.

For purposes of comparison in this study, all these advanced appointments are called residencies. From the point of view of graduate education, they have a common objective: all are presumably offering experience at a sufficiently high level to qualify participants to enter a specialty. As a further distinction, men in junior capacities will be considered as assistant residents, and those in senior positions as residents.

House Staff Appointments

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TABLE 2. NUMBER OF RESIDENTS, ASSISTANT RESIDENTS AND FELLOWS IN NEW YORK CITY, BY TYPE OF SPECIALTY, 1936

SPECIALTY	ASSISTANT			TOTAL
	RESIDENTS	RESIDENTS	FELLOWS	
<i>Medical specialties: Total</i>	76	96	1	173
Medicine	20	16	—	36
Pediatrics	17	17	1	35
Communicable diseases	6	9	—	15
Chest diseases	7	29	—	36
Neurology	12	20	—	32
Psychiatry	9	3	—	12
Dermatology and syphilology	3	1	—	4
Allergy	1	—	—	1
Neuropsychiatry	1	—	—	1
Venereal diseases	—	1	—	1
 <i>Surgical specialties: Total</i>	 113	 137	 27	 277
Surgery	29	27	9	65
Gynecology	3	6	—	9
Urology	11	15	1	27
Otolaryngology	13	22	—	35
Ophthalmology	11	20	4	35
Ophthalmology and otolaryngology	11	10	—	21
Orthopedics	14	23	6	43
Tumor surgery	10	11	7	28
Neurosurgery	4	2	—	6
Neurology and neurosurgery	1	—	—	1
Plastic surgery	1	—	—	1
Thoracic surgery	2	—	—	2
Fractures	1	1	—	2
Fractures and traumatic surgery	1	—	—	1
Specialties	1	—	—	1
 <i>Obstetrics and gynecology: Total</i>	 19	 24	 —	 43
Obstetrics	9	4	—	13
Obstetrics and gynecology	10	20	—	30

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TABLE 2 (*continued*)

SPECIALTY	ASSISTANT			TOTAL
	RESIDENTS	RESIDENTS	FELLOWS	
<i>Other specialties: Total</i>	52	28	4	84
Pathology	13	14	4	31
Radiology	7	5	—	12
Roentgenology	7	3	—	10
Radiation therapy	4	1	—	5
Anesthesia	15	1	—	16
General	4	—	—	4
Metabolism	1	2	—	3
Ambulance	—	2	—	2
Outpatient department	1	—	—	1
<i>Grand total</i>	260	285	32	577

PRIVATE ASSISTANCIES

In connection with the survey it was found necessary to coin a new term to designate house staff members usually called residents on private services. The title decided upon was private assistant and has been defined in the glossary of terms at the beginning of the book.* The custom among seven of the hospitals in the city to list private assistancies as residencies has been confusing to interns seeking advanced training. Moreover, the term residency is now applicable only to periods of acceptable graduate education, which the private assistancy certainly is not. For future listing of hospital positions, a clear distinction between the two types of hospital service is essential.

The educational content of a private assistancy is inevitably meager. Appointees carry little direct responsibility and participate only to a slight degree in the diagnostic studies of the

* See page xxix.

patients admitted. Usually the diagnosis has been established in the private office of the physician in charge of the case. Naturally another review of the situation would be a pointless procedure and there is no opportunity to keep adequate records. While the private assistants have the privilege of observing the methods employed by outstanding physicians in dealing with their private cases, the experience cannot be compared with the residencies on ward services. There is frank admission by all parties concerned that the chief inducement offered is the salary and the possibility of a better introduction to practice under the sponsorship of a member of the attending staff.

Twenty-two private assistants were found in the course of the survey, but it is obvious that these appointments cannot be included in any scheme of acceptable graduate education and should not be listed among the available residencies.

DISTRIBUTION OF HOUSE STAFFS

In Table 3 may be found a summarization of the different types of house staffs serving in the seventy-seven hospitals included in the Committee's survey. It will be observed that the total is just under two thousand persons. There were approximately twice as many interns as residents, the proportion being 1,245 to 545. The intermediate group of 124 special interns were the only remaining group of any size, the total of fellows and private assistants being inconsequential.

Significantly, 90 per cent of the special interns and over 80 per cent of the residents were found in hospitals having teaching affiliations with the medical schools, but this was true of only 60 per cent of the regular interns. Almost half of all the residents were serving in hospitals of full teaching status. It is for this reason that the relatively small number of hospitals of the latter type had aggregate house staffs consider-

TABLE 3. DISTRIBUTION OF HOUSE STAFFS BY TYPE OF HOSPITAL, APPROVED HOSPITALS, 1936

TYPE OF HOUSE STAFF	NUMBER OF HOSPITALS				NUMBER OF HOUSE STAFF							
	Teach- ing	Affili- ated	Non- teaching	Total	Teaching hospitals		Affiliated hospitals		Nonteaching hospitals		All hospitals	
					Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Interns	9	14	37	60	394	32	346	27	505	41	1,245	100
Special interns	8	5	3	16	94	76	17	14	13	10	124	100
Residents and assistant residents	11	20	22	53	264	48	186	34	95	18	545	100
Fellows	2	4	1	7	15	47	16	50	1	3	32	100
Private assistants	1	5	1	7	6	27	15	68	1	5	22	100
<i>Total</i>	<i>12*</i>	<i>21*</i>	<i>44*</i>	<i>77*</i>	<i>773</i>	<i>39</i>	<i>580</i>	<i>30</i>	<i>615</i>	<i>31</i>	<i>1,968†</i>	<i>100</i>

* These are not the totals of the above figures since some hospitals have more than one type of house staff.

† This total exceeds the total of 1,760 interns and residents reported for 1936 by the American Medical Association because our figures include additional appointments such as fellowships, private assistancies, and special internships, as well as the entire house staff of a newly erected municipal hospital which received American Medical Association approval during 1937.

House Staff Appointments

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ably exceeding the other two groups. Actually, out of the 1,968 house staff members, 1,353 were in hospitals with some medical-college contact. Such a finding is a hopeful augury for plans for better understanding between the colleges and hospitals in meeting educational needs.

CHAPTER TWO. The History of Internships and Residencies

MEDICAL education in America began to emerge from the purely preceptorial method shortly before the Revolutionary War. In keeping with the growing trend away from dependence upon European tutelage, colleges of medicine were opened in Philadelphia, New York, and Boston, successively. Recognizing from the outset the necessity of hospital affiliation, the University of Pennsylvania and the Pennsylvania Hospital entered into such an arrangement as early as 1765. Only four years later, on the occasion of the conferring of the first medical degrees at Kings College in New York, Dr. Samuel Bard made an eloquent plea for a general hospital where students might be taught. His appeal was answered by the construction of the New York Hospital on lower Broadway just north of City Hall. Delayed twenty years by the revolutionary upheaval, its doors were finally opened in 1791. From the first, the ideal of its founders was maintained, namely, the teaching of medical students and young physicians at the bedside. Hospital wards opened at the Bellevue prison and almshouse were also made available for clinical instruction.

In those early hospitals the necessity of a resident medical staff was soon recognized. Since it could not be recruited from the small group of doctors already in practice, it was natural to turn to the graduates of the infant medical colleges. The opportunity for intensive clinical training among the indigent sick, concentrated in the public ward, was an eagerly sought privilege. For the first time, the medical fledgeling had a

chance to take responsibility for the hospital care of patients, under the observant eye of the leading clinicians of the day.

The plan initiated was not without precedent. Many of the master physicians of that era were graduates of continental schools, particularly the University of Edinburgh. During their tour of European institutions they had the opportunity to learn the methods in vogue and observe the utilization of assistants in hospital residence. It was natural, therefore, for the first American hospitals to proceed along similar lines. Following perhaps the English system, services were divided between medicine and surgery, the resident doctors being assigned to one or the other service. The titles "house surgeon" and "house physician" appeared in the roster of the New York Hospital soon after its inception in 1791, and at Bellevue in 1806.

Actually the introduction of a house physician appears to have been an afterthought. In the first report issued by the New York Hospital in 1797,* the name of but a single apprentice was mentioned, that of Samuel Barnum, the house surgeon. The omission of a complementary member of the staff on the medical wards was explained by the New York Hospital report of 1804.† In this account the apothecary came into the picture as a combination druggist, house physician, and librarian. He shared with the house surgeon the responsibility for making morning and evening rounds on the patients, assisting the attending staff at the time of their visits, and alternating in the delivery of uncomplicated cases in the lying-in ward. Then, to make sure that time did not hang heavy on his hands, he was expected to keep an account of all medicines and their costs, write up the obstetric records,

* *Report of State of New York Hospital for the Year 1797*, No. 1.

† *Brief Account of the New York Hospital, New York* (printed by Isaac Collins and Son, No. 189 Pearl Street, 1804), Section VII, page 30.

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and be responsible for the care and issuance of books in the hospital library!

By 1809, the impracticability of such a schedule had been recognized, for the position of house physician had been created, and to the new apprentice were delegated the tasks of making rounds on the medical patients, relieving the house surgeon in the delivery room, and looking after the library.*

Reading between the lines of these old reports, the conjecture seems justified that the apothecary in his previous hurried round of duties had scant residual time for his task as librarian. This may be guessed by the provision that the newly appointed house physician was required to give surety to the sum of two hundred and fifty dollars "to make good loss of books due to his negligence or misconduct."† Whenever the blame lay, it is obvious that even in the very beginning of New York hospital history, libraries suffered from lack of supervision by competent librarians.

The qualifications expected of these earliest house staff members are of particular interest in view of present-day efforts at elevation of standards. Their preparation contained one element that is lacking in current forms of medical education, namely, contact with conditions seen in private practice.

In modern terms, the medical education of men attaining the houseships consisted of a four-year course during which the novitiate spent one year assisting the preceptor with his private practice, another sitting under a course of lectures, a third acting as a nonresident hospital assistant, and a final year as a responsible member of the house staff.

The education considered necessary to qualify the student

* *By-Laws and Regulations*. Ordained and Established by the New York Hospital (printed by Collins and Perkins, New York, 1809).

† *An Account of the New York Hospital* (printed by Collins and Co., No. 189 Pearl Street, 1811), Chapter XII, pages 40-45.

to assume the duties of the houseship is illustrated by the following quotation:

Such pupils, as intend to be candidates for the said office, must attend daily, at the same hours with the attending physician and surgeon, must be present at all operations performed by the surgeon; and shall be considered as assistants to the house physician and house surgeon.*

The regulations prepared to guide the house staff groups of more than a century ago demonstrate quite clearly the educational ideas and ideals of that period.

No medicines were prescribed, nor operations performed, without special direction of the attending staff. Since the patients were under the immediate care of the house staff, both the house physician and the house surgeon could not be absent from the hospital at the same time. They had to return to the building at a seasonable hour, and were required to sleep in the building. Their rounds were made twice daily, so that they might be prepared to report to their superiors at the time of daily visits. They were expected "to see that medicines were administered with care, neatness, and without delay."

The year of hospital residence was not completely divorced from home practice, for the house staff, after securing the approbation of the visiting committee, were allowed "to attend such outdoor patients as are under the care of the hospital."

Training in physical therapy was considerably in advance of that given at present, for the house physician's particular duty was to keep the electrical and galvanic apparatus in perfect order, and to apply it faithfully when directed. Both he and the house surgeon were expected "to attend to the faith-

* *Ibid.*, page 4.

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ful application of baths, at the temperature, and in the manner prescribed by the attending physician and surgeon." Their competence in these particulars must have been in marked contrast to the ignorance of these matters displayed by the average young physician when he enters practice today.

Methods of record keeping, while antiquated in certain aspects, had qualities worthy of emulation. They were written by the house physician and surgeon with the aid of their assistants, under the direction of the attending staff. Their contents consisted of personal data, occupation, probable cause and history of the disease, remedies used before and after admission, progress notes by the attending physician or surgeon, daily reports by the house staff, termination of the case, and a final diagnosis. How many records of today are remiss in some of these particulars!

Records considered worthy of preservation were bound in books and placed in the custody of the librarian (the house physician) for the inspection of friends of patients, the governors, the attending staff, and the students attending the hospital.

The librarian's job was no sinecure, for to him fell the duty of labeling and numbering each book, keeping a catalog of all volumes, preserving signed receipts for all items taken out, and maintaining regular library hours. Books were loaned only to students, staff members, or friends donating at least twenty-five dollars to the library. Only one volume could be withdrawn at a time, and a fine of twenty-five cents a week was the penalty for failure to return a book on time. Time allowances were four weeks for a folio, three weeks for a quarto, and two weeks for an octavo. Reading time was calculated to a nicety.

Even at this early day a confusion of titles arose. At the New York Hospital the junior assistants were called

"walkers" and lived outside the building, much after the fashion of modern fourth-year students during their clinical clerkship.* Bellevue experimented for a time with the terms "resident" and "assistant resident" before changing to its present nomenclature of junior and senior intern, with a retention of the designation of "house" for the final period of intern responsibility.†

Accounts of house staff existence during the nineteenth century are notable for their rarity. The only vivid picture was the work of Dr. D. B. St. John Roosa which told of doings in the city's pioneer medical institution, the old New York Hospital. His description immortalized the type of house staff experience given just before 1870.*

• The doctors, we mean the house-doctors, were not unhappy; nine of them, solemn young men, so young in appearance that we remember that many an indignant patient on seeing his medical attendant would vow that "none of them 'ere assistants should ever practice on him."

It should be known that what are called the attending physicians or surgeons are eminent practitioners in the busy city about, who visit the Hospital daily, give the clinical lectures, perform the great operations, and direct the treatment of the serious cases. The "young doctors," as the patients call them, who are the resident staff, are divided into three grades, those of each grade serving a term of eight months. All of these young men, however, are graduates in medicine, having spent three years in its study before being admitted, and then only after a successful competitive examination. In the first eight months the "junior walker," as he is called, has no responsibility, but he receives his orders from the house-surgeon or physician, according as he is on the medical or "surgical side." He dresses wounds, bandages

* D. B. St. John Roosa, M.D., *The Old Hospital*, *Putnam's Magazine*, September 1869. Reprinted in *Medical Register New York and Vicinity*, 1870-1871, pages 91-107.

† Robert J. Carlisle, *An Account of Bellevue Hospital*, New York, The Society of the Alumni of Bellevue Hospital, 1893, pages 48 and 131.

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limbs, cups, copies cases into a notebook, lunches every day at the expense of the Hospital, but goes home at night.

The senior walker dresses fractures, writes the history of cases as he takes it from the patient's lips, which the junior copies, while the house-surgeon, the only one of the three who lives in the Hospital, has the general supervision of all the patients, subject, as before indicated, to the direction of the attending physician or "head doctor." He often, however, has to act in cases of emergency requiring considerable experience and skill, which he has acquired in the previous sixteen months of pupilage. It will thus be seen that every precaution was taken by the by-laws of the Hospital to secure careful and skillful attention of the sick. There were three sets of these doctors—two on the surgical and one on the medical side—to care for about three hundred and seventy-five sick.

Let us now go through with a day as passed by a house-physician or house-surgeon of the New York Hospital. We may suppose that the young gentleman has breakfasted in the pleasant dining-room, from whence he has gone into the office, whose windows look out upon Broadway, where the clerk, a rare gentleman of the old school, has regaled him both with the odor of a fragrant Havana and with some very well told stories of the ancient régime, when New York was so small that all the good fellows knew each other; and that he has looked out and seen his two assistants coming up the walk from their up-town boarding-house or home. He then buckles on his armor, or, in plain English, seizes his case of instruments, and with the senior and junior walker at his side, he starts on his rounds. The Emperor of Russia, the Viceroy of Egypt, or our late President, Andrew Johnson, never felt more acutely the weight of supreme power than did the house-surgeon or physician of the New York Hospital as he was about to pass into a realm over which he was the undisputed master.

How the doors fly open! Obedient nurses greet him, towel in hand, and he passes from bed to bed. "Well, John, how do you feel this morning? Nurse, what sort of a night did the man pass? What did he eat for breakfast?" and at the same time feeling his pulse, put-

ting his hands on his face to note the temperature of the body, while the senior walker is making rapid notes; these are the questions and this is the manner in which our young doctor attends his patients. No nonsense, no fuss, no haste, but calm, sympathetic questions and gentle manipulations.

The term intern as applied to members of the house staff appeared quite late in New York medical history. The archaic spelling, *interne*, frequently employed, is indicative of the period of French influence. Under the French system, only a minority of each medical class may win the coveted position of *interne*, the remainder serving as nonresident *externes* or *stagiaires*. It seems highly probable that the title *externe* was first imported in order to distinguish the nonresident medical apprentices from those accorded the privileges of bed, board, and laundry. The use of the term intern for the resident group was the next logical step.

It must be remembered that the first hospitals were little concerned with special services. With the exception of ophthalmology as a recognized specialty, medicine, surgery, and midwifery were in almost undisputed possession of the field. Pediatrics was still unheard of, orthopedics was largely in the hands of bonesetters,* and surgical urology was cared for by general surgeons who had sufficient daring to cut for bladder stone. Consequently, the opportunities for interns lay in the three inclusive fields of medicine, surgery, and obstetrics. They served either on the medical or the surgical "side," alternating days on the lying-in ward. Since their hospital training was primarily either medical or surgical, there was a pronounced trend toward specialism in one field or the other. The idea of attempted qualification in both, through a rotating internship, was not conceived until many years later.

* Arthur Keith, *Menders of the Maimed*, London, H. Frowde, 1919, Chapter XX.

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The first hospitals to appear on the New York scene—New York, Bellevue, New York Eye and Ear, Bloomingdale, the Asylum for Lying-in Women, United States Naval in Brooklyn, and Penitentiary—were built to care for an increasing number of poverty-stricken and unfortunate individuals, and to meet emergencies arising in a bustling commercial port. The general ward, supported by public and private funds, was recognized as a responsibility and an opportunity for better training of young doctors in the preservation of community health. Students were freely admitted to lectures given on the wards and in the amphitheaters by the great clinicians of the day. The tradition of the teaching hospital was firmly embedded in the matrix of medical educational philosophy at its very inception.

Nevertheless, in spite of this early ideal of close coordination of school and hospital, the teaching of students remained largely didactic for a century. Owing to lamentable defects in the medical curriculum, the internship too often filled the role of an “undergraduate repair shop.” Abraham Flexner in his report on medical education vividly described these and other shortcomings of our medical colleges, not only throughout the nineteenth century, but as recently as 1910.*

During this epoch of American medicine the first opportunity for individual study of the patient at the bedside came with the internship. Appointments were made through competitive examination, and successful candidates formed but a small, elite group. This was necessarily the case since hospital construction lagged far behind a rapidly increasing number of schools. House staff service in New York under such men as David Hosack, Samuel Bard, Valentine Mott, Austin

* Abraham Flexner, *Medical Education in the United States and Canada*, Report of the Carnegie Foundation for the Advancement of Teaching, New York, The Foundation, 1910.

Flint, Alfred Loomis, and Edward Janeway gave to a favored few the inspiration of contact with the great medical minds of their generation. A small number were fortunate enough to obtain the advantage of hospital experience abroad, but the fact remains that the great majority of graduates failed to obtain the hospital training needed to round out their education. The old family doctor, a revered figure whose memory has been hallowed by time, in many instances had to learn the practical aspects of his craft by practicing on his earliest patients.

Furthermore, the complete lack of regulation of medical colleges throughout this period naturally led to a corresponding lack of internship planning. One of New York's leading hospitals, as late as 1852, required only that candidates for house staff examinations should present proof that they had studied with a reputable practitioner for two years. Since all medical education was so decidedly casual, it is not surprising that little consideration was given to the place of the internship in the picture. Like Topsy, it "just growed," and no one cared much about origins, present status, or ultimate effect on the community.

Throughout the first century of house staff history, the total number of individuals involved was small. The laboratory, the need of an elaborate diagnostic work-up, and the requirements of aseptic surgery hardly made their influence felt before 1890. The house staff case load remained far in excess of that feasible in the hospital of today. In 1826 a house staff of two cared for two hundred patients at Bellevue.

Since the interns remained a small, select group with the advantages of additional educational opportunities, it was inevitable that they filled most of the visiting staff appointments. They began at the bottom rung and hopefully climbed the ladder toward the goal of ranking attending physician or sur-

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geon on the staff. This achievement carried with it the prestige of a commanding position and recognition as a specialist in his chosen field. It was in this manner that the lines of graduate and postgraduate advance were established—from intern to assistant to associate and finally to head of the service. This method of advancement continues largely in force in many New York hospitals today, notwithstanding the fact that internships are no longer selective but are open to all.

THE MODERN PERIOD

The unprogressiveness of medical education which was characteristic of the greater part of the nineteenth century began to dissipate toward the close of that period. The introduction of a graded curriculum by Harvard University Medical School in 1871, and the founding of Johns Hopkins University School of Medicine in 1887, marked the end of the dark age of American medical education. Outstanding leaders began to blaze a new trail along which the forces of undergraduate and graduate medicine were to follow.

Several milestones may be mentioned. Of vast significance was the publication in 1883 of the initial numbers of the *Journal of the American Medical Association*. For the first time, the medical profession was provided with a vehicle in which to embark on the adventure toward a better medical education. The first Educational Number was issued in 1901, and since then its annual appearance has probably been the most profound single influence on the educational project. In 1904 this number contained an editorial on the "Education of the Interne," which arraigned in scathing terms the haphazard internship system of many hospitals of that day.* Even the facilities available provided internships for less than 50 per

* *Journal of the American Medical Association*, vol. 43, pages 469-470, August 13, 1904.

cent of the graduating classes. The educational problems of the interns were stated in the following terms:

Why do our students go to the German hospitals? It is not so much because of insufficiency of material at home; it is rather that they are certain of receiving in the wards the personal instruction of the best men in Germany.

What certain great free hospitals in this country need is reorganization of the medical service which shall secure an adequate number of internes and attending men who shall not be "figure-heads."

In this same issue appeared the first annual report of the state boards.

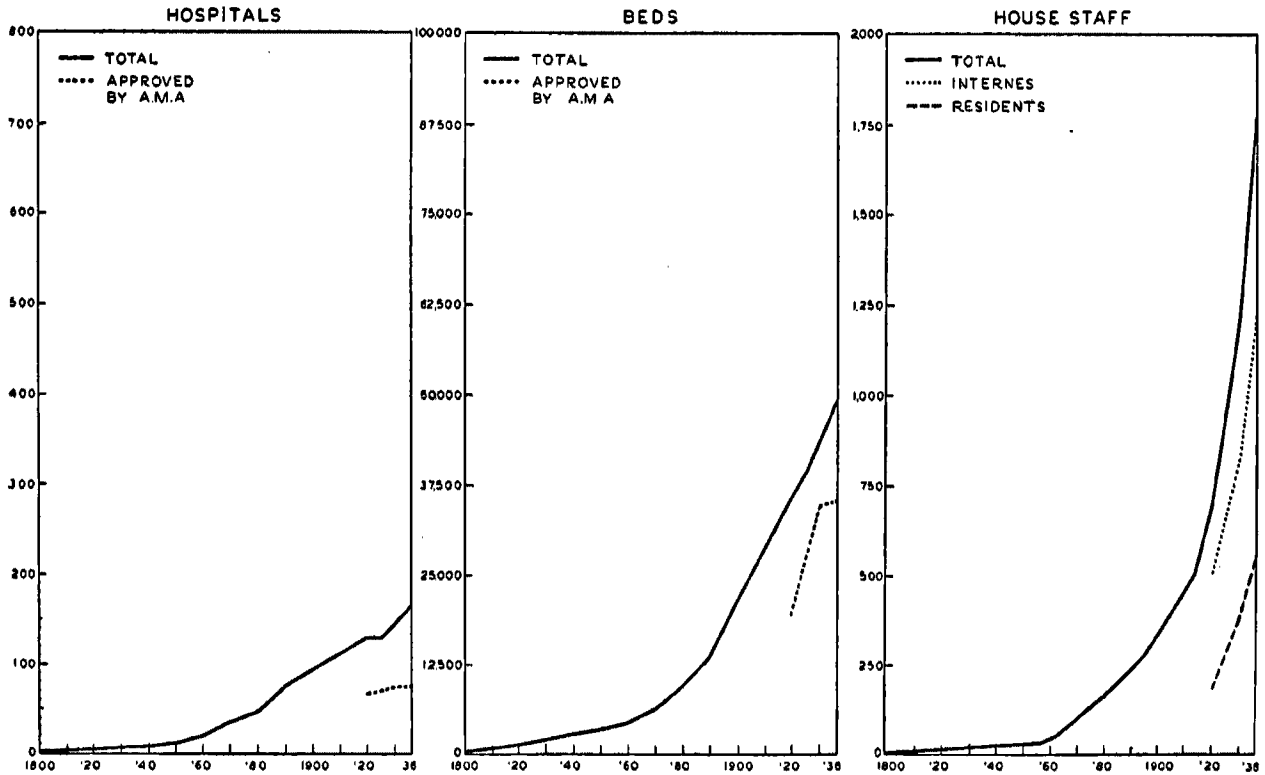
The year 1905 was epochal, for it marked the beginning of the activities of the Council on Medical Education, the establishment of the American Medical Directory, and the founding of the graduate card-index system.*

From the beginning, the primary purpose of the American Medical Association has been to elevate the standards of medical education. Its Council on Medical Education was able to utilize with telling effect the findings of the Flexner investigation sponsored by the Carnegie Foundation in 1910, and the end is not yet. In 1914 the first complete compilation of hospitals with internships was made by the American Medical Association. This has subsequently become an annual presentation of increasing value.

Fostered by both the American College of Surgeons and the American Medical Association, the elaboration of criteria for an acceptable hospital service stimulated a wave of institutional standardization.

Along with these advances, there was a rapid increase in the number of hospitals. Increasing economic prosperity and

* George H. Simmons, Some Fragments of History of the American Medical Association, *The American Medical Association Bulletin*, vol. 28, pages 103-112, 123-126, 137-143, October, November, December, 1933.



INCREASE IN HOSPITALS, HOSPITAL BEDS, AND HOUSE STAFF IN NEW YORK CITY, 1800-1936

acceleration of the process of urbanization resulted in a phenomenal increase in hospital construction. No longer did hospitals provide principally for the destitute, but pay patients were cared for in greatly increased numbers. Modern surgery and obstetrics, in particular, created an enormous demand for better hospital facilities for all classes of the population.

Internships now took on quite a different aspect. No longer were they to be found only on the general services of a few voluntary hospitals, in the public hospital, and on the wards of the almshouse and the penitentiary. Intern experience was extended to private patient pavilions. Furthermore, it was discovered that just as the young physician was imperatively in need of hospital experience, it was equally necessary for the hospital to have a house staff in order to meet the new requirements of the American Medical Association and the College of Surgeons. The inevitable result was a rapid increase in the number of internships.

Because of the modest needs of hospital services before the advent of anesthesia, aseptic surgery, the diagnostic laboratory, and modern special services, interns had remained but a small group up to the time of the American Civil War. From 1792 to 1862 the increase in New York City had been from three to fifty-three men. The multiplication of hospitals and the opening of the field of major surgery in the postwar period had a definite effect, for by 1895 the number of interns had increased fivefold, reaching a total of 273.

Up to this time the information as to size of house staff was given in the Medical Register of the City of New York. However, there was a hiatus as to reports of internships from then until 1906, when the first compilation was made by the Council on Medical Education. A complete list was not available until 1914.

The striking advance has occurred since 1900, due to influ-

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ences already mentioned. In 1914 the number of house staff men listed by the *Journal of the American Medical Association* reached a total of 503, and by 1936 the number listed was 1,760, an increase of 250 per cent.

Part of the credit for this rapid expansion is due to the introduction of modern residencies and internships in the specialties. Resident opportunities for advanced special training have come into being almost entirely since 1900. By 1920 less than two hundred such appointments were available, but by 1936 the number had grown to 547. During this period the rate of increase in the number of residencies was greater than that of internships.

The increment of internships was matched by a falling gradient in the number of medical graduates subsequent to the Flexner survey. Finally, in 1920 there was, for the first time, actually an excess of internships over the total number of graduates for that year.

Several colleges now visualized the internship as a fifth year of the medical course, and required it as a prerequisite to the granting of the M.D. degree. In addition, a number of states passed statutes specifying a year of internship as one of the requirements for licensure. Unfortunately, such provisions have tended to standardize the one-year rotating internship as a rigid requirement.

With this wide expansion of the entire field of internships, a new and unforeseen factor appeared. Instead of a hospital experience in a university atmosphere, the intern service became, for the most part, an apprenticeship detached from the best educational ideals or interests. In newly opened hospitals, successful internship plans were copied without due consideration for the spirit and tradition which made them worthwhile. Lacking the stimulation of a teaching affiliation, only the exceptional staff was able to discipline itself sufficiently to

maintain the high qualitative standards essential to modern graduate medical education.

Of course, increase in the number and size of hospitals was not the only factor in the evolutionary process. It was accompanied by increasing diversification of services in keeping with advances in medical science. Provision had to be made, even in the smaller hospitals, for resident staff service in the fields of otolaryngology, ophthalmology, orthopedics, urology, gynecology, obstetrics, pediatrics, neurology, dermatology, and roentgenology, as well as in basic medicine and surgery. Phenomenal advances in chemistry, bacteriology, and clinical pathology required a substantial portion of the intern's time in the laboratory. Since the desire of most graduates was to enter general practice, an opportunity for contact with all aspects of modern medicine was a great attraction. As a consequence, the rotating internships became the most popular of all types offered. Only in a few of the older hospitals and on some of the teaching services was selection of a limited number of services preserved by means of the straight or mixed internships.

POSTINTERNSHIP EDUCATION

Advances in medical science during the closing years of the nineteenth century left a gap between the point achieved by the internship and the increasing exactions of practice. This gap was bridged first by the great European centers, and large numbers of young American physicians went abroad to secure the education not obtainable at home.* Specialization based on years of general practice plus a short postgraduate course was observed to be increasingly inadequate, if not actually a menace to the general public. The first move to

* *Journal of the American Medical Association*, vol. 43, pages 469-470, August 13, 1904.

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correct this defect was made at Johns Hopkins through the introduction of residencies by Halsted. He determined to retain promising interns on his resident staff until they were thoroughly grounded in both the clinical and basic science correlations of their craft.

For an adequate understanding of the problem of establishing residencies in surgery in the general hospitals in New York City, it is important to review briefly the history of the development of the internship in surgery. During the period of 1880 to 1890, because of the inadequacy of the lecture system prevailing in medical schools in New York City, and the demand of the students for individual instruction and quizzing, private quizzes were organized, especially at the College of Physicians and Surgeons. There was no question of the need for this instruction and no criticism is offered, except against the medical schools for having neglected to provide individual instruction. Among the surgeons who organized these quizzes were Dr. Markoe, Dr. Hartley, Dr. Eliot, and Dr. Halsted. Dr. Halsted, before leaving New York City, had the largest quiz, some seventy students receiving instruction under his supervision. The purpose of the quiz rapidly crystallized into intensive training for hospital examinations, with the inevitable consequence that the hospitals sought the men best trained in the quizzes, and soon afterwards began to offer as an attraction to their hospital the reputation of giving a large number of operations to their house surgeons under the supervision of the attending surgeons. Naturally the students graduating from the quiz and taking hospital examinations favored the hospitals having this reputation.

This situation gradually developed into a rather vicious circle. In order to curry favor with the surgical intern staff, the younger attending surgeons gave away more and more

operative work, at times at the expense of their own experience and the welfare of the patient; and house surgeons in the course of a six-month service were given operative work for which they were naturally untrained. In many instances house surgeons given this training went into other lines of work, and the experience acquired during their term as house surgeon was entirely wasted.

When Dr. Halsted went to Baltimore and developed his system of residencies as a result of his radically different set-up and surgical philosophy, a tradition developed in Baltimore regarding the chief resident which was entirely opposed to the scheme which obtained in the hospitals in New York City. Because of Halsted's more meticulous technic, resulting in a much slower and more deliberate method of operative work, many of the surgeons who were not thoroughly familiar with his philosophy carried away from casual visits to his clinic a prejudice against him and his resident system, and the possibilities inherent in a resident system were not appreciated. In fact, a strong feeling developed in New York against the system because of the attitude of the surgical house staff and the younger as well as the older attending staff men, who felt that their work would be markedly curtailed by the initiation of such a system.

And so, up to about 1910 a tradition grew in New York City which entrenched the position of the house surgeon in the various hospitals. Any change in this system has met with strong opposition until recently, when the more intelligent house surgeons began to realize that they need training over a longer period of years and by a different plan from that prevailing at present in the majority of New York hospitals.

THE FIRST RESIDENCIES

In this manner the residency system came into being, and

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was taken up by other general and special services. Conflict was inevitable where the traditional house surgeon-attending staff relationship was disturbed by the interpolation of another stage in the educational process. This disturbance was felt most keenly in the smaller hospitals with limited clinical material, where a rotating intern staff looked forward to participation in major surgery as the final reward of their labors. It is not surprising that the establishment of residencies made slow progress. From sheer necessity the large municipal hospitals with excessive case loads were the first to change. Adequate care of patients was frequently impossible without the introduction of experienced residents. Among the interns themselves there was an increasing demand for extension of their hospital experience beyond its traditional limits.

It was not until 1927 that the Council on Medical Education and Hospitals issued its first list of approved residencies. These residencies included all types of general and special medicine, and for the first time gave the intern a vision of what the whole field of resident graduate medical education had to offer. It was immediately apparent that facilities for the training of the specialist were inadequate, both quantitatively and qualitatively. In order to define ways and means for bettering the situation, qualifying boards were set up and criteria established for proper preparation of the specialist. Although the project is still in the formative stage, it seems certain to have a profound effect on the future character of all house staffs and the type of physician provided for the community. All medical institutions must take serious stock of their resources and potentialities, and their application to the new program.

Another factor of far-reaching consequence is the relationship of internships to the medical college curriculum. Its importance was discussed in the *Final Report* of the Commission

on Medical Education in 1932.* Neither the medical school nor the internship can operate as a completely separate project. Only by close cooperation can the resources of each be effectively employed. The recent survey of medical colleges by the Council on Medical Education in cooperation with the Federation of State Board Examiners and the Association of American Medical Colleges will not only result in important modification of the present undergraduate educational project, but will have definite repercussions through the fabric of the internship as well.

The advance of medical education may be compared perhaps to that of a marching army. The chief difference between those in the front rank and those bringing up the rear is the distance traveled along the road. As in every good expeditionary force, its success depends upon intelligent planning, a just discipline, and an efficient organization with every member playing his part. This does not imply regimentation, but rather efficient planning and cooperation. In days gone by, staff work has not been of the best, and straggling has been distressingly frequent, but the pace is now quickening and such free-and-easy methods can no longer be countenanced.

The task ahead is the coordination of the medical course, the internship, the residency, the fellowship, postgraduate study, and the educational value of the hospital program, so that present waste of effort may be eliminated and doctors may efficiently continue their education throughout their entire careers.

* Commission on Medical Education, *Final Report*, New York, Office of the Director of the Study, 1932, pages 146-147.

CHAPTER THREE. The Relation of Intern and Graduate Education to Practice: A Survey of 1,904 Practicing Physicians, Graduates of New York City Medical Colleges

ESTIMATES of the ultimate value of internship and residency training as now employed have been based largely on conjectural grounds. A fairer basis for judgment can be obtained by learning how well the hospital training has served the needs of physicians after a period of trial in practice. The importance of studies of this nature has been recognized, and in a series of reports Dr. H. G. Weiskotten has traced the trends of type of internship and practice.* These reports have given a composite picture of the situation throughout the entire country. It has been possible to determine what proportion of the profession have obtained rotating, mixed, and straight internships, and what proportion have engaged in general and special varieties of practice.

However, the application of internship and other forms of resident education may with advantage be studied intensively in more circumscribed geographical areas. It has been found that the majority of the graduates of the local medical colleges tend to settle in Greater New York and adjacent areas. Since most of them obtain their internships in the same region, it is possible to determine quite clearly the value of the factors entering into their educational preparation.

* Present Tendencies in Medical Practice, *Bulletin of the Association of Medical Colleges*, vol. 2, pages 29-49, January 1927; Study of Present Tendencies in Medical Practice, *ibid.*, vol. 3, pages 130-144, April 1928; Tendencies Toward Specialization, *Proceedings of the Annual Congress on Medical Education; Medical Licensure and Hospitals*, 1932, pages 60-62; Tendencies in Medical Practice; Study of 1925 Graduates, *Journal of the Association of American Medical Colleges*, vol. 7, pages 65-85, March 1932.

With this end in view, questionnaires accompanied by personal letters were sent out in 1935 and 1936 from the deans' offices of Columbia, Cornell, Long Island, New York Medical and Flower Hospital, and New York University Medical Colleges, to 3,299 of their graduates for the years 1919 to 1921, 1924 to 1926, and 1929 to 1931. These periods were selected as giving a representative sample of graduates during the fifteen years preceding the time of the present survey. Evidence of the interest of practicing physicians in internship and graduate education was shown by the fine response obtained from them. In all, 1,904 carefully answered questionnaires were returned for analysis. The number of questionnaires received according to year of graduation was as follows:

YEAR OF GRADUATION	NUMBER SENT OUT	NUMBER RETURNED	PER CENT RETURNED
1919-1921	1,017	525	52
1924-1926	995	586	59
1929-1931	1,286	792	62
Other*	1	1	
<i>Total</i>	<i>3,299</i>	<i>1,904</i>	<i>58</i>

* Graduated from Odessa in 1916 and a New York City college in 1926.

PRESENT PRACTICE

In classifying the returns it was decided to divide types of practice into somewhat different groups from those used in previous studies. It has been customary to consider general practice as carried on with or without emphasis on a specialty. This was perhaps based on the premise that the former group were gradually limiting their practice and eventually would become specialists.

In the present study, general practice was broken up into five categories according to the types and groups of specialties

included. This appears to be a sounder concept, for it portrays a truer picture of American medicine, namely, the existence of combinations of general practice with various specialties as permanent arrangements that have grown up in response to community needs and the practical necessities of physicians in making a living. Instead of being transitional stages from ordinary family practice to one of the specialties, these arrangements have tended to become final objectives. Their right to

<i>General Practice</i>	NUMBER	PER CENT
Including obstetrics, major surgery, and other specialties	369	19
Including obstetrics, no major surgery, but other specialties	498	26
Including major surgery	80	4
Including obstetrics	108	6
Without obstetrics or major surgery	92	5
 <i>Special Practice</i>		
General surgery	72	4
Surgical specialties	157	8
Obstetrics and obstetrics with gynecology or surgery	56	3
Internal medicine	96	5
Medical specialties	105	5
Pediatrics	73	4
Other specialties	31	2
Full-time positions	130	7
In training	34	2
No longer in practice	3	*
<i>Total</i>	1,904	100

* Less than one-half of one per cent.

survival must be determined by adequacy of educational foundation and quality of medical service to the community.

With these considerations in mind, the above classification of the graduates and their distribution among the various types of practice was prepared.

One of the striking findings was the fact that only 4 per cent of the whole group limited their practice entirely to general surgery. In contrast, 23 per cent of the practitioners found it expedient to include major surgery with general practice. Three per cent confined their attention solely to obstetrics or obstetrics combined with gynecology or surgery, but over 50 per cent engaged in obstetrical work as part of general practice. Only one physician in twenty has been content to confine his attention to a general practice which excludes both major surgery and obstetrics.

To summarize—60 per cent of the group were engaged in general practice, 38 per cent were specialized, and 2 per cent were either in training or out of practice.

THE TREND FROM GENERAL TO SPECIAL PRACTICE

The trend toward specialization has not been clearly defined. Over half the specialists had had a period of general practice, but most of the general practitioners who included a specialty did not go on to a strictly limited practice. The extent to which a comprehensive practice has served as preparatory to one of the specialties may be measured by the number who have taken this approach and the number of years during which they were so engaged. It can be seen in the following summary that, with the exception of internal medicine, over half the specialists of each type had had a period of experience in general practice. This period averaged approximately four to five years.

Survey of Practicing Physicians

TYPE OF PRESENT PRACTICE	PER CENT	
	DOING GENERAL PRACTICE BEFORE SPECIAL PRACTICE	MEDIAN YEARS SPENT IN GENERAL PRACTICE
General surgery	67	5
Surgical specialties	60	5
Obstetrics and gynecology or surgery	57	4
Internal medicine	44	5
Medical specialties	53	5
Pediatrics	53	4
Other specialties	58	4

THE PRACTICE OF OBSTETRICS

An adequate program for qualifying obstetricians can be formulated only when one is in possession of information as to the proportion of physicians who actually utilize such training. This includes a knowledge of the number now doing obstetrics, those who once did it but have given it up, and those who have never used the training. Table 4 shows the number of physicians in practice who fell in each of these categories. From these figures it can be seen that at the time

TABLE 4. PRACTICING PHYSICIANS: THOSE INCLUDING OBSTETRICS IN PRACTICE, BY YEAR OF GRADUATION FROM MEDICAL COLLEGE

OBSTETRICS INCLUDED IN PRACTICE	1919-1921		1924-1926		1929-1931		TOTAL	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
At present	196	38	322	56	528	70	1,046	56
Not at present but in past	159	31	95	16	41	5	295	16
Never	156	31	164	28	192	25	512	28
<i>Total reporting</i>	<i>511</i>	<i>100</i>	<i>581</i>	<i>100</i>	<i>761</i>	<i>100</i>	<i>1,853</i>	<i>100</i>

of the survey 56 per cent of the total number of graduates were including obstetrics as a part of their practice, 16 per cent had discontinued it, and 28 per cent had never practiced it. Furthermore, in the oldest group only 38 per cent had continued in the field.

In the period that had elapsed between the graduation of the oldest group and that of the most recent, there had been an increase in the number who included obstetrics in their practice at the start. Of those finishing medical school in the years 1919 to 1921, almost one-third did no obstetrics, while by 1929 to 1931 the proportion who did none at all had dropped to one-fourth. It is of course impossible to tell how many of the younger group will eventually eliminate it from their practice.

As far as community needs are concerned, the opinion seems justified that all interns need not be trained in the performance of obstetric deliveries. Since only 56 per cent of all the graduates were practicing obstetrics at the time of the survey, it would seem possible that as a minimum only slightly over half of all men graduating from the medical schools need additional obstetric training. Some individuals may not know whether or not they wish to include midwifery in their practice and so it will not be possible to match exactly the percentage of interns receiving experience in the delivery room with the percentage of the profession who will eventually use the training. However, obstetrics, with its increasing tendency to specialization, seems to require the services of a smaller proportion of the profession than in former years. With these facts in mind, it seems fair to accept the above figures as an accurate portrayal of the task of obstetric education as an internship and graduate problem.

It was found that 6 per cent of all practitioners doing obstetrics at the time of the survey had had no obstetric training

subsequent to medical school. This was true of 19 per cent of those who gave up this type of practice after an early trial. It was equally interesting that nearly one-half of those who never engaged in obstetrics did have experience in the field subsequent to graduation. In other words, 241 interns had obstetric training but did not use it, while 123 did obstetrics but lacked intern training. Unless the performance of deliveries is considered of value for other phases of practice, the training received by the 241 may be considered wasted education.

THE PRACTICE OF MAJOR SURGERY

Just as with obstetrics, it will be helpful in the planning of internships and residencies to know what proportion of graduates engage in major surgery. The graduates may again be divided into three groups, those doing major surgery, those who once did it, and those who have never done it. It was found that 40 per cent of those in practice were doing major surgery and 58 per cent had made no attempt to enter the field. In sharp contrast to the situation with regard to obstetrics, only 2 per cent had done surgery temporarily. Furthermore, comparing the classes graduating fifteen years ago with the most recent graduates, there was an increase from 50 to 64 per cent in the number who had never done major surgery.

The inference may be drawn that those entering major surgery did so early because of genuine interest, a negligible number subsequently dropping out. Training for this work, therefore, must be primarily *graduate* instead of *postgraduate*. The surgically minded physician begins operating just as soon as he starts to practice.

It would appear that 60 per cent of the interns do not need training in major operative technics; in fact, such participa-

tion may be time wasted. However, it would seem that the hospitals should provide facilities for about 40 per cent of their interns to test their abilities in operative surgery.

TABLE 5. PRACTICING PHYSICIANS: THOSE INCLUDING MAJOR SURGERY IN PRACTICE, BY YEAR OF GRADUATION FROM MEDICAL COLLEGE

MAJOR SURGERY INCLUDED IN PRACTICE	1919-1921		1924-1926		1929-1931		TOTAL	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
At present	245	47	238	41	261	34	744	40
Not at present but in past	15	3	20	3	11	2	46	2
Never	257	50	324	56	489	64	1,070	58
<i>Total reporting</i>	<i>517</i>	<i>100</i>	<i>582</i>	<i>100</i>	<i>761</i>	<i>100</i>	<i>1,860</i>	<i>100</i>

LOCATION OF PRACTICE

It was found that about 96 per cent of the graduates of the five New York schools had settled in the northeastern United States, principally in Greater New York and neighboring areas. A surprisingly small number established themselves west of the Mississippi or south of the Mason and Dixon line.

When the five types of general practice and all the specialties except full-time positions were combined into two groups, no very marked tendencies were noted as to location of physicians according to types of practice. A slightly higher percentage of the specialists had located in New York City, 70 per cent as compared with 68 per cent of the general practitioners of all types. On Long Island, in the rest of New York state, and in New Jersey and Connecticut there was a slight predominance of general practitioners, while in the

remainder of the country more of the men had entered the specialties.

TABLE 6. PRACTICING PHYSICIANS: TYPE AND LOCATION OF PRESENT PRACTICE

LOCATION OF PRESENT PRACTICE	GENERAL PRACTICE		SPECIAL PRACTICE		TOTAL	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
New York City	785	68	412	70	1,197	69
Long Island	31	3	3	1	34	2
Other New York State	90	8	39	7	129	8
New Jersey	134	12	44	7	178	10
Connecticut	31	3	12	2	43	3
Massachusetts	8	1	11	2	19	1
Other Northeastern United States	30	2	24	4	54	3
Southeastern United States	13	1	12	2	25	1
Western United States	24	2	33	5	57	3
Foreign	1	*	—	—	1	*
<i>Total reporting</i>	<i>1,147</i>	<i>100</i>	<i>590</i>	<i>100</i>	<i>1,737</i>	<i>100</i>

* Less than one-half of one per cent.

The population of the community might be expected to influence the type of practice more than would the geographical location. New York City being the largest, it was considered separately and the other areas were classified into nine groups, ranging from a million population and over down to less than 2,500 people.

As stated above, the proportion of specialists and of general practitioners who settled in New York City was approximately the same. However, specialization did predominate to a greater extent in the other cities with a population of over 100,000. Seven per cent of the general practitioners had

TABLE 7. PRACTICING PHYSICIANS DISTRIBUTED BY SIZE OF CITY IN WHICH PRACTICE IS LOCATED AND BY TYPE OF PRACTICE

POPULATION	GENERAL PRACTICE		SPECIAL PRACTICE		TOTAL		PERCENTAGE DISTRIBUTION BY SIZE OF CITY		
	Number	Per cent	Number	Per cent	Number	Per cent	General	Special	Total
New York City	785	66	412	34	1,197	100	68	70	69
1,000,000 and over	8	44	10	56	18	100	1	2	1
500,000 to 999,999	5	24	16	76	21	100	*	3	1
100,000 to 499,999	73	50	73	50	146	100	6	12	9
50,000 to 99,999	47	71	19	29	66	100	4	3	3
25,000 to 49,999	52	66	27	34	79	100	5	4	5
10,000 to 24,999	56	73	21	27	77	100	5	3	4
5,000 to 9,999	42	93	3	7	45	100	4	1	3
2,500 to 4,999	29	88	4	12	33	100	3	1	2
Under 2,500	49	91	5	9	54	100	4	1	3
<i>Total reporting</i>	<i>1,146</i>	<i>66</i>	<i>590</i>	<i>34</i>	<i>1,736</i>	<i>100</i>	<i>100</i>	<i>100</i>	<i>100</i>

* Less than one-half of one per cent.

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settled in these cities, compared with 17 per cent of the specialists. Worthy of note were the individuals confining their attention to the medical and surgical specialties in towns of less than 2,500.

Progress in professional attainment may depend on the educational atmosphere of the city in which the practice is located. A considerable number of the New York City graduates settled in cities with medical colleges. This was true of 1,347 physicians, or 72 per cent of the whole. The smallest proportion who had settled in such centers was found in the group doing general practice with obstetrics, major surgery, and other specialties, and even 62 per cent of them were in university centers. Whether intentional or not, the location of practice near a medical school and its allied teaching hospitals must influence the educational progress of the man concerned.

HOSPITAL STAFF CONNECTIONS

In addition to the possible influence of the medical center on educational progress, that which concerns hospital connections is also to be considered. It was found that 20 per cent of the graduates secured appointments on the staffs of teaching hospitals, and that 26 per cent were on the staffs of hospitals with medical school affiliation. All these hospitals were approved by both the American Medical Association and the American College of Surgeons.

In addition to the above, 49 per cent of the graduates were connected with hospitals having the approval of the American Medical Association for internship and/or residency. Sixteen per cent were serving on hospital staffs unable to win such approval but still able to meet the requirements of the College of Surgeons, and 8 per cent were in hospitals only able to attain American Medical Association Registry. Three per cent

were in hospitals of uncertain standards, and another 3 per cent had courtesy privileges only.

Finally, 12 per cent had no hospital contacts and were

TABLE 8. PRACTICING PHYSICIANS: PRESENT HOSPITAL
STAFF CONNECTIONS

TYPE OF HOSPITAL	PHYSICIANS	
	<i>Number</i>	<i>Per cent</i>
Medical school teaching program; approved for internships or residencies by the American Medical Association; approved by the American College of Surgeons	366	20
Affiliated with medical school; approved for internships or residencies by the American Medical Association; approved by the American College of Surgeons	479	26
Affiliated with medical school; not approved for internships or residencies; approved by American College of Surgeons; on American Medical Association Registry	3	*
No medical school connection; approved for internships or residencies by the American Medical Association; approved by the American College of Surgeons	903	49
Approved for internships or residencies by the American Medical Association; not approved by the American College of Surgeons	9	*
Approved by the American College of Surgeons; on American Medical Association Registry	298	16
On American Medical Association Registry	151	8
Courtesy appointment only	62	3
No approval	46	3
Type of hospital not specified	3	*
No hospital connections	213	12
<i>Total reporting</i>	<i>1,834</i>	

NOTE. Since some of the physicians held positions in more than one hospital, the percentages do not add to 100.

* Less than one-half of one per cent.

therefore completely divorced from this educational advantage.

SALARIED POSITIONS

It was of interest to determine the extent to which economic conditions and tendencies in medical practice had resulted in acceptance of full or part-time salaried positions. Fourteen per cent of the graduates were found to have practiced at some time during their career on a full-time salaried basis, while 24 per cent had received part-time salaries.

Those engaged in general practice not including major surgery or obstetrics, in general medicine, and in medical and other specialties showed a greater tendency to hold salaried positions of both types than did those in the other groups.

The duration of part-time positions followed no definite pattern. It ranged from less than one year to sixteen years and showed no variation among men in the different types of practice.

While approximately half of the full-time salaried men had remained on this basis, over 90 per cent of the remainder became independent practitioners within five years.

The largest number using full-time positions as an introduction to their life work were the general practitioners. The next largest group entered general medicine and the medical specialties. Obstetrics and gynecology was the only field in which none of the men had held full-time positions.

Part-time positions mainly covered the following fields: school physicians, health officers, insurance examiners, teachers in medical schools, and institutional, hospital, and clinic positions.

In the full-time field there were chiefly hospital administrators or full-time attending physicians, with a few teachers; army and navy officers; health officers; employees of indus-

trial, commercial, and insurance companies; and research workers. Those in hospital work were distributed among the various fields, the largest number in a limited practice being found in psychiatry.

INTERNSHIPS

The distribution of internships served by the group can best be shown by a table. Table 9 illustrates the extreme variations encountered and the difficulties incidental to classification.

Less than one per cent of the total failed to secure an internship. Sixty-one per cent took a rotating service alone, while an additional 10 per cent had predominantly rotating training. Twenty per cent secured a mixed training, and only 8 per cent obtained mainly straight internships. Since 60 per cent of the group was engaged in general practice in contrast to 38 per cent in one of the specialties it was a matter of great interest to see to what extent the type of internship service was a factor in the choice of a career.

TYPE OF INTERNSHIP AND TYPE OF PRESENT PRACTICE

It seemed conceivable that the type of internship served might be a guiding influence in the choice of practice. The 1,904 graduates were separated into the fifteen groups already listed, and compared according to the internship served.

Some curious inconsistencies were revealed. Only half of those engaged in a general practice excluding the specialties were graduates of rotating internships. There was a significant number who had taken mixed or straight medical internships and were thereby deterred from attempting either major surgery or obstetrics.

One-third of the general practitioners including major surgery in their practice had taken mixed and straight surgi-

cal internships. Over half had had a rotating hospital experience.

Eighty to 90 per cent of the men doing a comprehensive general practice, and those who were emphasizing obstetrics, had had predominantly rotating internships.

Fifty-six per cent of specialists in general surgery had had mixed or straight surgical internships.

Rotating and mixed surgical internships had been most popular with those entering one of the surgical specialties, while there was a swing toward the mixed and straight internships for the men entering medical specialties.

There seemed to be no marked trend among the obstetricians and pediatricians. About half had come up through the rotating services, while the rest secured varying amounts of mixed and straight experience.

PLACE OF INTERNSHIP

In view of the wide representation of medical college graduates in the New York City internships, it was of interest to learn to what extent there was a corresponding representation of local graduates on house staffs of hospitals in other parts of this country and in other countries. Inspection of the figures reveals to what a small degree this reciprocal relationship exists. Only two of every one hundred graduates of the schools located in the city obtained their primary internships in western or southern United States. In contrast, 74 per cent took all their internship and 6 per cent took part of their internship in the hospitals of New York City, and an additional 13 per cent entered hospitals in neighboring regions of New York state and New Jersey.

Influence of internship on location of practice. The concentration of local graduates in northeastern United States is possible evidence that the location of the medical college de-

TABLE 10. PRACTICING PHYSICIANS: PLACE OF INTERNSHIP

PLACE OF INTERNSHIP	PHYSICIANS	
	Number	Per cent
New York City	1,379	74
Other New York State	62	3
New Jersey	177	10
Other Northeastern states	78	4
Southern and Western states	30	2
Foreign	4	*
New York City and:		
Other New York State	41	2
New Jersey	31	2
Other Northeastern states	25	1
Southern and Western states	19	1
Foreign	4	*
Not specified	3	*
All others	22	1
<i>Total reporting</i>	<i>1,875</i>	<i>100</i>

* Less than one-half of one per cent.

terminated the location of practice. Care was taken to learn if the internship had any influence in the same direction. While on the questionnaires only 29 per cent of the graduates indicated that such influence did exist, it was found that the internship and the place of practice coincided for over 70 per cent of the group. The conclusion may be drawn that the distribution of practitioners is strongly influenced by the location of the internship. This is not surprising when the problems of the young man entering practice are considered. He depends heavily at first on aid given by the established physicians. The needed sponsorship will more readily come from members of the attending staffs under which the intern has had his hospital service.

LENGTH OF INTERNSHIP

Again, the length of internship served by 1,893 graduates who gave this information can be illustrated most satisfactorily by a table.

TABLE II. PRACTICING PHYSICIANS: LENGTH OF INTERNSHIP

LENGTH OF INTERNSHIP	PHYSICIANS	
	Number	Per cent
No internship	17	1
Under twelve months	51	3
Twelve to seventeen months	649	34
Eighteen to twenty-three months	364	19
Twenty-four to twenty-nine months	627	33
Thirty to thirty-five months	127	7
Thirty-six months and over	58	3
<i>Total reporting</i>	<i>1,893</i>	<i>100</i>

The Committee in its studies has favored two years of internship as a minimum. It was learned that 43 per cent had had this much hospital training. An additional 19 per cent had served eighteen to twenty-three months, giving the group a very impressive average of hospital experience when compared with the average reported for the rest of the country.*

In the Hospital Number of the *Journal of the American Medical Association* for 1937, the average length of internships by states was given. In twenty of the forty-three states listed, the internships were for one year only. In thirty-eight states the duration of service averaged less than a year and a

* Council on Medical Education and Hospitals of the American Medical Association, Internships and Residencies, *Journal of the American Medical Association*, vol. 108, pages 1049-1051, March 27, 1937.

half. New York was one of the five exceptions to the general rule, standing second in the country with an average of twenty and two-tenths months.

OUTPATIENT EXPERIENCE DURING THE INTERNSHIP

Nearly one-third of the men reporting on this point had no outpatient training, and for the majority who did attend the

TABLE 12. PRACTICING PHYSICIANS: NUMBER OF OUTPATIENT DEPARTMENT CLINICS ATTENDED DURING INTERNSHIP

NUMBER OF CLINICS ATTENDED	PHYSICIANS	
	<i>Number</i>	<i>Per cent</i>
None	566	30
Occasionally	88	5
One clinic	298	16
Two clinics	233	12
Three clinics	162	9
Four clinics	105	5
Five clinics	60	3
Six clinics	32	2
Seven clinics or more	28	2
"Yes" (number not specified)	300	16
<i>Total reporting</i>	<i>1,872</i>	<i>100</i>

experience was limited to one to three clinics. Poor attendance was much the same for those who later engaged in general practice as for those who entered a specialty. About one-third of the graduates reported attendance at medical clinics and surgical clinics. Attendance at pediatric, obstetric, and medical and surgical specialty clinics was limited in each instance to less than one-fifth of the group. A slightly larger proportion of those entering general medicine, general surgery, and pediatrics than of the total group attended the

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medical, surgical, and pediatric clinics respectively. However, there was no very marked relationship between type of clinics attended and the type of practice followed.

TABLE 13. PRACTICING PHYSICIANS: TYPES OF OUTPATIENT DEPARTMENT CLINICS ATTENDED DURING INTERNSHIP

TYPE OF CLINIC	PHYSICIANS	
	<i>Number</i>	<i>Per cent</i>
Medical	557	33
Surgical	494	29
Pediatric	222	13
Obstetric	296	17
Gynecologic and obstetric	36	2
Gynecologic	176	10
Medical specialties	217	13
Surgical specialties	265	16
Other specialties	23	1
"All clinics"	157	9

HOUSESHIPS

A houseship represents an additional period of training on one of the services during the senior year. Presumably it indicates special interest which might be reflected in the subsequent career. This assumption was borne out by the finding that men who had had houseships in medicine went into careers in internal medicine, pediatrics, medical specialties, and general practice which excluded major surgery, while those who had been house surgeons were found most heavily represented in the groups doing general surgery and general practice emphasizing surgery.

Those having houseships in both medicine and surgery or none at all revealed a remarkably even distribution in all fields of practice.

TABLE 14. PRACTICING PHYSICIANS: TYPE OF HOUSESHIP HELD DURING INTERNSHIP, BY
TYPE OF PRESENT PRACTICE

TYPE OF PRESENT PRACTICE	TYPE OF HOUSESHIP											
	None		Medicine		Surgery		Medicine and surgery		Other		Total	
	<i>Num- ber</i>	<i>Per cent</i>	<i>Num- ber</i>	<i>Per cent</i>	<i>Num- ber</i>	<i>Per cent</i>	<i>Num- ber</i>	<i>Per cent</i>	<i>Num- ber</i>	<i>Per cent</i>	<i>Num- ber</i>	<i>Per cent</i>
General practice including: obstetrics, major surgery, and other specialties	59	16	31	9	159	43	83	23	31	9	363	100
65 obstetrics and other specialties but no major surgery	140	29	147	31	81	17	79	16	32	7	479	100
major surgery	6	8	5	6	47	62	12	16	6	8	76	100
obstetrics	31	30	29	28	12	12	16	16	14	14	102	100
no obstetrics or major surgery	28	30	45	49	10	11	8	9	1	1	92	100
General surgery	7	10	1	1	50	72	7	10	5	7	70	100
Surgical specialties	39	27	21	14	62	42	18	12	7	5	147	100
Obstetrics and gynecology	10	20	3	6	22	43	9	18	7	13	51	100
Internal medicine	15	16	58	62	10	11	6	7	4	4	93	100
Medical specialties	27	28	47	49	13	13	5	5	5	5	97	100
Pediatrics	23	32	41	57	5	7	2	3	1	1	72	100
Other specialties	13	45	6	21	6	21	3	10	1	3	29	100

TABLE 15. PRACTICING PHYSICIANS: TYPE OF SPECIAL INTERNSHIP BY TYPE OF PRESENT PRACTICE

TYPE OF PRESENT PRACTICE	ALL GRADUATES	TYPE OF SPECIAL INTERNSHIP											
		None	Medicine	Surgery	Pediatrics	Obstetrics	Gynecology	Gynecology and obstetrics	Medical specialties	Surgical specialties	Other specialties	General	
General practice including:													
obstetrics, major surgery, and other specialties	369	299	3	8	6	18	1	8	16	10	8	1	
obstetrics and other specialties but no major surgery	498	422	6	4	6	28	1	3	22	5	7	3	
major surgery	80	71	-	3	1	1	-	-	1	2	1	-	
obstetrics	108	95	1	-	-	9	-	-	4	-	-	1	
no obstetrics or major surgery	92	82	2	-	2	1	2	-	3	1	1	-	
General surgery	72	55	-	2	-	6	2	4	-	2	2	1	
Surgical specialties	157	131	1	2	-	2	1	-	4	14	4	-	
Obstetrics and gynecology*	56	24	-	-	-	23	1	7	-	-	-	3	
Internal medicine	96	81	7	1	2	-	-	-	5	-	1	-	
Medical specialties	105	90	-	1	2	1	1	-	7	-	3	-	
Pediatrics	73	53	1	-	14	-	-	-	8	-	1	1	
Other specialties	31	26	1	-	-	-	-	-	1	-	3	-	
Full-time position	130	110	2	1	3	4	-	1	4	1	4	1	
In training	34	26	2	1	1	1	1	-	2	2	1	-	
No longer in practice	3	3	-	-	-	-	-	-	-	-	-	-	
<i>Total reporting</i>	<i>1,904</i>	<i>1,568</i>	<i>26</i>	<i>23</i>	<i>37</i>	<i>94</i>	<i>10</i>	<i>23</i>	<i>77</i>	<i>37</i>	<i>36</i>	<i>11</i>	

* Two had two internships each.

SPECIAL INTERNSHIPS

Special internships may be considered comparable to house-ships in furnishing extra training in one aspect of medicine. They were supplementary internship assignments either in the same hospital or in other institutions and were taken by 336, or 18 per cent, of the graduates. In contrast to the house-ships, they were served predominantly in obstetrics or obstetrics and gynecology, in the minor specialties, and in pediatrics. The additional qualification apparently encouraged the men to enter the field emphasized in the special internship. The influence of emphasis in hospital training on the resultant career is quite striking.

Length of special internship was a matter of considerable interest. Of the physicians fortunate enough to secure the extra training, about one-half obtained assignments of six to eleven months, and approximately one-fifth were on the special services for one year or more. With the exception of pediatrics, there was little variation in the length of time spent on special internships by those in the various types of practice. However, of the pediatricians who took special internships, 60 per cent spent one year or more on such services, 20

TABLE 16. PRACTICING PHYSICIANS: LENGTH OF SPECIAL INTERNSHIP

LENGTH OF SPECIAL INTERNSHIP	PHYSICIANS	
	<i>Number</i>	<i>Per cent</i>
Three to five months	87	26
Six to eleven months	173	52
Twelve to seventeen months	62	19
Eighteen months or more	10	3
Not reported	4	—
<i>Total reporting</i>	332	100

per cent six to eleven months, and 20 per cent less than six months.

DEFECTS OF INTERNSHIP EDUCATION REVEALED BY
CONDITIONS ENCOUNTERED IN PRACTICE

While individual reactions to the type of internship training secured are invariably colored by personal tastes and peculiar needs, they portray in the aggregate the viewpoint of physicians facing the practical problems of practice. At least the men are able to see quite clearly the defects of their hospital training as they deal with patients in their offices and at the bedside.

TABLE 17. PRACTICING PHYSICIANS IN EACH TYPE OF PRACTICE WHO FELT THAT THEIR INTERNSHIP HAD BEEN DEFINITELY UNSATISFACTORY

TYPE OF PRESENT PRACTICE	TOTAL NUMBER IN GROUP	NUMBER WHO WERE DISSATISFIED	PER CENT WHO WERE DISSATISFIED
General practice including: obstetrics, major surgery, and other specialties	369	74	20
obstetrics and other specialties but no major surgery	498	145	29
major surgery	80	18	23
obstetrics	108	21	19
no obstetrics or major surgery	92	16	17
General surgery	72	9	13
Surgical specialties	157	35	22
Obstetrics or obstetrics and gynecology or surgery	56	8	14
Internal medicine	96	23	24
Medical specialties	105	14	13
Pediatrics	73	9	12
<i>Total reporting</i>	<i>1,706</i>	<i>372</i>	

Three hundred and seventy-two stated that their internship experience was definitely unsatisfactory while an additional group of 198 considered their experience was only partially satisfactory. The 372 men were grouped according to character of practice in order better to evaluate their criticisms. The largest number were in the five divisions of general practice and totaled 274 men.

Inadequacies of internship education included the training received in the medical and surgical specialties, medicine, surgery, obstetrics, pathology, radiology, anesthesia, and contagious disease.* Weaknesses in preparation for the fundamental fields of medicine, surgery, and obstetrics were especially mentioned. Nearly all expressed a desire for better qualification in the specialty problems encountered in a general home and office practice. Specifically they mentioned otolaryngology, dermatology, urology, venereal disease, gynecology, and fractures. There was a repeatedly mentioned regret that they had not availed themselves of the opportunity for studying the diagnostic and especially the therapeutic aspects of these conditions in the outpatient clinics during their internships.

A considerable proportion listed the lack of organized instruction, supervision, and guidance by their attending staffs as a major shortcoming. A few referred to the need for the teaching of laboratory procedures, prescription writing, and physical therapy. The desirability of introduction to the procedures essential to success in home and office practice was frequently mentioned. As one man expressed it, "At the end of the internship it was necessary to fit the practice to the training received and not the reverse."

A comparison of the five general practice groups revealed some apparently significant differences. The largest group reporting that their training had been inadequate was the gen-

* See Appendix 3, pages 369-400.

eral practitioners who attempted all phases of general and special practice except major surgery. Nearly one-third of these men were discontented with their house staff experience and, significantly, their complaints dealt chiefly with insufficient surgery, obstetrics, and surgical specialties. They also mentioned particularly the lack of organized teaching and supervised experience in the dispensary clinics. Undoubtedly a considerable number of these practitioners would have liked to undertake surgical procedures of major consequence in both the general and special fields, but were deterred by their lack of sufficient hospital experience. Of course this ambition is of questionable validity if the extent of their internship service is appraised. Fifty-six of the men had had rotating internships of twelve months or less and could hardly have legitimate expectations to enter the fields of major surgery directly. The fact remains, however, that many of them had seen no inconsistency in such an ambition. One graduate remarked, "As young interns, we were anxious to do the difficult and unusual abdominal operations, and our attempts at obtaining internships were thus guided."

It is apparent that neither the medical colleges nor the hospitals have made it sufficiently clear to graduates that more is required in undertaking difficult surgical operations than the opportunity to perform a few laparotomies under close supervision during a brief internship.

In contrast to the general practitioners who had been disappointed in an opportunity to do major surgery, the specialists in the field of general surgery registered few criticisms concerning their internships. Those made dealt chiefly with the need for more pathology and more extensive surgical training.

Specialists in internal medicine, however, had many more complaints to make, and included as weaknesses in their in-

TABLE 18. PRACTICING PHYSICIANS: OPINIONS REGARDING INSTRUCTION RECEIVED DURING INTERNSHIP,
BY TYPE OF INTERNSHIP

		TYPE OF INTERNSHIP														
		Rotating		Rotating plus other types		Mixed		Mixed plus other types		Straight		Straight plus other types		Type not stated		Total
		Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Num-ber	Per-cent
ORGANIZED TEACHING																
7	None, could have been given	587	52	91	49	116	40	33	38	46	35	5	36	6	884	48
	None, could not have been given	59	5	6	3	9	3	-	-	8	6	-	-	1	83	5
	None, uncertain if it could have been given	43	4	1	1	9	3	1	1	9	7	1	7	-	64	3
	None, not stated if it could have been given	51	5	4	2	19	7	3	3	7	5	-	-	1	85	5
	Yes, in part of the internships	7	1	13	7	-	-	4	5	2	2	-	-	-	26	1
	Yes, but insufficient	81	7	10	5	14	5	5	6	4	3	1	7	1	116	6
	Yes	295	26	60	33	122	42	40	47	56	42	7	50	3	583	32
<i>Total reporting</i>		<i>1,123</i>	<i>100</i>	<i>185</i>	<i>100</i>	<i>289</i>	<i>100</i>	<i>86</i>	<i>100</i>	<i>132</i>	<i>100</i>	<i>14</i>	<i>100</i>	<i>12</i>	<i>1,841</i>	<i>100</i>

ternship such matters as poor guidance and teaching, insufficient outpatient experience, pathology, x-ray, contagious disease, and specialty training, and the lack of experience designed to fit them for home and office practice.

In the medical and surgical specialties, a wide variety of weak spots was noted and can best be illustrated by the comments of some of the graduates which are given in the Appendix, page 369.

Thirty-nine per cent of the graduates reported that organized teaching had been given them during their internship. Almost one-half said such teaching had been lacking but could have been given. The others had had little or none, and 5 per cent of them said that it was not feasible. It is perhaps significant that there was less organized teaching in the purely rotating internships than among the mixed and straight types. (See Table 18.)

RESIDENCIES

There were 402 graduates, or 21 per cent, who gave a history of hospital training of residency grade. In most instances they had had one type of residency; however, there were thirty who reported having had two, and one who had had three. These combinations included mainly such services as medicine plus pediatrics or medical specialties, surgery plus gynecology and obstetrics or surgical specialties, or obstetrics plus gynecology.

TYPE OF RESIDENCY AND TYPE OF PRESENT PRACTICE

The previous internship preparation of the 402 residents had been rotating for 60 per cent, mixed for 28 per cent, and straight for 12 per cent of the men. However, this does not necessarily mean that rotating interns had an advantage in securing residencies. Actually only 18 per cent of all the gradu-

TABLE 19. PRACTICING PHYSICIANS: TYPE OF RESIDENCY BY TYPE OF PRESENT PRACTICE

TYPE OF PRESENT PRACTICE	ALL GRADU- ATES	TYPE OF RESIDENCY										
		None	Medi- cine	Sur- gery	Pediat- rics	Obstet- rics	Gyne- cology	Gyne- cology and ob- stetrics	Medi- cal spe- cialties	Surgi- cal spe- cialties	Other spe- cialties	Gen- eral
General practice including:												
obstetrics, major surgery, and other specialties	369	318	—	17	1	4	2	2	5	6	6	8
obstetrics and other specialties but no major surgery	498	445	12	3	6	4	—	2	10	4	14	5
major surgery	80	64	1	7	—	—	—	—	—	4	2	2
obstetrics	108	105	2	—	—	—	—	—	—	—	1	—
no obstetrics or major surgery	92	72	11	—	1	—	—	—	4	1	4	1
General surgery	72	62	—	8	—	—	1	—	—	—	1	1
Surgical specialties	157	89	1	7	—	—	—	—	—	60	1	2
Obstetrics and gynecology	56	28	—	2	—	10	9	9	—	—	—	—
Internal medicine	96	75	17	—	—	—	—	—	3	—	2	—
Medical specialties	105	76	5	1	1	—	1	—	12	—	10	—
Pediatrics	73	42	—	—	25	—	—	—	5	—	1	—
Other specialties	31	25	1	—	—	—	—	—	—	—	5	—
Full-time position	130	93	5	3	2	—	—	—	8	—	22	1
In training	34	6	3	7	1	1	1	1	10	7	7	—
No longer in practice	3	2	—	—	1	—	—	—	—	—	—	—
<i>All types</i>	<i>1,904</i>	<i>1,502</i>	<i>58</i>	<i>55</i>	<i>38</i>	<i>19</i>	<i>14</i>	<i>14</i>	<i>57</i>	<i>82</i>	<i>76</i>	<i>20</i>

ates going into rotating internships secured residencies, in contrast to 30 per cent of those serving mixed and 31 per cent of those serving straight internships.

Since only 21 per cent of all the graduates secured residencies, it might be anticipated that the experience might have a strong modifying effect on the type of practice entered. This was found to be true, especially for former residents in pediatrics and in the surgical specialties, for most of them became specialists.

Slightly over one-third of the medical residents limited their practice to internal medicine or the medical specialties. Understandably a considerable number entered a general practice excluding major surgery and obstetrics. Only two were attempting major surgery, one in conjunction with general practice and the other in a surgical specialty.

Former surgical residents either confined their attention to the surgical fields or entered general practice, emphasizing major surgery. A similar situation was found in obstetrics and gynecology. For the whole group, there appeared to be a strong urge for former residents either to specialize or to develop a more comprehensive practice built around their major interest.

LENGTH OF RESIDENCY

Length of residency training might conceivably have a strong modifying effect by reinforcing the tendency to specialize. Actually this did not appear always to be the case, for one-third of all the former residents who had entered practice were in the first three general practice groups and they had had services ranging from one to more than three years. Apparently these men had not been able to make a living in the community in which they were located without engaging

in practice outside the field in which they had received special training.

Curiously, the majority of former residents specializing in general surgery had services of only twelve to seventeen months. This was in marked contrast to the surgical specialties where residencies up to three to four years' duration were encountered. This distinction may have been due to the pio-

TABLE 20. PRACTICING PHYSICIANS: LENGTH OF RESIDENCY BY TYPE OF PRESENT PRACTICE

TYPE OF PRESENT PRACTICE	LENGTH OF RESIDENCY				Total
	12-17 months	18-23 months	24-29 months	30 months or over	
General practice including: obstetrics, major surgery, and other specialties	37	5	5	4	51
including obstetrics and other specialties but no major surgery	32	1	11	7	51
including major surgery	7	4	1	4	16
including obstetrics	3	—	—	—	3
no obstetrics or major sur- gery	15	—	3	2	20
General surgery	9	—	—	1	10
Surgical specialties	22	16	21	9	68
Obstetrics and gynecology	17	—	7	3	27
Internal medicine	12	1	7	1	21
Medical specialties	16	2	8	3	29
Pediatrics	21	1	6	3	31
Other specialties	4	1	1	—	6
Full-time position	15	2	14	5	36
In training	1	—	—	—	1
No longer in practice	1	—	—	—	1
<i>Total reporting</i>	<i>212</i>	<i>33</i>	<i>84</i>	<i>42</i>	<i>371</i>

neer influence in the specialty field by the American Boards of Ophthalmology and Otolaryngology.

POSTGRADUATE STUDY

One method of rectifying inadequacies of undergraduate and graduate education has been by means of postgraduate courses. These have been provided by postgraduate schools, by teaching centers, by county societies and by certain of the larger hospitals. Their purpose has been to enable general practitioners to specialize and to give refresher courses to men in both general and special practice.

On analysis of the material it was found that 33 per cent of the 1,904 graduates had been able to participate in formal postgraduate instruction. Only 10 per cent had gone abroad, marking the decline of popularity of this type of advanced study. Most of the courses taken in the United States were on a part-time basis. This was to be expected since a large portion of the graduates were practicing in university centers. It should be noted that only 10 per cent had been able to leave their work for periods of full-time study in this country.

OUTPATIENT EXPERIENCE AFTER THE INTERNSHIP

The limited extent to which the interns participated in outpatient clinics has already been noted. Educators opposing the idea of interns spending time in these clinics have felt that this experience legitimately belongs to the practitioners. If the intern does not come into sufficient contact with dermatology, syphilology, venereal disease, ordinary upper respiratory infections, and other conditions he will encounter so frequently in a general practice, it has been contended the deficiencies will be made good by outpatient service after he enters practice. Also, it has been claimed that he will learn antepartum and postpartum obstetric methods, and the neces-

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sary correlation of medicine, surgery, and pediatrics, as seen in the ambulatory patient.

If these contentions are true, the average physician will have to attend a large number of outpatient clinics. Actually, it was found that 16 per cent of the group attended no clinics after completion of the internship, and 34 per cent worked in one clinic only. For half of the graduates, therefore, outpatient training in practice did not sufficiently supplement the deficiencies noted in the internship. Only 8 per cent found time to participate in four or more clinics.

If the separate divisions of practice are examined, there is little divergence from the average trend. The great majority of general practitioners and specialists had served as clinical assistants in one to three clinics. It must be remembered that participation in more than one clinic was not necessarily simultaneous, the clinics frequently being attended at different periods. The amount of outpatient work done by this sample of the profession does not appear to have been overburdensome.

There was direct relationship between type of special practice and the clinic attended. To illustrate, 85 per cent of those in general surgery, 73 per cent of the internists, 93 per cent of the pediatricians, 89 per cent of the surgical specialists, and 71 per cent of the medical specialists had worked in the corresponding outpatient clinics. Of the general practitioners, 67 per cent of those emphasizing major surgery had served surgical clinical assistantships. It may be seen in the table on page 78 that the men engaged in general practice, excluding major surgery and obstetrics, gave most emphasis to the medicine and medical specialty clinics. In the remaining fields, attention was more divided among the various outpatient services.

Since 60 per cent of the graduates who returned the ques-

TABLE 21. PRACTICING PHYSICIANS: ATTENDANCE AT OUTPATIENT DEPARTMENT CLINICS AFTER INTERNSHIP,
BY TYPE OF PRESENT PRACTICE

TYPE OF PRESENT PRACTICE	TOTAL NUM- BER RE- PORTING	PER CENT ATTENDING EACH TYPE OF CLINIC									
		Medi- cal	Surgi- cal	Mixed medical and surgical	Pedi- atric	Obstet- ric	Gyneco- logic	Gyne- cology and ob- stetrics	Medi- cal spe- cialties	Surgi- cal spe- cialties	Other spe- cialties
General practice including: obstetrics, major surgery, and other specialties	364	14	46	2	9	8	15	6	9	16	1
obstetrics and other specialties but no major surgery	490	36	14	1	26	6	11	4	28	13	2
major surgery	78	10	67	1	1	1	5	—	8	26	1
obstetrics	104	39	16	2	8	11	11	8	22	12	—
no obstetrics or major surgery	88	56	14	—	15	2	3	1	44	8	1
General surgery	67	1	85	—	1	—	6	—	1	19	1
Surgical specialties	151	3	12	1	4	1	3	—	5	89	—
Obstetrics and gynecology	53	11	17	—	2	45	45	25	4	6	6
Internal medicine	94	73	2	—	5	—	2	—	72	—	—
Medical specialties	102	28	4	—	13	1	2	1	71	4	13
Pediatrics	72	10	1	—	93	3	1	—	15	—	3
Other specialties	28	14	7	—	4	4	4	—	11	4	32
Full-time position	122	16	3	2	7	2	3	—	25	8	14
<i>Total</i>	<i>1,813</i>	<i>26</i>	<i>23</i>	<i>1</i>	<i>16</i>	<i>6</i>	<i>9</i>	<i>4</i>	<i>24</i>	<i>18</i>	<i>3</i>

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tionnaires are engaged in general practice, and since even the specialists would benefit by participation in a number of outpatient clinics at some stage of graduate or postgraduate development, it seems obvious that this aspect of medical education has not been sufficiently utilized.

CHAPTER FOUR. Geographic Distribution of the Medical Colleges Supplying House Staffs to New York City Hospitals

IN MOST parts of the country, the interns and residents in the local hospitals have received their training from a small number of medical schools, confined to a limited geographic area. The openings available each year are few in number and are filled in large part by graduates of neighboring schools. In New York City, however, there are so many house staff vacancies and the area from which the applicants are drawn is so wide that a unique opportunity is provided for the study of medical college preparation. In 1935 there were found to be a total of 103 medical colleges represented among the 1,779* interns, residents and fellows, private assistants, and special interns serving in the seventy-seven approved hospitals included in the survey. These colleges are located in twenty-nine states, the District of Columbia, four Canadian provinces, one country in South America, one in Asia, and nine in Europe.

Besides the differences in curriculum peculiar to the various schools, there are also to be considered the geographic and racial influences of a particular area. These have an inevitable effect upon the student during his four years of exposure to them, and will modify his reactions to internship opportunities which he encounters.

It is reasonable to suppose that students who obtain their undergraduate qualification in the United States will be best fitted to enter internships in our own hospitals. Without exception, the modern American medical school has introduced

* This figure was obtained from our own tabulations; it exceeds that given by the American Medical Association, which was 1,760.

its advanced students into the hospital as clinical clerks. If fully organized, this experience shades almost imperceptibly into the junior internship. From personal contact, the senior medical student has ample opportunity to observe the requirements he must meet as an intern. For the first time he is given responsibility in the care of a patient.* He learns how to obtain the history, to carry out the routine physical examination, and to perform the simple laboratory tests which will be among his first duties as an intern.

It is logical, therefore, to assume that Americans trained in foreign colleges will not be as well prepared to fit into the American hospital internship. The European school is not able to hold the mirror of its curriculum up to the reality of hospital duties to be faced in the American hospital. The training offered is more theoretical and conjectural than that given by our own professors who are face to face with the realities of American practice. Naturally the requirements of practice vary in different European countries and further complicate the picture. In France, particularly, few of the students are expected to attain to an internship at all.

Canadian students are trained along lines almost identical with those followed in the United States. While the colleges vary in quality in different parts of the Dominion, their graduates have been, for the most part, acceptable intern material.

It is of interest to know why the metropolitan area is carrying such a disproportionate share of the internship and residency program of the country. The primary factor is undoubtedly the large amount of clinical material available. New York City bore the brunt of the last great wave of immigration, with a resultant rapid increase in that class of the population which requires municipal provision for hospitali-

* Francis W. Peabody, *The Care of the Patient*, Cambridge, Harvard University Press, 1927, page 37.

zation. Even with the bars raised against the European influx, there has continued to be heavy immigration from the West Indies. There have also been numerous arrivals of people in the lower income brackets from other parts of the country, especially from the South.

The necessity of providing the bare essentials of medical care to a large and needy population has stimulated the erection of many new municipal and voluntary hospitals, and the expansion of those previously in existence. In toto these hospitals provide a supply of ward beds considerably above what might be expected of even the most densely populated region of the United States.

This vast resource of hospital facility has drawn young men seeking advanced medical training from all parts of the North American continent and from abroad. Those coming from other parts of the country are impelled to do so either by a desire for better qualification than can be secured during the single year of rotating internship so popular in many parts of the United States and Canada or by a quantitative lack of internships in their home states.*

In addition, many of the graduates of outside schools were originally from New York City. Unable to secure admission to medical schools in this region, they have gone to other parts of the United States, Canada, or abroad for their medical education. On graduation, it is natural for them to wish to return to New York City for their internships.

Finally, graduates of the five medical schools located in the city cannot fill more than half the internship openings annually available. Consequently the hospitals must turn to outside resources to fill their house staff needs.

Such a wide geographic representation has been considered

* *Journal of the American Medical Association*, vol. 108, pages 1049-1050, March 27, 1937.

of great educational value. The mental stimulation derived from contact with schools of thought in other localities has been a great spur to healthy progress and systematic study. This has been true not only for the interns and residents, but for the attending staffs as well. It has been the best antidote to provincialism of viewpoint so common in those hospital groups which lack contacts outside their immediate circle. If the interns have been drawn from institutions of good caliber, there has been a beneficial spirit of emulation and competition, so valuable in producing a desirable morale. Sometimes it has been forgotten that a very important part of the teaching provided the interns is that which they give each other. When they have been consistently obtained from one school, there has been a trend toward complacency and inbreeding, with resultant loss of initiative. Also, men drawn from various parts of the country are less clannish and the hospital staff tends to get along better as a whole. Consequently, New York hospitals have welcomed students who have obtained their degrees from schools in all parts of the United States and Canada.

House staff groups in New York City reveal to what a remarkable extent this principle of diversification of origin has been applied. As just indicated, there are a great many more schools involved than hospitals. The degree to which each school is represented has depended on a variety of complex factors. Before these can be properly considered, a further elucidation of residency and internship distribution must be presented.

MEDICAL COLLEGE REPRESENTATION

Table 1 in Appendix 1 shows the number of men from each medical school, by type of house staff position, in the approved hospitals of New York City in 1935. As might be

expected, the graduates of the five colleges located within the metropolitan area constituted a large proportion of each classification, totaling 722, or 41 per cent, of the 1,779 members of house staffs. If individual medical colleges outside the city are considered, those having the largest representation may first be mentioned. The list of those represented by thirty or more interns and residents was confined to seven universities, Yale, Georgetown, George Washington, Johns Hopkins, University of Maryland, Harvard, and Syracuse. Significantly, these schools are located in cities at no great distance from New York. If schools with twenty or more graduates are considered, there are found to be seven additional ones, Rush, Tufts, University of Michigan, Jefferson, and University of Pennsylvania in the United States, McGill in Canada, and St. Andrews in Scotland. The American colleges in this group are located within the northeastern quarter of the country. As the unit of measurement is decreased in size, there is, of course, progressively wider distribution.

If the unit is reduced to ten to nineteen, the following twenty-four schools appear on the list: Emory, Loyola, Northwestern, Tulane, Boston University, Minnesota, St. Louis, Creighton, Nebraska, Albany Medical, Buffalo, Rochester, Duke, Western Reserve, Ohio State, Tennessee, Texas, University of Virginia, and Medical College of Virginia in the United States, Queen's and Toronto in Canada, and Rome, Edinburgh, and Berne in Europe.

This leaves a group of twenty-nine American colleges and thirty-one foreign colleges with less than ten graduates each on the house staffs in New York City.

In all, there were included sixty-five of the seventy-seven American schools listed by the Council on Medical Education, seven of the ten Canadian colleges, and thirty-one South American, European, and Asiatic institutions. These 103 col-

leges make up a large proportion of the medical institutions of the world.

RESIDENTS

If the representation of medical colleges is analyzed by type of house staff appointment, certain significant facts appear. To begin with, it was surprising to learn that only 136, or 26 per cent, of the residencies were filled by graduates of the five New York schools, while 323, or 62 per cent, were filled by graduates from other parts of this country, 6 per cent from Canada, and 6 per cent from Europe. (See Table 22.) The reasons for such a disproportion must be left partly to speculation. However, the following inferences seem to be valid: first, that the one-year rotating internship which many of the latter group had obtained elsewhere was an inadequate preparation for practice; and, second, that there is a growing recognition of New York City as a graduate center.

In contradistinction, graduates of schools in the city have in a very large proportion of cases entered practice in the metropolitan area. Many of them after a two-year internship have planned to continue their education as voluntary members of hospital staffs. Not being required to face the task of independent practice at a distance from a teaching center, they have not had the same incentive to secure postinternship residency training.

It is only fair to state that many of the residencies have been in reality little more than senior internships. As such, they have been much more attractive to the candidate with only one year of rotating experience as a foundation than to those with a longer internship.

INTERNS

Quite a different situation is found among the interns. In

TABLE 22. HOUSE STAFFS OF THE SEVENTY-SEVEN APPROVED HOSPITALS, BY LOCATION OF MEDICAL COLLEGE, 1935

MEDICAL COLLEGE	RESIDENTS AND FELLOWS		PRIVATE ASSISTANTS		SPECIAL INTERNS		INTERNS		TOTAL	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Columbia University	34	6	3	15	5	5	104	9	146	8
Cornell University	25	5	2	10	5	5	54	5	86	5
Long Island College	30	6	1	5	7	7	146	13	184	10
New York Medical College	11	2	—	—	—	—	74	7	85	5
New York University	36	7	1	5	10	9	174	15	221	13
<i>Total New York City</i>	<i>136</i>	<i>26</i>	<i>7</i>	<i>35</i>	<i>27</i>	<i>26</i>	<i>552</i>	<i>49</i>	<i>722</i>	<i>41</i>
Other United States	323	62	12	60	71	68	453	40	859	48
Canada	32	6	1	5	5	5	28	2	66	4
Foreign	29	6	—	—	1	1	102	9	132	7
<i>Grand total</i>	<i>520</i>	<i>100</i>	<i>20</i>	<i>100</i>	<i>104</i>	<i>100</i>	<i>1,135</i>	<i>100</i>	<i>1,779</i>	<i>100</i>

contrast to their poor showing among the residencies, the graduates of Columbia, Cornell, Long Island, New York, and New York University medical colleges filled 552, or 49 per cent, of the 1,135 internships available in the city in 1935, while 40 per cent came from other American colleges and 11 per cent from Canada and Europe. The fact that interns from New York City colleges are slightly outnumbered by graduates of colleges outside New York is eloquent evidence of the importance of New York City as a center for medical training. It also reveals an unrivaled opportunity for cooperative use of graduate resources by a very large number of medical schools. If the principal of such cooperation is sound, it is highly desirable for New York schools to enjoy reciprocity with hospitals throughout the United States and Canada. In keeping with the ideals of cooperation exemplified by the American Association of Medical Colleges, there must be intelligent sharing of desirable internship resources in all parts of the country.

RELATION OF GEOGRAPHIC LOCATION OF UNDERGRADUATE MEDICAL TRAINING TO TYPE OF INTERNSHIP

Taking the New York City medical colleges as a group and comparing them with other American, Canadian, and European schools, it is possible to obtain a clear idea of the representation of each geographical unit.

The New York City colleges, compared to others in the United States, have a higher proportion of their graduates in the rotating and mixed categories, and a lower proportion in the straight. A majority of the foreign graduates have secured rotating internships. As all approved hospitals have been instructed by the American Medical Association to accept foreign graduates only when American material was not available, there remains a justifiable assumption that some of

these rotating internships have been the least desirable presented. By way of illustration, it should be explained that a number of hospitals have appointed twice as many junior interns as seniors. Of necessity, at the end of the first year, half of the juniors are dropped. They have been utilized to carry the burden of ambulance duty, routine laboratory work, and writing of case records, without an opportunity to achieve seniority or carry responsibility. Frequently these places have fallen to the lot of the foreign graduates.

TABLE 23. INTERNS IN THE SEVENTY-SEVEN APPROVED HOSPITALS,
BY LOCATION OF MEDICAL COLLEGE, 1935

MEDICAL COLLEGE	ROTATING		MIXED		STRAIGHT		TOTAL	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
Columbia University	51	50	44	42	9	8	104	100
Cornell University	21	39	27	50	6	11	54	100
Long Island College	130	89	5	3	11	8	146	100
New York Medical Col- lege	70	95	1	1	3	4	74	100
New York University	139	80	28	16	7	4	174	100
<i>Total New York City</i>	<i>411</i>	<i>75</i>	<i>105</i>	<i>19</i>	<i>36</i>	<i>6</i>	<i>552</i>	<i>100</i>
Other United States	328	73	77	17	48	10	453	100
Canada	15	53	7	25	6	22	28	100
Foreign	93	91	3	3	6	6	102	100
<i>Grand total</i>	<i>847</i>	<i>75</i>	<i>192</i>	<i>17</i>	<i>96</i>	<i>8</i>	<i>1,135</i>	<i>100</i>

In other institutions, there has seemed to be a direct relationship between the proportion of foreign-trained interns and the quality of service. Inability to fill all appointments from American sources has usually been a tacit admission of weakness. Possible exceptions are isolated or outlying hospi-

tals, or hospitals desiring either to take in political refugees or to show consideration to some special racial group.

In view of the restrictions against men receiving their education abroad, the finding of 9 per cent of them among the total number of interns is worthy of further study. (See Table 22.)

Comparison of the number of these graduates with the registration figures in foreign schools in 1935-1936, as given by the American Medical Association, reveals curious contrasts.* In spite of the large number of American students now studying in Italy, the twenty-five Italian-educated interns and residents serving in New York hospitals did not quite equal the number coming from McGill University. Also, the large student aggregations reported enrolled in Germany and the University of Paris were not impressively represented.

Curiously, the School of Medicine of the Royal College of Edinburgh, with 207 American students, had only eleven graduates on New York house staffs, while St. Andrews, with an American enrollment of ten, surpassed all other European schools, with twenty interns and residents in the city. Because of the present uncertainty as to the future of physicians educated abroad and their difficulty in securing satisfactory internships, their number must be expected to vary from year to year.

Of absorbing interest was an appraisal of medical college representation in individual hospitals. While there naturally was variation from year to year, it was usually within a definite group. Certain hospitals have given preference to a small group of outstanding American schools and have consistently filled their vacancies from these sources. Once a hospital has

* *Journal of the American Medical Association*, vol. 107, page 673, August 29, 1936.

established its reputation in a certain school, it will tend to draw a number of the most promising men, year after year. The recommendation of interns on the staff plays an important part in this type of selection. In one well known hospital, all candidates must have served a summer substitution and have been favorably reported on by the interns before they may be considered for appointment. Some intern committees have reported a preference for southern men, because of their reputed cultural background and habits of courtesy.

In one hospital it was observed that all interns were drawn from American colleges outside New York. Such a finding raised a question as to the quality of the experience. An answer was needed to explain why the graduates of local schools have consistently shunned such a hospital. Manifestly, their opportunities of observation of the situation were superior to those of men coming from a distance.

Table 2 in Appendix 1 shows the number of house staff members in each of five large New York hospitals and the medical schools from which they came. Conclusions drawn from such a tabulation will, of course, be of relative value only. Accurate trends can be shown only by averaging the representation over a period of years.

CHAPTER FIVE. Factors Contributing to House Staff Efficiency

THE factors influencing the physical well-being and efficiency of interns include health care, housing, call systems, recreation, food, remuneration, and uniforms. They might be termed accessory elements, and they greatly influence the course of the internship besides having a direct bearing on the quality and quantity of service rendered the patient. These factors, of course, apply with almost equal force to the residencies, although a resident is in a better position than an intern since he usually has some choice in the matter of living quarters.

HEALTH CARE

Interns are usually between the ages of twenty-five and thirty; they should be passing through the healthiest period of their lives. Although they are exposed to additional health hazards, the safeguards at hand should at least neutralize the dangers encountered.

Unfortunately, the hospitals in New York City have not kept accurate record of the extent and nature of illness and injuries suffered by their house staffs. In almost all instances, if the illness has been serious enough to confine a man to bed he has been hospitalized, but the hospital records have not been kept separately. An estimate of the extent of intern ill-health must be based on isolated examples which, however, illustrate very clearly the main aspects of the problem.

HEALTH HAZARDS

Intercurrent diseases have been the chief cause of intern

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illness. Infections of the upper respiratory tract appear to be more prevalent than among the general population. The heaviest work for the intern occurs during the peak load of hospital occupancy in March, April, and May. At this time physical resistance is low for the intern as well as for the general population, and that of the intern is further depleted by long hours of work and by broken sleep.

On one service of a large public hospital some years ago, over 75 per cent of the house staff fell ill during the spring rush of work, seriously disrupting provision for even minimum care of patients. On investigation it was found that the men had been working night and day without sufficient sleep. To correct the difficulty, one more intern was added to the staff, and each junior in turn was assigned to night duty six weeks at a time. He cared for routine admissions and all other calls during the night which were within his range of capability. Thus, the sleep of the remainder of the group was interrupted for emergencies only. After a thorough trial the plan has resulted in material reduction of illness among the interns and has been adopted by an adjacent service.

Loss of sleep, however, has not been due to hospital duties entirely. In the average hospital the interns are off duty every other night and every other week-end. A great many find the attractions of night life in a big city difficult to resist. Three to four evenings each week completely free of responsibility, after years of restriction imposed by the medical course, are a welcome release. Instead of part of the free time being used wisely for study and extra sleep, it has been devoted to too much social activity. Not infrequently, an intern has been more tired on the morning after his evening of rest than after a night on call. In an effort to curb this tendency, most hospitals require their house staff men to return to the hospital before midnight.

Tuberculosis is the disease which may most seriously affect the intern's career. A number of cases were encountered during the survey, but complete figures were not available. Whether or not the incidence is greater than among the general population is still subject to proof. Nonetheless, certain facts stand out sharply and must be recognized. Modern surgical treatment of tuberculosis has brought many cases into the general hospital which previously were isolated in sanatoria. Besides known cases, there are always a number of unrecognized infections admitted to every hospital. Symptoms may be masked by some crisis such as diabetic coma or skull fracture. Exposure to such patients is especially dangerous, for the usual precautions may be neglected. Most interns have an inadequate amount of outdoor recreation and a correspondingly lowered resistance to tuberculosis.

Of six cases of tuberculosis among interns reported during the past three years, four were discovered through routine health examinations. None of the four were aware of health impairment. Of the other two, one had had tuberculosis before beginning her internship and had concealed the fact, and the other broke down during a year's special assignment to pathology.

Accidents and injuries are hazards which interns must face. Besides the usual dangers encountered in the line of duty, interns run into extra dangers during ambulance service. In New York City most of this service is carried by the intern. The state law requires a physician's presence on all calls, and the easiest solution has been to make ambulance riding a part of the intern service. Ambulances are especially prone to accidents owing to the speed at which they travel and to their dependence on bell and siren to warn other vehicles as they disregard traffic lights. In the older conveyances, ambulance surgeons rode precariously on a seat in the rear, from which

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they were easily thrown during a collision or skid. Serious fractures of the skull, as well as other major injuries, resulted. While the newer ambulances are much safer, the manning of this service must still be classed as one of the hazardous occupations.

Accidental infections to hands or eyes in the operating room, on the wards, and in the clinics must always remain a menace to be faced by physicians of whatever status.

In spite of all the risks taken by the intern on the ambulance and in the hospital, he has been protected by insurance only in the rarest instances. The provisions of the state compensation law are inadequate when applied to interns, since interns are apprentices and not salaried employees. Some form of insurance financed by the hospitals seems essential.

HEALTH EXAMINATIONS

Annual health examination of medical students and pupil nurses has become a well established procedure, and valuable contributions to the literature have resulted from the studies made of these two groups. Tuberculosis and psychiatric difficulties have been found to be of not infrequent occurrence among medical students, while tuberculosis has been a constant menace to the young nurse.

Only very recently, however, has serious thought been given to the systematic health check-up of house staffs. At the time of the survey only eight of the sixty hospitals with general internships were making this a routine matter, although, on the tuberculosis services in both general and special hospitals, semiannual roentgenographic examinations were required. Since that time, by a departmental ruling semiannual examinations have been made obligatory in all municipal hospitals.

The need for health examinations has been most apparent

on tuberculosis and contagious disease services, and here pioneer work has been done. For instance, at the Willard Parker Hospital where both these conditions are handled, the health care of the house staff has been considered a matter of primary importance. Each new intern is given a physical examination, including Schick and Dick tests. Routine x-ray examination of the lungs is made, and repeated every six months. Immunization for diphtheria is given routinely, and for scarlet fever if desired. Few of the house staff men have contracted contagious diseases from the patients, the chief problem being upper respiratory infections. A similar health program has been in force at the Kingston Avenue Hospital.

The importance of re-examination every six months cannot be overemphasized. Only during these subsequent observations can the health hazards incidental to the internship be determined. An instance may be given to illustrate the point.

At one of the large municipal hospitals, the junior interns all received chest x-ray examinations on beginning their service on July 1. In none was there evidence of tuberculosis. On the following January 1, all except one were re-examined and again found to be in normal health. The single truant failed to keep his appointment with the roentgenologist. Finally, in February, at the insistence of the resident, the x-ray examination was made and revealed not only tuberculosis but beginning cavitation.

Obviously, even re-examination every six months may not pick up the very earliest stages, but this appears to be the most practicable period for all purposes. If the examination is faithfully carried out, few lesions should progress beyond the initial stage. The cases of tuberculosis among the interns brought to light by the appearance of symptoms were moderately or far advanced.

In one of the voluntary hospitals where routine health ex-

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aminations have not been made, an intern died of heart disease. It was then discovered that there had been difficulty of years' standing which he had concealed. Inability to stand the strenuous requirements of the service resulted in heart failure.

HOSPITALIZATION

While resources for hospitalization have not been fully adequate, in 78 per cent of the hospitals private rooms have been made available for the care of their own staff. However, the overcrowded municipal institutions too frequently have made no provision other than admission to the general ward, for the few quiet rooms available have been needed for other purposes. Only three hospitals in the city have set aside an infirmary for the needs of the house staff. Another deficiency has been lack of facilities for isolation of contagious diseases.

TABLE 24. PROVISION FOR HOSPITALIZATION OF SICK INTERNS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
In private room	5	10	32	47
On general ward	3	4	3	10
Special infirmary	1	-	2	3
<i>Total</i>	9	14	37	60

OBSTACLES TO AN INTERN HEALTH PROGRAM

Interns have been slow to appreciate the importance of routine physical examinations. Only when a health disaster has brought the need forcibly to their attention have they taken an active interest in the matter.

Frequently, well planned efforts by superintendents or chairmen of intern committees have been defeated by indif-

ference on the part of the interns themselves. In some instances there has even been a vigorous resentment toward such a program instituted on a compulsory basis. Hence, recent interest in health examinations on the part of the intern groups has been of much value to hospital administrators.

A second difficulty in establishing a program has been the lack of competent and interested personnel to take the responsibility for intern health care. The attending staff physicians have always been generous of their time in rendering medical and surgical attention to the interns when they were ill, but most of them consider health examinations to be a tedious and unattractive assignment. If responsibility has been left to them, their lack of enthusiasm has been equaled only by that of the average house staff. Manifestly, if an attending staff member with an interest in preventive medicine cannot be secured, the work must be assigned to a paid member of the staff.

In many instances the task has been delegated to the resident. In most cases this has merely added another task to an already overworked individual. Even with the best of intentions, examinations have not been carried out on schedule and records have been incomplete.

The most satisfactory arrangements were seen in two of the large municipal hospitals where full-time members of the attending or administrative staff were in charge. In one, for example, the deputy superintendent carried out the examinations, giving a complete health examination to each intern the day before the commencement of his internship. This plan might with great benefit be made compulsory in all hospitals.

It seems essential that the health program be administered by the superintendent. Records should be checked by him to see that they are completed without delay. It would seem a fair charge on the hospital budget to pay one of the younger

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attending staff physicians a modest stipend to care for the routine medical needs of a health service to the interns.

The following compilation of items is a composite picture of the health programs for house staffs in hospitals of New York City. No hospital carries out all the procedures, but each item on the list is found in some hospital.

1. Required appearance of interns one day before going on duty. This provides uninterrupted time for completion of all examinations
2. A health survey including:
 - a. Test of vision and hearing
 - b. Ear, nose, and throat examination
 - c. Examination of teeth
 - d. Routine physical examination
 - e. Blood pressure
 - f. Complete blood count
 - g. Urinalysis
 - h. X-ray of heart and lungs
 - i. Other tests as indicated
 - j. Attention to psychological and nervous make-up
3. Careful records of the findings in the examination of each intern to be kept in a confidential file in the superintendent's office
4. Re-examination every six months, particularly x-ray of the chest
5. The delegation of executive responsibility for enforcement of the program to a member of the staff, preferably a paid member

HOUSING AND FOOD

In half the hospitals of New York City, the living quarters provided for interns and residents have been inadequate in one or more respects. Crowding, unattractive surroundings, poor equipment, and poor bathing facilities were the objectionable features most commonly encountered. In the remaining hospitals, conditions have ranged from average livability to the luxury found in a modern men's club. The difficulties noted may be listed as follows: poor lighting, in-

sufficient closet space, noisy corridors, defective heating and ventilation, and occasional encounters with insect pests.

An estimate of housing facilities in the sixty hospitals with internships is shown in Table 25. It is interesting to note that in general the reports of the interns corresponded closely to the opinion of the investigator. It should be mentioned that an attempt was made to have the number of interns interviewed bear some relation to the size of the hospital, so that the sampling would be reasonably representative.

TABLE 25. QUALITY OF INTERN HOUSING

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
<i>As observed by the investigator</i>				
	NUMBER OF HOSPITALS			
Excellent	2	3	7	12
Good	1	5	11	17
Fair	6	5	11	22
Doubtful	—	1	8	9
<i>Total hospitals</i>	9	14	37	60
<i>As reported by 269 interns</i>				
	NUMBER OF INTERNS			
Good	19	41	77	137
Fair	26	9	32	67
Doubtful	13	20	32	65
<i>Total interns reporting</i>	58	70	141	269

The chief factor in inadequate housing has been the inability of hospital boards and administrators to visualize the rapidly growing house staff needs of the modern hospital. As pointed out in an earlier chapter, house staffs have more than tripled in number since 1914. Whereas ten to fifteen years ago, a ratio of twenty-five to fifty bed patients to each intern

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was not considered excessive, today the ratio favored by leading hospitals ranges from ten to fifteen to a man. This is striking evidence of the increased personal attention required by patients in the modern hospital, and must be carefully considered in all future hospital planning.

Also, the addition of wards and private pavilions has increased the size of hospitals. Rarely has there been corresponding enlargement of intern quarters. Unfortunately, even with newly erected buildings, plans for the house staff quarters have provided for only immediate needs. As these are soon outgrown, there have been the alternatives of expensive additional building or putting two interns in a room designed for one.

Curious instances of poor foresight or parsimony may be cited. At one of the large hospitals, a new building of over 1,700 beds was completed without any thought of quarters to house the additional interns and residents needed to care for the patients. Only after a period of three or four years of overcrowding was the deficiency partly corrected.

In another hospital, a house staff wing was included in a new building, but it was given to the nurses, billiard room and all. Meanwhile the interns were quartered in ill-adapted rooms designed for hospital workmen and laborers.

It has been felt—and with some justice—that nurses should be given first consideration in the suites prepared for personnel. Nevertheless, the interns have too often been relegated to antiquated parts of the hospital without sufficient thought for their comfort and physical well-being. There has been an unfortunate tendency to consider them as transients and therefore better able to put up with inconveniences.

In justice to the hospital, there is one factor that is worthy of mention. The wear and tear on furnishings and equipment of house staff quarters is often heavy. Interns do not always

have a sense of responsibility for the care of hospital property, and depreciation has been unnecessarily rapid.

In spite of these imperfections, encouraging signs of improvement are in evidence. During the past three years, in three of the municipal hospitals excellent new staff houses have been completed or are under construction, and others are in prospect. Two of the newer voluntary hospitals have estimated their house staff needs correctly and have provided accommodations of excellent quality. The public must be made to realize that adequate patient care involves more than the provision of hospital beds, laboratories, and operating rooms. The medical staff in residence must be properly housed if they are to render efficient service.

Twenty-four of the seventy-seven hospitals in the city were able to accept women interns. The chief problem has been to provide quarters for one or two women—in most of the hospitals the housing of the men interns has been difficult enough. Actually sixty-three women interns and residents were on duty in 1937 in eighteen hospitals. In that year 4.4 per cent of all the graduates were women, so they are only a small fraction of the number to be placed.

The subject of food has always been a vexatious one because of individual peculiarities and the monotony so frequently encountered in an institutional diet. It was a matter of some surprise to find so many interns expressing satisfaction with their food. In one well known new hospital, they went so far as to say, "The food couldn't be better!"

In another large modern hospital of similar organization, there was almost universal complaint. Unexpectedly, the opinions obtained were practically the same in each hospital group. In a majority of instances it was possible to check the accuracy of reports at the time of the survey.

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Attractive and satisfying meals depend on a variety of factors, such as the amount of money allowed in the budget, the inclusion of a generous quantity of meat and fruit on the menu, the skill of the dietitian, the character of the kitchen equipment, and the method of serving food. The finest quality of food may be ruined in the cooking, or served in such a manner or in such unattractive surroundings as to make it unpalatable.

The superintendent of one large hospital, in an earnest effort to improve the meals, called in consultation the chef of

TABLE 26. QUALITY OF INTERNS' MEALS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
<i>As observed by the investigator</i>				
	NUMBER OF HOSPITALS			
Excellent	1	5	12	18
Good	3	5	12	20
Fair	4	3	4	11
Doubtful	1	1	9	11
<i>Total hospitals</i>	9	14	37	60
<i>As reported by 268 interns</i>				
	NUMBER OF INTERNS			
Good	19	37	80	136
Fair	30	18	30	78
Doubtful	9	15	30	54
<i>Total interns reporting</i>	58	70	140	268

a famous New York hotel. This expert, after a careful survey, remarked, "I could do no better than your own cooks are doing with your antiquated stoves and serving equipment." Two large municipal hospitals with identical food budgets were compared. In one the food was voted excellent,

and in the other there was universal complaint. The former had kitchen equipment comparable to that of a good hotel. In the latter the kitchens were badly out of date.

Complaints made by interns were: "Meals are unsatisfactory, poorly balanced, unappetizingly prepared and served." "Never have steak or chops." "Food is good, but unappetizing method of serving, insolent attendants, and noisy dining-room." "Food O.K. but noisy service and crowded dining-room. Meal-time is not relaxing—gulp food down and get out."

In eleven hospitals the investigator considered the food to be of doubtful quality, and not suited to the strenuous life of the interns.

Food for the house staff obviously must be prepared for the needs of vigorous, hard-working young men and women. They cannot be expected to be satisfied with hospital diets or food selected primarily for those who are ill.

Residents and house staff members of similar status on special services were asked to register their opinion of the quality of their quarters and food. As residents they have a right to expect some preference as to room assignments, hence it was of interest to compare their reactions with those of the interns on general services. Since food and housing are matters on which one might anticipate the most adverse criticism from house staffs, the relatively small proportion who considered these factors in their hospital existence as definitely unsatisfactory was surprising.

It might be claimed that the residents hesitated to state their true feelings on these subjects and that these figures portray too roseate a picture of the situation. In answer, it seemed to the surveyor that these men expressed their opinions with great frankness, since they were assured that their confidences

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would be guarded. Moreover, it was possible in most instances to check their reports by a tour of inspection. The impressions obtained tallied very closely with the figures.

In any case, it should be pointed out that among the residents 29 per cent considered there was need for improvement in housing and 42 per cent voted that their food was not all that it should be. Curiously the proportion voicing a completely unfavorable opinion was practically the same in both instances. It should be noted that there was very little variation in the three classes of hospitals.

TABLE 27. QUALITY OF HOUSING AND FOOD, AS REPORTED BY
217 RESIDENTS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
<i>Housing</i>				
Good	73	41	40	154
Fair	9	11	2	22
Doubtful	19	13	8	40
<i>Total reporting</i>	<i>101</i>	<i>65</i>	<i>50</i>	<i>216</i>
<i>Food</i>				
Good	55	37	34	126
Fair	30	18	4	52
Doubtful	16	11	12	39
<i>Total reporting</i>	<i>101</i>	<i>66</i>	<i>50</i>	<i>217</i>

CALL SYSTEMS

One of the primary purposes of a house staff has been to have medical service constantly within call to cover emergency situations. In addition, new problems are continually arising in different parts of the hospital, requiring the interns' attention. Such service necessitates, at least, telephone exten-

TABLE 28. TYPE OF CALL SYSTEM USED

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
Central office recording	—	—	1	1
Chimes or bell	—	1	6	7
Loud speakers	2	4	4	10
Light flash signals	3	3	9	15
Telephone only	4	6	17	27
<i>Total</i>	9	14	37	60

sions in the rooms of the house staff, and a call system throughout the hospital. Without this provision for locating a roving personnel, there is not only a great waste of time for the switchboard operator and the attending and house physicians, but for the nurses as well. The patients suffer in consequence.

The particular type of call system installed in the hospital is of interest in connection with this study only as it relates to the efficiency and comfort of the house staff. If, as was discovered in one hospital, twelve interns must sleep in one room in which there is a telephone that wakes the whole group when one is needed at night, the system is unsatisfactory, to say the least. But this is really a housing problem.

RECREATION AND VACATIONS

Unlike the carefully arranged schedules for nurses, no time has been set aside for house staff recreation. Under the present arrangements, the intern must seize an hour during the slack period of the day for an indoor or outdoor game. While as a rule he has every other evening off duty, the time is more often utilized for home visits and social activities. With the exception of basketball or handball, few outdoor

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games are well adapted for evening enjoyment. The chief difficulty occurs during the winter season when work is heaviest, physical resistance lowest, and outdoor facilities least available. Of the 249 interns who were questioned on this point, 171, or about 70 per cent, reported that they had sufficient time for recreation. The proportion of men who were satisfied was about the same in the three types of hospitals.

Handicaps are accentuated in metropolitan hospitals by lack of space for tennis courts and other outdoor games. Real estate values are so high that utilization of ground for this purpose becomes almost prohibitive. Municipal hospitals particularly are in need of vacant areas for recreational use. Bellevue Hospital is an outstanding example of this. It seems almost incredible that this institution once had ample grounds with tree-shaded lawns and flower beds. Over a century ago this space was sold by a short-sighted administration for tenement construction. Today this hospital has a single tennis court which must be shared by 150 house staff members and the Mills School for Male Nurses.

Neighboring parks and gymnasia are a poor substitute for resources lacking within the hospital enclosure. Satisfactory outdoor exercise should be under hospital control, preferably

TABLE 29. QUALITY OF RECREATIONAL FACILITIES

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
Excellent	2	5	2	9
Good	1	1	3	5
Fair	2	3	14	19
Doubtful	4	3	12	19
No facilities	—	2	6	8
<i>Total</i>	9	14	37	60

with a telephone close at hand. Where space is at a premium, a satisfactory substitute has been the development of handball courts on the roof. These can be covered and used all winter.

Ping-pong, pool, billiards, and cards constitute average indoor diversions. Four hospitals maintain squash courts or gymnasias.

Only exceptionally does an intern avail himself of recrea-

TABLE 30. TYPE OF RECREATIONAL FACILITIES

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
<i>Number of hospitals</i>	9	14	37	60
Game room	6	10	19	35
Out of doors	5	10	15	30
Tennis court	5	7	13	25
Lounge	5	8	7	20
Handball court	2	5	4	11
Squash court or gym- nasium	2	1	1	4
Basketball court	2	—	—	2
Use nearby facilities	3	1	7	11
No facilities	—	2	6	8

tion of a cultural type. Appreciation of music, art, and literature have found little place in the crowded years of medical study. There has been little time for the study of historical medicine or the contributions of art to medicine. Unfortunately, New York does not possess a medical museum and thus lacks such a stimulus to widening of the mental horizon. It is true that intern groups occasionally receive presents of tickets to dramatic and musical productions, and these provide a welcome break in the strenuous round of hospital duties.

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However, there is unquestionably a great need for a better cultural use of time off duty.

For interns on a two-year service, vacations vary from two to four weeks. The time has been utilized for visits at home, positions as camp doctor, and short trips as substitute ship surgeon. On the score of vacation time there was no complaint.

It has been the custom of many hospitals to use fourth-year medical students as summer substitutes during the vacation period. This is a valuable experience for the student and gives the hospital an opportunity to size up possibilities for the future intern staff.

STIPENDS

A great deal of attention has been given by the American Medical Association and local intern organizations to the subject of cash allowances for interns. Admittedly, the essential remuneration for the intern's contribution of service is an adequate educational preparation for practice. In weaker hospitals, unfortunately, there has been a tendency to offer a cash inducement in lieu of education. There are hospitals where neither a good education nor pay are provided, and in these the interns have a legitimate cause for grievance.

Superior hospitals, without question, could require a tuition fee and have little trouble filling their staff places with desirable interns. In the alternative between education and pay, the issue is clear cut.

Reginald Fitz* has pointed out that the quality of the house staff in voluntary hospitals in Massachusetts was usually directly proportional to the amount of endowment. These hospitals were able to secure the best intern material and to

* Reginald Fitz, et al., Intern Training in Massachusetts, *New England Journal of Medicine*, vol. 210, pages 915-917, April 26, 1934.

furnish the best quality of education. Without question, a great increase of appropriation for intern needs is urgently required. However, it must be applied first to bettering their education, their housing conditions, and their food, recreation, and health care.

However, a word remains to be said in favor of monthly honorarium or stipend to provide funds for the current needs of the intern. To this idea there has been little or no opposition, although voluntary hospitals struggling with mounting deficits have been loath to embark on a new expenditure the possible limits of which have been ill-defined. Municipal hospitals give their interns fifteen dollars a month pocket money, but few of the privately controlled hospitals have seen their way clear to follow suit. However, in a very few hospitals of the latter group, a small cash bonus or a needed instrument has been given.

The increasing length of time required for adequate medical training, and financial stringency during the depression, have emphasized the problem of financing a medical career. The vast majority of graduates in New York City take a two-year internship. In addition, the three-year requirements proposed by the qualifying boards for the specialties necessitate a search for funds to pay salaries for an increased number of residents and fellows.

A final point may be made. If the number of men entering practice is not excessive, and if the young physician achieves training of such quality that he may look ahead with some assurance to a self-supporting practice, pay for interns is not a pressing issue.

INTERN ORGANIZATIONS

The increased interest in intern education has been reflected by a trend toward the formation of intern organizations. In

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most instances this development has been welcomed by the hospital administration because of the opportunity better to understand internship difficulties and to meet inadequacies in their education. It has been recognized that at least 50 per cent of the responsibility for the success of an internship is dependent upon the initiative, conscientiousness, and faithfulness of the intern. The conclusions of the Commission on Medical Education bear directly on this point and deserve to be quoted:*

The crucial element in medical education is the student, upon whose character, interest, preparation, ability, and industry so largely depend the results of medical training.

It is an axiom that true education, particularly at the professional level, is self-education. Medicine must be learned by the student if he is to develop judgment, discrimination, and intellectual self-reliance. . . .

The training should aim to develop in the student sound methods and habits of study and arouse an interest in the fundamental problems of medicine which will equip him to continue his own self-education throughout his professional life.

Insofar as intern organizations have aroused their members to the necessity of formulating plans for self-education, their contribution has been of great value. Also, by bringing to light the imperfections in their training, in educational resources, and in provisions for their housing, health care, and recreation, their publications have been a very valuable contribution. The interest stimulated among hospital administrators and attending staffs has resulted in installation of libraries, organization of journal clubs and seminars, health programs, and better arrangements for recreation.

In New York City, an inter-hospital organization called

* Commission on Medical Education, *Final Report*, New York, Office of the Director of the Study, 1932, page 246.

the Interne Council, representing the men in some of the municipal and voluntary hospitals, has been formed. Its aims, as stated in a recent article,* are:

1. To elevate the educational standards for internes throughout America.
2. To secure regular, monthly, financial remuneration for all internes.
3. To promote interne welfare and health through better living facilities, a vacation period, adequate recreational facilities, periodic health examinations.
4. To provide by means of our national publication, *The Interne*, a medium for expression, exchange of ideas, and opinions for the American interne.
5. To secure adequate compensation for injury, disability, or death incurred in the line of duty.
6. To inaugurate malpractice insurance for all internes.
7. To foster the spirit of organized and concerted effort in attacking local or national problems confronting internes.
8. To cooperate with the organized medical profession in the attainment of common ideals.

A great deal of emphasis has been given to the subject of salaries for interns. Instead of a question of stipends to cover incidental expenditures to relieve them of the necessity of borrowing money from their families, an entirely new issue has been raised—that of making them salaried employees of the hospital instead of advanced students. There seems to be real danger that the essential purpose of the internship has been lost sight of in this instance, and the intern's birthright offered in exchange for "a mess of pottage."

UNIFORMS AND LAUNDRY

While food, lodging, and laundry have become a tradi-

* *Journal of the Association of Medical Students*, vol. 2, page 17, October 1937.

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tional charge on hospital budgets, uniforms have not always been included. City hospitals all issue intern uniforms free of charge. Each has an attractive monogram, including a caduceus and the initials of the institution, embroidered on the left sleeve. Except for difficulties of fit in non-tailored garments and delays in supply, the clothing of the municipal "men in white" has been satisfactorily provided. This was true also in all but seven of the private hospitals.

While laundering of uniforms and personal clothing has been a hospital responsibility in all cases, difficulties and complaints have been frequent. Delay in return of clean clothing or too limited a number of uniforms has made it necessary for men to wear soiled uniforms on duty. Wear and tear on articles of clothing which the intern must purchase out of his own pocket is at times excessive. A real service which all hospitals should render would be to see that loosened or detached buttons are sewn back into place. This inconsequential matter in a bachelor's existence may easily become a major source of unrest and upset the equanimity of an otherwise well balanced individual.

CHAPTER SIX. Hospital Libraries and Their Use

THE intellectual ideals of a hospital are clearly reflected by the reading interests of the entire house staff. If an intellectual curiosity and an investigative spirit are in evidence, the interns and residents are profoundly influenced.

Situations observed in two well known hospitals in New York City illustrate this point. Both had excellent reference libraries well stocked with up-to-date texts, systems of medicine, and many current journals. Efficient librarians were in charge, and books and periodicals were readily accessible. In both hospitals the interns were on a rotating basis.

Curiously, in one hospital the interns made scant use of the reference material. They were seldom seen in the library and the fine selection of over thirty journals was for the most part untouched. When questioned as to the reason for this lack of interest, the group seemed at a loss for an explanation. It was not for lack of time and opportunity. One man ventured the explanation, "We don't know what to read!"

Apparently in their rotation from service to service the men had not sufficient time to become oriented in the fundamentals of any field. They were so busy "learning the ropes" in the shifting scenes of their internship that they had not the time to develop a reading interest. The contact between the attending staff and their interns had not been close enough to result in a contagion of interests. The library remained an unworked quarry in which the intern found no crevice for an entering wedge of intellectual curiosity.

The contrast in the other hospital was startling. At every free moment during the day the interns were to be found in the library adjacent to the record rooms, poring over the cur-

rent journals. Evenings found the quarters crowded, even with interns who were off duty. Some also used the record room to study groups of cases of similar type. In short, there was almost complete correlative use of all reference material in the hospital's possession.

When asked for an explanation, an intern replied, "We are ashamed not to keep up with the current literature at least. We hear recent articles discussed constantly in connection with case findings while on rounds with our attending staff. Cases are considered in the light of other findings in this hospital, and reports from other hospitals, recorded in the literature. If we do not keep up in our reading we are sure to face embarrassment."

This might be called informal guidance of the highest quality. Genuine interest resulted in close contact with the literature, and contagion was inevitable. Possibly another favorable influence in this hospital was the plan of the internship, which gave a prolonged period of houseship on one service during the senior year. The house men had an opportunity for better orientation in one field and through it into the entire field of medicine. After all, an intern's tastes and inclinations cannot be completely catholic. He must start with one aspect which fires his enthusiasm, and thence he is inspired to explore related fields in order properly to round out his education.

Another motivating force in the second hospital might be mentioned. At the regular departmental conferences the interns were expected to take part in the presentation of case reports. Demonstration of their findings before a critical staff audience was a great spur to painstaking work and carefully considered conclusions. They were frequently asked questions as to the findings in similar cases studied by the hospital,

or the opinions of authorities on the subject. As a consequence, the interns were influenced to widen their reading interests and broaden their knowledge of medicine.

This same influence is to be found at the meetings of specialists. These men must keep abreast of the literature in their field, or face embarrassment. If interns can spend a sufficient length of time on a service, a similar sense of pride can be inculcated.

On one of the pediatric services, the house staff displayed a commendable knowledge of the pediatric literature when presenting cases at the regular conferences. An intern explained one of the reasons for this interest and *esprit de corps*. She said, "The director smiles in appreciation when we show we have kept up with our reading."

HOSPITAL LIBRARIES

Unless library facilities are provided within the hospital, the house staff spends little time in the reading of medical literature. It was found that interns in hospitals located near the fine libraries at the New York Academy of Medicine, the Kings County Medical Society, and the medical schools seldom used these resources. Trips to libraries outside the hospital meant a change from uniform to street clothes, as well as the time required to travel back and forth. In order to satisfy the needs of the interns and residents, the books and journals needed must be close at hand and available at odd moments. Accessibility to the library during evening hours has been a prime requisite.

The library resources of every one of the seventy-seven hospitals were personally studied and a record taken of the number of books, percentage of modern editions, number of current journal subscriptions and sets of bound journals.

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Eight hospitals had no libraries at all, and ten others with less than one hundred volumes were considered to have seriously inadequate material for reference reading.

In fact, only a little over 70 per cent of the hospitals in the city had really acceptable libraries. In some of those with several hundred volumes, it was reported that as low as 10 per cent were modern editions. The situation as to number of books is shown in Table 31.

TABLE 31. DISTRIBUTION OF HOSPITALS BY SIZE OF LIBRARY

NUMBER OF VOLUMES	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
Under 100	—	3	7	10
100 to 199	1	1	13	15
200 to 299	2	2	6	10
300 to 399	—	—	4	4
400 to 499	—	1	2	3
500 to 999	2	2	4	8
1,000 to 1,999	2	4	2	8
2,000 to 9,999	2	5	—	7
10,000 and over	3	—	—	3
No library	—	3	5	8
Not reported	—	—	1	1
<i>Total</i>	<i>12</i>	<i>21</i>	<i>44</i>	<i>77</i>

Of the sixty hospitals with libraries that reported on this point, three had no modern books at all, fourteen reported that less than 25 per cent of their books were modern, fourteen reported 25 to 49 per cent, twelve reported 50 to 74 per cent, ten reported 75 to 99 per cent, and seven reported that all their books could be so classified.

It might be assumed that approved hospitals would subscribe to at least a few journals. It was discovered that six had

none and twenty-eight took ten or less. The remaining forty-three hospitals maintained regular subscriptions to periodicals all the way from eleven up to eight hundred, giving a slightly better record for the hospitals as to journals than they were able to make as to books.

TABLE 32. DISTRIBUTION OF HOSPITALS BY PERCENTAGE OF BOOKS IN THEIR LIBRARIES THAT ARE MODERN

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	—	2	1	3
1 to 24 per cent	1	5	8	14
25 to 49 per cent	2	4	8	14
50 to 74 per cent	3	2	7	12
75 to 99 per cent	4	2	4	10
100 per cent	—	2	5	7
No library	—	3	5	8
Not reported	2	1	6	9
<i>Total</i>	<i>12</i>	<i>21</i>	<i>44</i>	<i>77</i>

USE OF LIBRARIES

Estimates were obtained from each hospital as to the frequency of use of the hospital library and of other libraries such as those at the Academy of Medicine, the medical colleges, and the county medical societies. It was found that in forty-three of the sixty-nine hospitals with libraries, considerable use was made of them; in the other twenty-six there was very little. Use of outside libraries was frequent in twenty-three hospitals and rare in fifty-four.

In a few instances, use of the county society library was encouraged through the payment of dues by the hospital for intern memberships with the granting of additional privi-

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leges. It can be seen, however, that such reading played but a small part in their education.

BY INTERNS

It was of interest to learn from the interns their estimate of the average amount of time spent daily in the library. The replies are given in Table 33.

TABLE 33. AVERAGE NUMBER OF HOURS PER DAY REPORTED
SPENT IN LIBRARY BY 219 INTERNS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	6	—	1	7
One-half hour	5	11	23	39
One hour	17	28	45	90
One and one-half hours	3	7	19	29
Two hours	3	11	23	37
Two and one-half hours	—	2	4	6
Three hours	—	2	4	6
Four hours	—	3	1	4
Five hours	—	1	—	1
<i>Total interns reporting</i>	34	65	120	219

These estimates are of course only approximate since the same number of hours was not given each day. However, we may safely conclude that sufficient time was available for the majority of the interns, since 79 per cent reported spending one hour or more daily in the library.

The value of stimulation from the attending staff has already been mentioned. The interns were asked to record whether or not the impulse to read came from this source; of the entire group, 64 per cent considered that it did. Cur-

ously, the teaching institutions made a poorer showing than did the other two types of hospitals.

At first glance, such a finding may seem inexplicable. However, it must be remembered that the teaching time of the attending staff is limited at best. In a nonteaching hospital or service, the intern is the recipient of all the instruction given, but in the teaching hospital it must be shared with the student sections and they receive first consideration. Furthermore, the attending staff must further subdivide their time in order to engage in research studies.

TABLE 34. GUIDANCE IN READING BY THE ATTENDING STAFF, AS REPORTED BY INTERNS INTERVIEWED

	TEACHING HOSPITALS		AFFILIATED HOSPITALS		NONTTEACHING HOSPITALS		ALL HOSPITALS	
	Num-ber	Per-cent.	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Yes	23	42	53	76	88	66	164	64
No	31	58	17	24	45	34	93	36
<i>Total interns reporting</i>	54	100	70	100	133	100	257	100

As pointed out in the first chapter, the teaching of medical students on all services does not ensure adequate instruction of the interns. Their curriculum and the consequent stimulation of their reading must be separately planned as a distinct enterprise.

It was illuminating to learn how many journals were systematically covered to the extent of reading the titles of articles, the summaries, and sections of individual interest. It was at once evident that the total number of journals followed in this manner was limited, for the interest of 71 per

TABLE 35. NUMBER OF MEDICAL JOURNALS REPORTED SYSTEMATICALLY FOLLOWED BY 258 INTERNS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	13	6	28	47
One	12	27	32	71
Two	16	13	40	69
Three	10	14	18	42
Four	3	5	9	17
Five	3	1	3	7
Six	—	2	1	3
Seven	—	—	2	2
<i>Total interns reporting</i>	57	68	133	258

cent of the men was satisfied by one to three journals. Perhaps of greatest moment was the finding that 18 per cent did no systematic reading of the literature.

In order to learn what journals the interns read, a record was made of them by name. Five periodicals received the major share of attention, namely, *Journal of the American Medical Association*; *Surgery, Gynecology and Obstetrics*; *American Journal of the Medical Sciences*; *Archives of Internal Medicine*; and *Annals of Surgery*. A complete list is given in Appendix 1, Table 3.

Only 29 per cent of the interns reported interest in a particular subject. Perhaps this may be considered as the measure of the intellectual curiosity of the average intern.

BY RESIDENTS

A distinct difference between the reading habits of the interns and those of the residents might be anticipated. The residents' interests are more specialized and they should have a more mature point of view. In contrast to the interns, over

half the residents reported a special reading interest. As might be expected, this situation was more evident in hospitals having a medical school contact.

TABLE 36. READING INTEREST, AS REPORTED BY RESIDENTS INTERVIEWED

	TEACHING HOSPITALS		AFFILIATED HOSPITALS		NONTEACHING HOSPITALS		ALL HOSPITALS	
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Yes	58	53	34	56	21	45	113	52
No	52	47	27	44	25	55	104	48
Total	110	100	61	100	46	100	217	100

Of 226 residents interviewed, 204 considered the time available for reading to be ample. Seventeen did not have any leisure for this purpose, and five found the time too limited. The actual duration of time spent was tabulated for 181 men (Table 37). The majority reported an average reading period of one to two hours a day.

The number of journals followed regularly by the residents differed somewhat from that reported by the interns. Ten per cent did no systematic reading, and 23 per cent of the residents as compared to 11 per cent of the interns read four or more journals (Table 38).

While the reading pursuits of the residents ranged farther afield than those of the interns, they too favored the *Journal of the American Medical Association and Surgery, Gynecology and Obstetrics*. Other journals receiving extra attention were: *American Journal of Diseases of Children, American Journal of the Medical Sciences, Archives of Pathology, American Journal of Obstetrics and Gynecology, Annals of Surgery, American Journal of Surgery, Archives of Internal*

TABLE 37. AVERAGE NUMBER OF HOURS PER DAY REPORTED SPENT IN READING BY 181 RESIDENTS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
Less than one-half hour	2	1	—	3
One-half to three-quarters hour	12	6	4	22
Three-quarters to one hour	8	4	6	18
One to one and one-half hours	28	16	14	58
One and one-half to two hours	14	16	7	37
Two to two and one-half hours	10	11	6	27
Two and one-half to three hours	3	1	—	4
Three to four hours	2	2	3	7
Four hours or more	2	1	2	5
<i>Total residents reporting</i>	81	58	42	181

Medicine, Archives of Surgery, and Archives of Pediatrics. A complete list is given in Appendix 1, Table 4.

Perhaps the most surprising discovery was the almost complete absence of reading of the literature in foreign languages. Six such journals were listed but all were read by a single individual who had been educated abroad.

LIBRARIANS

Forty-one of the seventy-seven hospitals offering house staff training listed members of their staffs as responsible for the libraries. These included eighteen full-time librarians, six record librarians, one hospital superintendent, eleven secretaries, three pathologists, and two anesthetists. In addition

TABLE 38. NUMBER OF MEDICAL JOURNALS REPORTED SYSTEMATICALLY FOLLOWED BY 203 RESIDENTS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	10	8	3	21
One	13	4	11	28
Two	29	17	9	55
Three	28	14	10	52
Four	14	9	5	28
Five	3	1	2	6
Six	2	2	2	6
Seven	—	2	2	4
Eight	—	1	—	1
Eleven	—	—	2	2
<i>Total residents reporting</i>	99	58	46	203

there were five medical school libraries supervised by highly trained librarians who have made these resources available to interns and residents in the adjacent teaching hospitals.

Obviously, a full-time qualified medical librarian for all hospitals would be ideal but this has not been always feasible. In the smaller hospitals compromise arrangements have been necessary, as indicated above. Record librarians have done excellent work when reference texts and journals have been brought within their jurisdiction. In hospitals where the record room and the library are in adjacent quarters and form a connecting suite the librarian can control the situation. To have both the hospital records and the reference work in juxtaposition for joint use by the staff makes this type of librarian a very useful person to staff members engaged in clinical research.

Where the superintendent or the pathologist has functioned as librarian, the stacks have been located in a room

permitting close supervision. Somewhat similar arrangements have been worked out where a superintendent's or director's secretary has been given responsibility for the library. In some instances this has worked out very well because of special interest, even though there has been no training in library methods. After all, a small hospital library is not a complex problem and the prime essential for its efficient management is a daily check of all items to prevent loss of books and periodicals.

In two hospitals a full-time physician anesthetist acted as librarian and rendered very efficient service. In all successful plans there was one common factor: the delegation of responsibility to a salaried member of the hospital staff. Rarely if ever has a librarian on a voluntary basis been satisfactory.

A great deal remains to be done in raising the efficiency of hospital libraries, in better provisions for librarian service, and in creating greater interest by the superintendent and the staff in the librarian's needs and problems. Too often the librarian has been left without sufficient attention and encouragement and loses heart.

A great deal might be written of methods employed by librarians on their own initiative to stimulate reading interest and to make texts and journals readily accessible. Of course of basic importance is an efficient and orderly arrangement of the material to prevent loss of time in the finding of references.

A knotty problem has been the arrangement of the library hours to suit the time when members of the house staff have the most leisure to read. It has been discouraging for the interns to find the library locked during their evenings off duty. The privilege of taking books out for use in their own quarters has not been a complete solution. In some hospitals it has been possible for the librarian to rearrange the schedule,

starting his or her working day at noon and staying on through the evening. In others an assistant has taken on this extra duty.

In conclusion it must be emphasized that no library can continue a useful existence without the supervision of an interested and responsible librarian.

JOURNAL CLUBS

This form of organized review of the literature may be mentioned because of its team-work feature. In isolated instances clubs have been organized and have taken on a number of forms. Not infrequently they have been the result of intern initiative but have needed the steadying influence of an attending staff adviser to achieve permanence.

One of the best journal clubs in the city was conducted in the following fashion: The entire house staff, including the residents and fellows, met with the director of the service once a week at four o'clock. At one meeting six men were assigned to report on articles they had read. Then followed a general discussion of the viewpoint and conclusions expressed by the author. At the next meeting two members of the house staff were asked to prepare papers covering the literature bearing on a single subject. The thorough discussion of these papers proved to be a generally stimulating influence. The process was repeated alternately. Each intern was required to prepare a formal paper only once in a semester.

In another hospital the interns were conducting an informal journal club at the time of the survey. Subsequently all entered practice in the city and have continued their club without interruption. Without a doubt, the reading habits formed during internship may be continued subsequent to graduation from the house staff.

CHAPTER SEVEN. Preparation and Training of the Intern

EDUCATION of the physician during his period of hospital residence is necessarily related to his preliminary preparation in medical school. The excellence of the training offered an intern is a measure of hospital quality; but how far the intern is able to benefit from his hospital training will depend upon the quality of the undergraduate medical curriculum.

In New York City there appears to be general agreement among educators that a minimum of two years' internship is essential to the qualification of a practicing physician. It follows, therefore, that the formal medical course must be considered as actually six or more years instead of four. The rising standards and the increasing diversification of modern practice have rendered the conventional undergraduate medical course an inadequate preparation for an independent career. While the medical colleges and hospitals have been fully aware of the situation, there has been little or no formal planning for cooperative use of their resources, except possibly on certain university services. The educational process, instead of being one of steady progression over the minimum six-year period, has been broken into unrelated units.

UNDERGRADUATE MEDICAL TRAINING

Under present conditions the medical colleges are forced to conduct their courses according to a plan which is now out of date. They are required by law to plan their curriculum as though their graduates expected to enter practice immediately after the granting of the doctor's degree. Such compulsion is especially apparent in the third and fourth years, during

which the students are rotated through all the general and special clinical branches. None of these branches may be safely omitted, for the faculty have no assurance of what the internship experience will consist. An example is the requirement that all students must have participated in a minimum number of obstetric deliveries. If this stipulation is based on the assumption that the graduate with this training alone may become a reliable obstetrician, the reasoning is fallacious. During the survey it was discovered that junior interns require a great deal of additional teaching before they can be entrusted with the delivery of even uncomplicated cases.

The courses given in medical school in the medical and surgical specialties have not been followed by sufficient opportunity during the internship to apply the information obtained. The young physician takes up private practice without a clear idea of how to deal with these conditions among his patients.

The fourth year in medical school has become in reality a rotating externship with the difficulties inherent in the rotating internship. In the *Final Report* of the Commission on Medical Education* it was suggested that it might be possible to telescope to some extent the fourth year of the medical course and the period of hospital training, at least in some phases, and thus develop a coordinated clinical clerkship and internship scheme. If the colleges knew exactly of what the hospital experience was going to consist, it would be possible to make better use of the limited time allotted to the undergraduate curriculum. Certain clinical assignments in medical school might be omitted entirely as they could be better handled during the internship. Selective emphasis could be given where necessary and conscious effort could be made to

* Commission on Medical Education, *Final Report*, New York, Office of the Director of the Study, 1932, page 146.

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prepare the student for actual conditions which he will face as an intern.

The fourth-year clinical clerkship as it is related to the internship is best understood from the viewpoint of its historical development. When it was first introduced at Johns Hopkins, it was a continuation of the then generally accepted three-year medical course. Other schools followed this precedent, and the added year seemed to round out both the theoretical and the practical components of a medical education. Since at that time internship opportunities were lacking for many medical college graduates, the newly added year became in reality a substitute for this experience.

As recently as 1904, less than half of the medical students were able to obtain internships. Those who were successful were considered to receive a valuable but not essential additional period of training. At that time it was not possible to correlate completely undergraduate and intern education because of inadequate hospital resources. This quantitative deficiency has been corrected with the years, but the complete break in educational continuity between medical school and house staff experience has not yet been successfully bridged. In football parlance, the student is pointed toward the goal of the final examinations required for the degree and state board licensure. Termination of his undergraduate days, instead of being a transition, becomes a climax. Theoretically he is graduated a finished product, although actually he is far from qualified to be entrusted with full responsibility for the care of patients.

In reality, therefore, the function of the medical course is no longer to prepare men to enter practice directly, but first to become successful interns. Such a preparation is composed of a variety of elements. The ability to think in anatomic, physiologic, physiochemical, pathologic, and bacteriologic

terms in dealing with clinical conditions is, of course, a generally accepted groundwork. The new intern is expected to know how to complete a comprehensive history, record a routine physical examination, carry out such simple laboratory tests as blood count and urinalysis, and arrive at a logical preliminary diagnosis. Competence in ordinary minor surgical technics is assumed, for the average intern is assigned to the emergency ward or ambulance duty without much preliminary instruction. The teaching of asepsis as applied to operating and delivery room and to ward procedures has usually been considered a function of the medical course.

Recognition of the importance of hospital discipline and the progressive assumption of responsibility might be expected requirements of all medical graduates. If the newly arrived intern is to work harmoniously with his associates, he must understand his relationship to allied medical groups, as nursing, social service, and technical staffs. In other words, he needs to comprehend his privileges, his responsibilities, and his position in the hospital cosmos.

Certainly interns might be expected to know the importance of systematic and complete medical records. Since modern medicine requires such extensive record keeping, the young physician needs to be given a vision of its fundamental importance to all medical progress. Lacking such a conception, he regards the long hours given over to such duties as senseless drudgery. Comparison of his case findings with the experience of others should stimulate reading of the literature and ensure a well worn path to the library.

Perhaps most important of all is the question of psychological preparation. In the change from collegiate halls to the strange world of the hospital the intern goes through a period of adjustment. In medical school he has come to regard the teaching of his professors as the final word on the subject.

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In an unfamiliar setting, and with an ill adjusted sense of his new-found dignity as a doctor, there is a temptation to assume the defensive. Instead of remaining teachable, he may easily develop an overaggressive resistance to concepts not previously encountered.

INTERNAL MEDICINE

Members of the teaching and executive staffs of the New York hospitals seem to be in general agreement that the interns' best training in medical school was in internal medicine. Since such preparation is basic to all types of practice, the schools are to be congratulated on this achievement. Not only is the teaching of internal medicine itself improving but objectives for the interns in this field are better defined. As a result the intern easily adapts himself to the requirements of the hospital medical service. The recording of the history and the carrying out of the routine physical examination are familiar procedures. In contrast to surgery there are fewer highly refined technics to be mastered.

Graduates of some colleges have received exceptional preparation in special aspects of medicine. In one instance, the students had remarkably comprehensive training in neurology. In others they excelled in pediatrics, psychiatry, or dermatology. In the majority of instances, however, interns do not make a good showing in their understanding of skin diseases or in the psychologic difficulties of the average patient.

PEDIATRICS

Opinion was about equally divided among the attending staffs as to the effectiveness of pediatric training in college. In many instances, the favorable reactions obtained were

limited to mention of the excellence of preparation furnished by certain schools.

Stress was laid on the improvement of undergraduate teaching in the past few years. The feeling was expressed that only a minority of the students become interested in the problem of the child, and most of them obtain internships in university hospitals.

The adverse sentiments expressed were very critical. Graduates seemed to have acquired a mass of uncorrelated factual information and had to be taught to organize and apply it. Many were conversant with tests but not with patients. They seemed to have had insufficient experience and systematic drill in the handling of the ailing child. Few seemed to realize the importance of tactfully handling the parents. In some intern groups only 10 per cent manifested real interest in childhood medicine. Lacking an understanding of the child's point of view, they failed in the proper approach to his difficulty. Particular emphasis was laid on the lack of student training in the outpatient aspects of pediatrics.

SURGERY

It is generally agreed that the junior intern has been well grounded in the theory of surgical diagnosis. His chief difficulty is in adjusting himself to a strange environment and in retaining to a sufficient degree the technical skill inculcated during his clinical clerkship. Part of the fault may be found with the short periods assigned to such duties during his student days. In any case, the average intern makes a poor showing when first introduced to the operating or delivery room. In the new surroundings, he forgets the careful steps required in preparing aseptically for an operation. Unless a thoughtful superior takes pains to re-orient and re-educate

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him, he is almost sure to make serious breaks in technic. While every surgeon recognizes the need of constant practice to retain technical skill, he is prone to forget that his intern may have been out of touch with a surgical service for many months.

In the accident room or on the ambulance service to which the intern is often assigned early in his hospital residence, he is expected to assume responsibility for a variety of minor surgical emergencies. One of the commonest observations during the survey was the lack of facility with which interns sutured lacerations, incised abscesses, or removed foreign bodies. Either the preparation given in medical school was inadequate or the intern has been unable to adjust to a new situation. It is quite possible that there is an unfounded assumption by the college that such technics will be systematically taught during the internship. There appears to be an equally unfounded assumption on the part of the hospitals that this instruction is a part of the college curriculum.

When major surgical diagnostic problems are encountered, the recent graduate makes a better showing. A great deal of his student experience has been taken up with diagnostic study of surgical patients admitted to the hospital. Furthermore, as an intern his diagnostic studies are subject to check by his attending surgeon.

OBSTETRICS

There was substantial agreement in the hospitals surveyed that the average graduate has been well grounded in the theory of obstetric procedures and the mechanism of labor. Since actual participation in a number of deliveries has been an important part of the college experience, it might be expected that the intern would show definite evidence of such practical training. However, in the majority of interviews

with attending obstetricians in all the New York City hospitals, the impression was gained that few interns show evidence of such experience. In other words, most interns must be treated on first entering the delivery room as though they had never before seen a patient in labor. The obvious conclusion is that the practical experience as a student has been misapplied, or that it is difficult to apply under a new regime.

SPECIALTIES

The most serious difficulties of transition are encountered in the specialties. Requirements of the crowded medical curriculum compress into short periods the instruction in gynecology, urology, otolaryngology, ophthalmology, orthopedics, neurology, psychiatry, contagious diseases, dermatology, and radiology. Given by a specialist faced with the necessity of covering a great deal of ground in a limited time, the instruction is superficial at best. Perhaps the chief value to the student is a fund of information which he can use in passing examinations. By the time he is well launched in the internship much of this unapplied knowledge has been forgotten. Clinical situations in these special aspects of medicine, as they present diagnostic and therapeutic problems, find the intern quite at a loss. He is unable accurately to relate such special factors to medicine as a whole, and the result is overemphasis on the purely technical aspects of each field. Because this experience is so superficial, little knowledge is carried over which will be of value in general practice.

It is perhaps fair to view the fourth year of medical school and the two years of general internship as a series of poorly related rotations composed of arcs of large and small size. With the possible exceptions of internal medicine and surgery, experience in the various subdivisions of medicine under

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the present system must of necessity be limited or fall short of adequacy for a majority of the rotating interns.

SELECTION AND APPOINTMENT OF INTERNS

The selection of interns is a time-worn problem which the medical schools and hospitals have not been entirely able to control. The methods in vogue in New York City leave a great deal to be desired. Frequently the appointments are made too early, and too little consideration is given to the student's achievement, including grades and personality record. The competition among hospitals has set the date of examination ahead for the weaker hospitals and has placed some of the students in a difficult and embarrassing position. A man may be tempted to accept a less desirable internship if it is offered early in the year, rather than risk waiting for the one he really wants. Until the matter of placement is settled, it is exceedingly difficult for the senior student to apply himself to his work.

The candidate's first need, of course, is for accurate and detailed information regarding internship openings. These data have been provided from different sources. Each year the Educational Number of the *Journal of the American Medical Association* lists all the internships and residencies in the United States which are approved by the Council on Medical Education and Hospitals. Certain essential facts as to the hospital and the type and number of appointments are given.

In addition, the deans' offices of the medical colleges have maintained files of information for the convenience of their own graduates. The material has been obtained through direct correspondence with the hospitals and by means of questionnaires sent to graduates at the conclusion of their internship.

The secretary of the Medical Committee of the New York

Academy of Medicine has rendered a valuable service by maintaining an information bureau. His office serves as a clearing house of information for medical students and interns. Recently the secretary of the Association of American Medical Colleges set up an intern placement bureau.

It was found, however, that even these sources did not supply all the information that candidates required, so, as an outgrowth of the present study, a list of all openings in the city approved by the American Medical Association was prepared. This list included, in addition to the information that had appeared on earlier lists, the number of appointments available annually in the particular hospital, the type of examination given, the date of the examination, the latest date applications will be considered, the date when appointments will be announced, the date when services begin, whether married interns are accepted, and whether uniforms are supplied. Mimeographed copies were distributed to the colleges, to national bodies, to hospitals, to intern organizations, and to individual candidates. The value of this list was demonstrated by the great demand for copies.

An outline plan of each internship and residency was also prepared in booklet form and made available for student use in the dean's office of each of the local schools. As a result of this survey, the deans have had, for the first time, a clear picture of the internships and residencies throughout the city, and have been aided in the guidance of their own students.

These measures, while of great benefit, still do not completely solve the difficulty experienced by the prospective interns, the administrative offices, and the hospitals, owing to the multiplicity of applications and the different dates of examination. Various plans have been proposed to meet the situation. In Boston four leading hospitals have used a coordinated plan of intern selection which allows the students to take examinations at any or all the hospitals. Each hospital

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then makes a list of the candidates it has examined in the order of its preference. In the meantime, the students make out a list of their choice of hospitals in the order of preference. On a given day when all the examinations are completed, the students' preferences and the hospitals' preferences are compared, the students' lists receiving first consideration.

In Philadelphia, a similar cooperative plan of intern selection has been in successful operation, but has not included all the hospitals offering internships. In both the Boston and Philadelphia systems the success of the scheme appears to depend upon a close working arrangement between the medical colleges and a limited group of outstanding hospitals.

The Council on Medical Education and Hospitals of the American Medical Association has given serious consideration to the problem, and has published a plan looking toward its solution.* In view of the wide interest in the subject, it deserves quotation in full:

Hospital administrators, intern committees, and deans of medical schools have at various times testified concerning the unsatisfactory methods now employed in making application for, and making appointments to, internships. Under existing circumstances, an enormous amount of energy and correspondence is necessary on the part of all involved—the intern, the hospital, and those who are called on to write character and aptitude references for applicants.

Many of the present difficulties could be minimized if practices already engaged in by deans or faculty intern committees could be enlarged and directed in more effective channels, if uniform application blanks were in use, if (still more important) uniform times of application and appointment were observed and, finally if a central coordinating and placement bureau were established.

The following procedures are offered as suggestions for further discussion and improvement. Since most internships commence July 1,

* *Journal of the American Medical Association*, vol. 104, page 1089, March 30, 1935.

methods are recommended on this basis, but time relationships would be the same for appointment at any period.

1. The first step involves acceptance of a uniform internship application blank by all approved hospitals which will supply intern committees with sufficient data for intelligent selection of interns. These blanks will be handled as follows:

(a) Duplicate blanks will be supplied to each candidate at the medical school. He will submit these blanks properly filled out, together with his photograph, to his dean or faculty intern committee.

(b) The medical school authorities will verify the submitted data and add in space provided the candidate's class standing and their estimate of the student's probable performance as an intern.

(c) The candidate will submit at the same time as he presents his application, and on a separate form, his first, second and third choice of hospital.

(d) On an agreed date, for example, February 1, the original applications are sent by the dean to the first choice hospital. The duplicates are retained in the medical school files to provide against loss or other mishap to the original applications.

2. On receipt of the blanks, the hospital intern committee makes a selection of acceptable applicants—additional data, if necessary are secured, arrangements for personal interviews are made, and any other procedures in keeping with hospital custom are carried out. Contracts are then dispatched to successful candidates and, if satisfactory, signed, witnessed and returned. All applications from unsuccessful candidates are returned to the medical school before March 1.

3. This second step will have been completed by March 1, and the entire procedure, using the same blank, is repeated for the second and third choice hospitals, the months of March and April being used to complete the performance.

4. As soon as a hospital has obtained its complement of interns, the central bureau is notified and suitable means are taken by it to notify the medical schools.

5. The names of all candidates unabsorbed by May 1 would be submitted to the central bureau. Likewise, all approved hospitals would supply the same bureau with the number of unfilled appoint-

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ments. Adequate arrangements for publicity or more direct methods of bringing intern and vacancy together could readily be brought about.

To be completely successful, this plan would operate even in hospitals controlled by or within the sphere of influence of the schools, or where other close relationship exists between medical school and hospital.

The plan seems to preserve to both hospital and intern as much free choice in selection as exists at present, imposes no great added burden to medical school committees, and relieves interns of the anxiety and physical burden of writing dozens of futile applications during the important closing months of their academic careers.

This plan visualizes intern placement on a national scale. For successful operation among New York City hospitals, some such widespread planning would be indicated since only half the successful candidates come from local medical colleges. Such planning would not only assist students coming to New York from other parts of the country but would aid local graduates in securing internships elsewhere.

The New York Committee on the Study of Hospital Internships and Residencies will continue its work as a permanent organization. One of its first tasks will be to keep its information service up-to-date and to work with both the medical colleges and the hospitals on better methods of intern placement. A better understanding and closer cooperation between the colleges and the hospitals is obviously a basic consideration to all plans for placing intern education on a proper footing.

INTRODUCTION OF THE INTERN TO THE HOSPITAL

Granted that the preparation during the four years of medical college is necessarily incomplete, and that the newly appointed intern has much to learn in successfully meeting the needs of his new position, it follows that the hospital

bears a definite responsibility in carrying forward the educational process. In a sense, the intern upon undertaking his hospital duties must study each patient as an equation containing an unknown quantity which must be solved without the aid of experience with problems of similar type. In medical college he has been faced with the difficult task of learning the rudiments of his profession. He has had to master a new scientific vocabulary and make a beginning in the vast fields of basic and applied clinical medicine. He has attained a speaking acquaintance with the diseases he will encounter and he has seen a few examples of each kind. He has achieved a varying degree of skill in the use of the tools of his profession, the recording of the history, the methods of physical examination, and simple laboratory tests. At the university hospital, he has become accustomed to dependence upon refined methods of laboratory diagnosis.

The success of the internship will therefore depend largely upon the ability of the intern to consolidate the knowledge gained and to use it successfully in widening his acquaintance with an increasing number of patient problems. In this task, he will be guided by two disciplinary forces. The first must come from within himself, and will depend on his ability to organize his time and set objectives for himself. The second will be the direction and guidance given him by his older and more experienced superiors on the attending staff.

Unfortunately, the average intern does not have the advantage of contact with patients under conditions which will be faced later in practice. The ambulance experience is at best a poor introduction to the home situation, since an emergency visit does not permit sufficient time to become acquainted with either the patient or his family.

Hence, it has been difficult for the intern to appreciate the importance of long hours spent in the tedious requirements of recording detailed histories, physical examinations, routine

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progress notes, laboratory tests, and other ways of gaining skill and becoming thoroughly conversant with his patient's problems. The senior interns, under the pressure of extra work, have in some instances been forced to seek short cuts in the required minimum of patient care. The resultant carelessness in technic has frequently been passed on to the incoming group of junior interns.

Similar influences have prevented many interns from obtaining a thorough grasp of the details required in the care of medical emergencies such as cardiac decompensation, diabetic coma, pneumonia, or cerebral accident. Lack of appreciation of the importance of pathology has frequently been a bar to its continued study. Few interns, on their own initiative, have regularly attended antepartum, postpartum, gynecologic, pediatric, urologic, and other specialty clinics throughout the duration of their internships.

Nevertheless, evidence is not lacking that there is growing appreciation on the part of the interns of their role in the educational plan. This has been shown by the organization of lecture courses, seminars, and journal clubs on the initiative of house staff groups in several of the hospitals visited. These efforts, however, do not go far enough and need further guidance by the attending staffs in working out a comprehensive educational scheme. There has been a trend among the medical schools to prepare the ground for such planning by better methods of visualizing to the student the situations he must face in private practice. This has been done by introducing the student to patients in their home environment. These efforts will better orient college graduates as they begin their internship training. Objectives of the experience will be better defined.

Improved leadership by hospital administrators and medical boards has been evidenced by the many projects under

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way in the hospitals for improvement of intern education and standards of service. There has been a growing realization that for the best standards of patient care alone it is to the interest of the hospital to make every effort properly to train its house staff.

Such instruction necessarily falls into two types: that given to the new group when it first enters the hospital, and that required at the beginning of each new service. Methods considered acceptable in dealing with patients are more or less defined in all hospitals. The degree to which they are understood and faithfully carried out depends on a variety of factors, but chiefly upon the supervision exercised by a responsible chief of service. While excellent hospitals and services have availed themselves of prepared outlines of procedure, others of equally high grade depend upon unwritten regulations. It follows, therefore, that if the intern is to learn how to sustain the best standards of patient care, someone must take the responsibility for his initiation. Whether or not a manual or intern bible is necessary is a matter of secondary consideration and depends directly upon the amount of time the attending staff and residents have to give to the supervision and instruction of interns.

It was of importance to learn how the interns were taught their duties on beginning service. A study of the seventy-four units in sixty hospitals with internships was made in order to learn to whom this responsibility was delegated.* In forty-nine instances some sort of formal attempt was made to instruct new intern groups, in the remaining twenty-five the instruction was casual. The following tabulation shows the variation in the assignment of responsibility for instructing new interns.

* In some of the larger hospitals the services were divided into separate internships. Hence, in this tabulation seventy-four units in sixty hospitals are considered.

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Formal instruction

Superintendent only	2
Superintendent, attending, and pathologist	1
Superintendent, medical board chairman, social service, and superintendent of nurses	1
Superintendent, dietitian, ophthalmologist, and physical therapist	1
Superintendent, social worker, and physical therapist	1
Superintendent and social worker	1
Superintendent and full-time attending	2
Superintendent, attending, and resident	1
Superintendent and resident	1
Superintendent and senior intern	1
Superintendent and intern committee chairman	10
Intern committee	1
Intern committee chairman	5*
Intern committee chairman and pathologist	1
Intern committee chairman and intern	1
Director of education (salaried) and staff	1
Attending staff	1
Attending staff and residents	6
Attending staff and interns	2
Residents	7
Residents and interns	2
<i>Total</i>	49

Casual instruction

Attending staff	3
Attending staff and senior interns	3
Pathologist and senior interns	1
Residents	3
Residents and senior interns	1
Senior interns	14
<i>Total</i>	25

* One of these was salaried.

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The extent to which the hospital superintendent and the intern committee have taken the initiative in giving formal instruction is both significant and encouraging. It is also noteworthy that in one hospital a salaried director of graduate education, and in another a salaried chairman of the intern committee, have been included in the budget.

With the idea of evaluating the success of such efforts for intern acclimatization, the hospitals were graded as excellent, good, fair, and doubtful. The results are shown in Table 39.

TABLE 39. QUALITY OF TEACHING IN SEVENTY-FOUR UNITS OF SIXTY HOSPITALS WITH INTERNS, BY METHOD OF INTRODUCING NEW INTERNS

	FORMAL INTRODUCTION TO DUTIES	INFORMAL INTRODUCTION TO DUTIES	TOTAL
Excellent	16	—	16
Good	16	—	16
Fair	14	9	23
Doubtful	3	16	19
<i>Total</i>	49	25	74

This appraisal was based on the extent to which new groups were instructed in the following matters: the keeping of medical records, laboratory methods, diagnostic and therapeutic technics, care of emergencies, nursing procedures, social service, rules and regulations of the hospital, and the interns' place in all educational activities of the hospital.

From these estimates it can be seen that in only two-thirds of the institutions where a conscious effort is made, does such instruction reach thoroughly commendable quality. As for

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those making no formal effort, it could hardly be expected that unplanned reception of the new group could be of other than mediocre quality. After a poor start, the interns continue to labor under the handicap of an incomplete grasp of the situation.

If these conclusions may be accepted as valid, all groups concerned in medical education will be interested in working out a better transition from college to the internship in order to ensure a better utilization of educational resources. Unless this is done, the hospital experience may start off as a step downward.

That an interest is already manifest is apparent from recent contributions to the growing literature on the subject. Wilson* in discussing administrative problems gave a graphic description of the occasional intern's difficulty of adjustment to methods differing from those taught in his university hospital.

Giddings and Smith† have given serious attention to a detailed formal plan for introduction of the new intern to the hospital, based on a conception of the superintendent's function as a veritable dean of intern studies. They have introduced a comprehensive scheme for the familiarization of the house staff members with the hospital and staff organization and with the methods of allied nursing and dietary departments.

From observations in several hospitals included in the survey, the impression was gained that widespread efforts at better planning are under way. Perhaps the most important element has been the recognition of the necessity of placing the responsibility for these duties in capable and interested hands.

* Lucius R. Wilson, *Administration Case Histories, Modern Hospital*, vol. 47, pages 45-47, November 1936.

† Emanuel Giddings and Nathan Smith, *Introducing the New Intern to the Hospital, Hospitals*, vol. 11, pages 54-58, January 1937.

EDUCATION DURING THE INTERNSHIP

CARE OF THE PATIENT

The final test of a physician's skill must always be his ability to meet the problems presented by an individual patient. He must be able to elicit the essential information in the background through a comprehensive anamnesis and to verify the presence of abnormalities by means of a searching physical examination. Relevant factors must be correlated in order to arrive at a working hypothesis. Finally, he must be able to apply suitable treatment. Competence can be attained only through experience, with gradually diminishing supervision and increasing responsibility.

The internship is merely one stage in this process. After careful introduction to his duties in the beginning, the intern needs continued supervision and instruction. As a medical apprentice, he shares with the rest of the staff a recognized responsibility for the adequate care of each patient. This involves definition by the attending staff of the minimum essentials required for requisite diagnostic and therapeutic attention. They must supervise the intern in his efforts, prevent him from falling into errors through inexperience, and bolster his self-confidence by confirming his successes.

Each new patient's problem is a practical examination to test the soundness of the intern's education. As a medical student, he has been taught the methods of approach. As an intern, he applies these skills under less rigid supervision. He is expected to cover the essential requirements of each case and to report significant findings to his superior. On a busy service, there is no time for the attending physician to recheck all details, and a great deal of dependence must be placed on the intern's faithfulness in applying what he knows. Nevertheless, the hospital must recognize his limitations and take ap-

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appropriate steps properly to supervise and criticize his work. If supervision is provided by a competent attending staff, the intern's education will be advanced, and the patients will be given good care.

The importance of supervised patient study as a fundamental of all intern teaching has been emphasized by the Council on Medical Education in its *Essentials in a Hospital Approved for Interns*. The following paragraphs are quoted from the section "Work of the Interns."

The interns should personally record a history, a physical examination and their own diagnosis on private and ward patients on their service. The attending physician should in each instance check the intern's work, call attention to errors and supplement the clinical records with any additional findings. The interns in following the progress of the patient should enter progress notes on the chart and the patient's condition on discharge. When a hospital has a shortage of interns a provision should be made whereby the interns on duty may not be burdened by an unreasonable amount of history writing. In such instances it is recommended that a definite number of cases be assigned to the intern and that the other charts be completed by the attending physicians.

It is especially emphasized that surgical charts should be completed promptly and except in emergencies before the patient is taken to the operating room. Unless this is done the educational value of the intern's work is considerably lessened.

It is possible to estimate in various ways the extent to which these essentials of hospital service are carried out. In each of the sixty hospitals offering basic internships, care was taken to observe the interns at work on the wards, to accompany the staff on informal and formal rounds, and to study the case records. The observations made of activities can only be expressions of opinion, but they were frequently supplemented by criticisms made by the attending staffs responsible for the

situation, who often spoke with great frankness and complained of handicaps under which they had to work.

Unquestionably, medical records are the best index of the standing of a service or hospital. The completeness and quality of the medical record keeping are eloquent testimony to the standards of patient care. Even though good work is done by both the interns and their supervisory staff, at least half its value is lost if the findings and opinions are not meticulously placed on record. It is safe to say that a constant high level of medical service is rarely maintained in the absence of good records.

The quality of the diagnostic study of the individual patient by the intern was tested, therefore, from two points of view, and the findings are recorded in the accompanying table.

TABLE 40. THE QUALITY OF DIAGNOSTIC WORK-UP ON PATIENTS AS OBSERVED IN CONFERENCES AND ROUNDS AND AS CHECKED BY RECORDS IN SIXTY HOSPITALS WITH INTERNS

	AS OBSERVED IN CONFERENCES AND ROUNDS	AS CHECKED BY RECORDS
Excellent	9	8
Good	22	20
Fair	15	22
Doubtful	14	10
<i>Total</i>	60	60

Even though the impressions obtained on the wards and in the record rooms were recorded independently, it can be seen that there is a striking parallel in the distribution of the four groups. Only a few of the hospitals have been able to train their interns in patient study at a level of true excellence. In

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nearly half the group the grade of this fundamental instruction is of fair or doubtful quality.

The reason for the less satisfactory showing made by twenty-nine of the hospitals as to standards of work, and by thirty-two as to record keeping, was in practically all instances the same—lack of a systematic plan for conducting the service. In all hospitals there were some attending physicians and surgeons of outstanding ability who were interested in teaching their interns proper procedure, but their efforts were handicapped by their short periods of time on duty and by lack of administrative planning. Unfortunately, in many instances, the attending group in charge of intern supervision at daily rounds did not appear to be of studious habits, and had little of educational value to contribute.

INSTRUCTION OF THE INTERN

The intern's preparation in patient care may be systematically planned or casual. If it is planned, each case is considered according to principles which have received the approval of the entire staff; if not, since there has been no group consideration of the problems with which the hospital has to deal, the individual patient is dealt with impulsively according to the personal ideas of the attending physician who happens to be on the service. While such tactics may sometimes be productive of brilliant results, they are more frequently erratic. Lacking the steadying influence of a guiding purpose, they fall short of what the intern needs to ground him in fundamentals. There is no assurance of adequate coverage of diagnostic and therapeutic possibilities, contributions to medical progress are meager, and as a mode of education it is largely hit or miss.

There is apparent need for all hospitals and services to establish certain minimum standards for patient care. Once

these standards have been established, the groundwork has been laid for satisfactory intern instruction. There is no confusion as to what is meant by good medical attention, and there is a basis for progressive education. Even if the attending staff members rotate on duty there is in reality a curriculum to guide the course of both attending and intern staffs. The teaching responsibilities are specified, and the interns have a clear understanding of their duties.

Manuals and procedure books. Only in university hospitals, with a full-time staff ranging from the director down to a highly trained group of residents, is it possible to maintain such standards without the use of outlines of procedure. Since 92 per cent of our hospitals must depend on the services of a voluntary attending staff, there is obvious need of wider use of these guides. They represent a compilation of the best experience of the hospital. Only by placing these precedents on record in black and white can the entire staff visualize the ideals which guide the hospital in its work.

During the course of the survey, copies of intern manuals were secured from all hospitals using this aid in educating their house staffs. They were to be found on all or part of the services in thirty-two of the seventy-four units in hospitals with interns. One manual had not been revised since 1926, one was so seriously out of date as to be nearly useless, and in eight the outlines were incomplete. Several, however, were of excellent quality and have been in great demand by hospitals in search of ideas for improving their own manuals.

A study of the contents of these books gave a picture of the hospital's success in operation comparable to that obtained from an analysis of case records. Institutions vary so greatly, as to both type of patient and service rendered, that a similar variation was to be expected in their procedure books. Nevertheless, it was possible to discover principles common to all.

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Diagnostic studies of medical, surgical, gynecologic, ophthalmologic, or mental problems, while differing in emphasis, begin with the same general consideration of the patient. In every instance, almost identical steps are necessary in arriving at a diagnosis. The chief difference between services is in the mode of treatment.

A comparison of all manuals collected shows them to deal with most of the following items:

1. Organization of the house staff, with an outline prescribing the duties of each member
2. The relationship of the intern to the hospital administration, attending, nursing, social service, and technical staffs
3. Attitude toward patients
4. Outline for record of the history, physical examination, progress notes, and case summaries
5. Special diagnostic and therapeutic technics
6. The handling of emergencies
7. Laboratory procedures
8. Nursing technics
9. Social service utilization
10. Diets
11. Operating and delivery room methods
12. Methods of securing consent to necropsy

In most cases it has seemed desirable to have a separate booklet of rules and regulations.

The intern needs further training in the elementals of physical diagnosis. Too frequently such instruction is considered to end with the medical course. There is undoubtedly a need for better formulation of the hospital's task in these particulars, preferably by a procedure book. Only in this way can the ground be systematically covered.

Consideration of the nursing methods of the hospitals revealed a peculiar situation. Nursing groups have been most

progressive in providing frequently revised procedure books. Popularly referred to as "black books," copies were almost invariably found on every hospital ward. Their purpose is not only to guide the nurse in carrying out the doctor's orders, but to give the medical staff an idea of what is being done for the patient.

Unfortunately, the average intern has not realized his need to learn the details of the nursing technics described. Instances of ignorance of the simplest methods have frequently been observed. Enemas, counterirritants, irrigations, bed baths, restraints, care of instruments, and surgical preparation of patients have been considered "nurse work" and unworthy of his attention. There has been lack of understanding of the effect of such neglect on his efficiency as an intern and his future career as a practicing physician.

The use of outlines to guide the intern in the care of patients has not been the final solution of the problem at hand, although it has indicated a conscious effort at formulation of acceptable methods. Shortcomings have been due, for the most part, to faulty planning. In preparation of a manual it has been hard to resist the temptation not to produce another textbook of medicine. A voluminous manual has frequently prevented the well meaning intern from mastering its contents. The ideal of a simple, concise handbook, containing merely the hospital's methods in current use, may be lost sight of.

Another desirable objective is to combine inexpensiveness of publication with loose-leaf construction. Mimeographing, or similar methods of reproduction of typed sheets, is usually possible at slight cost. Separate sections can be inserted or removed from a stiff paper cover with facility, rendering it easy to keep the manual up-to-date.

In some hospitals imported manuals have been utilized,

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but experience has shown them to be of doubtful value. As might be expected, no hospital staff of intelligence has agreed completely with methods which they have had no part in formulating. To be successfully applied, the procedures must be those in which the group sincerely believes.

With or without an intern "bible" there has been no satisfactory substitute for painstaking teaching and supervision of each new staff member.

In order to learn the methods used in different hospitals in the teaching of procedures to their interns, an analysis was made of seventy-four units in the sixty hospitals offering internships. The data have been compiled in Table 41.

TABLE 41. METHODS USED IN TEACHING HOSPITAL PROCEDURES TO INTERNS IN SEVENTY-FOUR UNITS OF THE SIXTY HOSPITALS WITH INTERNS

TEACHING PERSONNEL	SYSTEMATIC TEACHING PROGRAM		INFORMAL TEACHING PROGRAM	
	<i>Have outline of procedures</i>	<i>No outline of procedures</i>	<i>Have outline of procedures</i>	<i>No outline of procedures</i>
Assistant superintendent, attending staff, resident	1	1	—	—
Full-time director, attending staff, resident	—	2	—	—
Full-time staff	—	—	2	—
Attending staff	—	—	1	1
Attending staff, paid director of education, senior interns	—	1	—	—
Attending staff, residents	4	1	1	4
Attending staff, residents, senior interns	6	4	1	4
Attending staff, senior interns	6	—	10	24
<i>Total units</i>	<i>17</i>	<i>9</i>	<i>15</i>	<i>33</i>

In the twenty-six hospitals giving systematic teaching of procedures, the majority had evolved printed manuals. The nine hospitals which had no printed manuals did have the advantage of supervision of interns by full-time directors, paid instructors, an assistant superintendent, or the residents.

Where the instruction was merely casual or informal, manuals were in use on less than one-third the services. In all of this group the understanding of hospital procedures on the part of the interns left much to be desired.

The subject is worthy of study by all medical boards interested in the formulation of better methods of hospital service and education. It lies at the heart of all plans for betterment of patient care and intern instruction.

Director of service. The variations encountered in methods of intern instruction indicate the need for better executive direction of each service. The physician in charge may be called the chief attending, the attending in charge, or the director, but his function in each case is the same. If he fulfills his responsibilities, he should be able to foster an efficient plan of organization and an approved manual of procedures. As executive officer of the service, he is expected to enforce these standards and ensure a high level of service. In the sixty hospitals with interns, forty-one had directors assigned to all services.

Unfortunately, these directors do not always live up to the requirements of their position. With a voluntary staff it is not always easy for one member to supervise or discipline the rest. There is an understandable disinclination to assume superiority over his colleagues. As a consequence he may follow the line of least resistance and become a figurehead. His contribution may go little beyond the annual arrangement of the schedule of service for the attending staff, and he becomes merely one of an attending group rotating on duty and carrying a meaningless title.

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The newly awakened interest in education of the intern places the director of service in a much better position. If he is to provide the required instruction, he must stimulate better standards of procedure and require his supporting staff to ensure their maintenance. The enforcement of these standards of patient care is no longer a matter of personal opinion between members of the attending staff, but an educational project in which all have a common interest.

Rotation of attending and house staffs. It is difficult for attending staffs serving on a voluntary basis to give the entire year to continuous duty. They must be allowed some time to devote to their practice and to service in other hospitals. It is desirable, of course, that the duration of service be as long as possible. Dividing the work into periods of two months is manifestly objectionable. No director, however able, could administer an acceptable service with an attending staff rotating at this rapid rate. This is particularly true if the interns are rotating in precisely the same manner. Even the continued presence of a resident can hardly be expected to save the situation.

Little continuity can be attained if the visiting physician is replaced every two or three months. An enterprising and enthusiastic teacher of the interns may be followed by one who lacks either interest in teaching or the requisite ability. Inequality of training on the same service at different periods of the year was one of the most frequent complaints heard from interns in these institutions.

In one hospital it was noted that the interns made two complete rotations through all the services each year. The ingenious explanation for this multiple subdivision of assignment was simple—each intern had to spend only half his allotted time on the weak phases of the services.

The accompanying table shows the rotation of the attending staffs in the sixty hospitals with interns.

TABLE 42. LENGTH OF ASSIGNMENT TO SERVICE OF VISITING STAFF
IN SIXTY HOSPITALS WITH INTERNS

NUMBER OF MONTHS PER YEAR	NUMBER OF HOSPITALS
1 to 9 months	1
2 months	1
2 to 3 months	1
2 to 4 months	1
2 to 5 months	1
2 to 8 months	1
2 to 12 months	2
3 months	4
3 to 4 months	3
3 to 6 months	3
3 to 9 months	2
3 to 12 months	4
4 months	2
4 to 6 months	3
5 to 11 months	1
6 months	5
6 to 10 months	1
6 to 12 months	3
8 to 10 months	1
Continuous duty	20
<i>Total hospitals</i>	<i>60</i>

Standards of teaching. The degree of success in teaching the intern the best standards of patient care may be measured in many ways. Five representative factors have been selected. They are the thoroughness with which the patients are studied, the quality of diagnostic and therapeutic technics, and the quality of the interns' experience in the operating room and the outpatient department. During the course of the survey, great care was taken to study these factors by direct observation in order to learn the extent and value of in-

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tern training. This was made possible by the complete cooperation given by each hospital. A great many hours were spent on the wards and in the operating rooms, laboratories, and dispensaries while the intern was at work. Reports made by the administrative, attending, and house staffs were also scrutinized. An estimate was then recorded while the situation was clearly in mind. The results of these analyses are most clearly illustrated by Table 43.

As might be expected, teaching and affiliated hospitals made the best showing, but it was disconcerting to find several of them in the list of "fair" and "doubtful." For the most part, this finding was attributable to overcrowded city hospital divisions which the medical schools had not been able to organize adequately.

Attention should be called to the doubtful status of patient study in 38 per cent of the nonteaching hospital group.

Considerable improvement is needed in order to better train interns in thorough diagnostic studies. Too often the ordering of a large number of laboratory tests has been considered the primary mode of diagnostic approach. On overworked services the temptation to substitute tests for careful thought has not always been resisted. In one hospital with a weak medical service the interns reported their experience to be "marvelous" because they were allowed to order as many laboratory examinations as they liked!

Under diagnostic technics may be listed the simpler laboratory tests such as blood counts, sedimentation rate, and analysis of urine, spinal fluid, and gastric contents. The intern may be expected to complete these tests on his own patients and estimate their bearing on his working hypothesis. For some curious reason, the importance of refinement of technic in these fields has been poorly appreciated. Perhaps over-familiarity with numerous routine tests has bred undue con-

TABLE 43. THE GRADING OF SIXTY HOSPITALS WITH INTERNS ON FIVE EDUCATIONAL FACTORS

	THOROUGHNESS IN PATIENT STUDY		EXPERIENCE IN DIAGNOSTIC TECHNICS		EXPERIENCE IN THERAPEUTIC TECHNICS		EXPERIENCE IN OPERATING ROOM		EXPERIENCE IN OUTPATIENT DEPARTMENT	
	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent	Num- ber	Per cent
	<i>In teaching hospitals: Total</i>	9	100	9	100	9	100	9	100	9
Excellent	3	34	5	56	4	45	4	45	2	22
Good	3	33	1	11	3	33	3	33	4	45
Fair	3	33	1	11	2	22	2	22	2	22
Doubtful	—	—	2	22	—	—	—	—	—	—
No experience	—	—	—	—	—	—	—	—	1	11
<i>In affiliated hospitals: Total</i>	14	100	14	100	14	100	14	100	14	100
Excellent	3	22	9	64	8	57	8	57	3	22
Good	10	71	4	29	5	36	5	36	2	14
Fair	1	7	1	7	1	7	—	—	2	14
Doubtful	—	—	—	—	—	—	1	7	5	36
No experience	—	—	—	—	—	—	—	—	2	14
<i>In nonteaching hospitals: Total</i>	37	100	37	100	37	100	37	100	37	100
Excellent	3	8	6	16	1	3	5	13	1	3
Good	9	24	12	32	15	40	18	49	7	19
Fair	11	30	16	44	18	49	14	38	12	32
Doubtful	14	38	3	8	3	8	—	—	13	35
No experience	—	—	—	—	—	—	—	—	4	11

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tempt. In a very large number of our hospitals, for example, microscopic examination of blood films and of the formed elements in the urine has become almost a lost art. Other technics considered were ophthalmoscopy, otoscopy, thoracentesis, abdominal paracentesis, catheterization, lumbar puncture, measurement of circulation time, and a variety of other diagnostic methods.

Treatments and therapeutic technics included diets, nursing methods, gastric lavage, duodenal drainage, enemata, irrigations, intramuscular injections, subcutaneous and intravenous clysis, pneumothorax, transfusion, and many other methods of patient care. Lack of skill on the part of the intern was frequently observed. In only thirty-six of the sixty hospitals was the training of the interns in therapeutic technics of commendable grade, and in twenty-four it was of only fair or doubtful quality. If consideration is given to future implications in practice as well as to standards of hospital practice, there is great need for improvement.

If the intern sees cases only during the period of their stay in the hospital as inpatients, his experience may be compared to the study of a single chapter in the middle of a book. He does not have a chance to see with his own eyes the early manifestations of disease or the subsequent developments after the patient is discharged from the hospital. He sees merely one stage of the process—the rest is hearsay.

The duties required of the intern on the ward are of basic importance and must not be neglected. An unparalleled opportunity is presented to study intensively a wide range of clinical material. Nonetheless, by suitable arrangement of the schedule, a modest allowance of time should be provided by which the intern may read the whole narrative of disease as it is encountered in both the outpatient and inpatient departments.

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There is also increasing appreciation of the value of outpatient clinic experience as an essential preparation for the needs of office practice. The average intern in New York City serves a term of two years or more. This is too long a time to be divorced completely from contact with outpatient medicine. Participation by the interns in outpatient service was found to be the most deficient element in their range of experience.

CHAPTER EIGHT. Organization of the Internship Program and Capacity of the Hospital in Relation to Quality of the Internship

ACCORDING to the standards set by the American Medical Association, general hospitals may be approved for intern training

. . . which admit at least 2,000 patients per year and/or have a daily average census of 75 patients, and which provide a variety of medical, surgical, obstetrical and pediatric patients either in the hospital proper or through suitable affiliations with other institutions.*

In addition, there must be an organized hospital staff of high standard, with an attending group graduated from accredited medical schools; also well equipped laboratory, radiology department, and library under competent supervision. Staff conferences at which the work of the hospital is discussed and in which the interns are expected to participate must be held monthly; autopsies must be performed on at least 15 per cent of those dying in the hospital. Complete records must be kept of all cases; these records must be under the charge of a competent clerk and be available for study and reference. The ratio of interns to annual admissions should be approximately one to five hundred.

The internship must be of at least twelve months and must furnish adequate instruction in medical, pediatric, obstetric, surgical, laboratory, and x-ray procedures, as well as experience in the outpatient department. Instruction must be given the interns at daily rounds, and meetings must be held weekly for clinicopathological conferences and x-ray or other special

* *Essentials in a Hospital Approved for Interns*, prepared by the Council on Medical Education and Hospitals of the American Medical Association.

lectures. The interns must be encouraged to read current medical literature.

These specifications of what should constitute the minimum requirements of an internship of educational value visualize a rotating internship of a definite pattern. The objective of this type of service is to ensure a well rounded preparation for practice. Nevertheless the American Medical Association recognizes mixed and straight internships as acceptable types, for they are to be found among the leading hospitals in the country.

During the course of the Committee's survey, care was taken to observe the extent to which hospitals have been able to comply with the regulations of the American Medical Association, and whether the standards prescribed were feasible for uniform application.

Analysis of the material gathered revealed the somewhat astonishing discovery that there is no standard type of internship in New York City, either rotating, mixed, or straight. Actually no two internships were exactly alike, the form of service and the content of each plan being determined by the local situation.

It was found that internships may be modified in form and content by a number of factors, with an inevitable variation in the extent and value of the training given. Perhaps the most important of these factors is the length of time the intern spends on a particular service. Another is the set-up of the hospital itself: the number of services it has and the combinations of these services; the number of beds and the case load, especially in relation to the number of its house staff; the hospital duties the intern is expected to perform that interrupt his routine duties on the wards and in the laboratory, and consequently his education; and the adequacy and completeness of the record system.

Internship Program

HOSPITAL SERVICES

One of the most obvious requirements of good hospital management is the grouping of patients of similar type into separate services. Such grouping permits of better utilization of resources and the more efficient training of personnel. Adequate treatment of the individual patient is, of course, the primary concern of the hospital, and this can best be achieved by an organized service. The rapid advances in all fields of medicine have resulted in progressive subdivision of the work into special medical and surgical units, with increasing partition of the intern's time. It is impossible, therefore, to analyze the educational value of the internship without due consideration of all services to which the intern may be assigned.

NUMBER OF SERVICES

The schedule of an internship is no longer concerned merely with two or three services. The complexities of the modern hospital have greatly increased the possible scope of intern assignment. Time may be apportioned to one or more of the following fields:

Internal medicine	Gynecology
Surgery	Thoracic surgery
Obstetrics or obstetrics and gynecology	Neurosurgery
Pediatrics	Traumatic surgery
Neurology	Anesthesia
Dermatology and syphilology	Pathology
Chest diseases	Clinical laboratory
Communicable diseases	Emergency service
Ophthalmology	Ambulance
Otolaryngology	Private pavilion
Urology	Admitting ward
Orthopedics	Outpatient department
	Roentgenology

Even during an internship of two or more years, it is of course not possible for an individual to obtain an adequate experience in all these branches of the medical tree. If all were available in one hospital, and a complete rotation were given, the interns would have less than one month on each service. It may seem absurd, but as many as seven units of one month each were encountered in one hospital during this survey. The alternative is to limit the field of assignment to give a more reasonable length of time to each portion of the internship. This problem brings to the fore the necessity of deciding what constitutes an acceptable minimum of service in any one field.

The number of separate services to which the intern may be assigned in one hospital inevitably has a modifying effect upon the form, content, and duration of assignment. According to the predominant plan in the sixty hospitals with internships, the number of assignments by services was as follows:

NUMBER OF SERVICES	NUMBER OF HOSPITALS
One	2
Two	1
Three	7
Four	5
Five	12
Six	11
Seven	8
Eight	2
Nine	7
Ten	1
Eleven	1
Thirteen	1
Fourteen	2
<i>Total hospitals</i>	60

Of fifty hospitals with varying types of rotating intern-

ship, only seven confined the service to a one-year rotation. However, in seven others, rotations of both one and two years were employed. Even with forty hospitals offering two or more years of rotation the question of the feasibility of complete rotation through eight or more separate services may be raised. This would give only three months to each service. If the rotation covers only one year, the amount of time available for each period assignment must be cut in half, thereby accentuating the difficulty.

COMBINATIONS OF SERVICES

In order to avoid a large number of short assignments, intern committees have attempted to group services of similar type. The following combinations were found:

Obstetrics, pediatrics, and laboratory
 Laboratory, emergency, and outpatient department
 Medicine and pediatrics
 Medicine, pediatrics, laboratory, outpatient department, x-ray
 Genito-urinary diseases and dermatology
 Specialties and anesthesia
 Surgical pediatrics, otolaryngology, and ambulance
 Medicine, neurology, gastro-enterology, and physical therapy
 Surgery, otolaryngology, gynecology, orthopedics, urology, proctology, and plastic surgery
 Pathology and chronic medicine
 Ambulance, transfusion, x-ray, anesthesia, and pathology
 Orthopedics and ophthalmology
 Private pavilions and neurology

While these combinations have reduced the number of blocks of service, they have not proved to be an ideal solution of the problem. Medicine and pediatrics have been an ill-starred combination in almost every instance. At first glance, the tie-up might seem logical, for both deal with phases of

internal medicine. In practice the needs of one service conflict with those of the other. Usually pediatrics plays the role of the malnourished twin, for the adults considerably outnumber the children. The children's ward receives a minor portion of the intern's time and suffers as a consequence. The weakness of pediatric training on the average rotating service is thus emphasized.

Combinations of medicine and the medical specialties or surgery and its specialties made a better showing unless too much time was required on repeated rounds and in the operating room. The conditions encountered are similar in type, at least, and the combinations have logic behind them.

Unfortunately most of the groupings included dissimilar services. It would seem impossible for an intern to obtain experience of more than the most superficial value during six weeks devoted to laboratory, emergency wards, and outpatient clinics, or to ambulance, transfusions, x-ray, anesthesia, and pathology. The average period of combined service was from one to three months, which allows only a small amount of time for each subject.

Satisfactory use of this method of grouping seemed to be dependent upon planning for the needs of the intern as well as for the needs of the hospital.

DURATION OF INTERN'S ASSIGNMENT

The time spent by an intern in one field has been designated a "block" of service. Most medical educators, concerned equally with high standards of work and the best type of intern training, consider the minimum block to be six months, and preferably a year. This explains the prevalence of straight and mixed internship plans in hospitals of university caliber.* Years of experience have convinced these hospi-

* See Table 1, page 18.

tals that they can maintain requisite standards in no other way.

Nevertheless, straight and mixed internships have not been considered a practicable arrangement by the majority of hospitals. Rotating schemes with shorter allotments have been needed to meet the demands of all services and to satisfy the requirements of an individual desiring to enter general practice. The length of each segment of the rotating internship has depended upon the number of services to be covered and the number of interns on the house staff. Curiously, little or no consideration has been given to the desirable length of each segment of service. This uncritical attitude has resulted in complacent acceptance by hospital administrators of assignments limited to three or four weeks each.

Rotating internships. As already stated, rotating internships are remarkable for their diversity of content.

In order to clarify the situation, the rotating internships in fifty hospitals were studied at first hand. The plan of each was outlined as to duration of its component parts, and the entire group was submitted to analysis. The resultant compilation gave a panoramic view of the possible range of the units of intern experience.

If the duration of assignment to separate services was considered, it was at once apparent that an almost unlimited degree of variation existed. Furthermore, each block of service was usually divided into a junior and senior period to provide progression of responsibility. Frequently these moieties have been separated by several months of work on other services. In the aggregate it was found that the duration of services varied from three weeks to twelve months.

There were internships of twenty-four months or longer in forty of the fifty hospitals, one of them having a thirty-six-month assignment. Seven of these hospitals also had some

one-year rotations in addition to the longer internships, but this was merely an arrangement to supply extra junior interns, particularly for the onerous demands of ambulance duty. This was also true in the case of one hospital that had two one-year rotating interns in addition to those on straight services. Frequently these places have been filled by European graduates or other individuals who are at a disadvantage in securing a more desirable appointment. Of the remaining nine hospitals, six had rotations of one year and three of eighteen months. Only two of these hospitals considered the one-year rotation as a sufficient basis for advanced training. In brief, there appears to be a very extensive sentiment in New York at least that the one-year rotating internship is inadequate.

The following are some examples of rotating internships:

Hospital A

<i>Junior period</i>	<i>12 months</i>
Surgery	2 months
Medicine	2 months
Obstetrics and gynecology	2 months
Urology	1 month
Orthopedics	1 month
Otolaryngology and ophthalmology	1 month
Pediatrics	1 month
Rectal	1 month
Laboratory	1 month
 <i>Senior period</i>	 <i>12 months</i>
Surgery	2 months
Medicine	2 months
Obstetrics and gynecology	2 months
House surgeon	2 months
House physician	2 months
House obstetrician and gynecologist	2 months

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Hospital B

<i>Junior period</i>	<i>12 months</i>
Pediatrics—Second junior	1½ months
Pediatrics—First junior	1½ months
Specialties—Second junior	1½ months
Specialties—First junior	1½ months
Medicine	1½ months
Neurology	1½ months
Surgery	1½ months
Obstetrics and gynecology	1½ months
 <i>Senior period</i>	 <i>12 months</i>
Pathology or emergency ward	3 months
Obstetrics and gynecology	3 months
Medicine	3 months
Surgery	3 months

Hospital C

<i>Junior period</i>	<i>15 months</i>
Ambulance service	5 months
Laboratory and accident ward	2½ months
Junior on obstetrics	2½ months
Junior on medicine	2½ months
Junior on surgery	2½ months
 <i>Senior period</i>	 <i>15 months</i>
House on pediatrics, private medicine, and anesthesia	2½ months
House on otolaryngology and x-ray	2½ months
House on private surgery	2½ months
House on obstetrics	2½ months
House on medicine	2½ months
House on surgery	2½ months

Faced with a problem so complex, the Committee decided to ask the counsel of a special subcommittee. Its membership was drawn from the attending and administrative staffs of twelve New York hospitals. All these men had had many

years of experience with internship schedules, not only of the rotating type but of the mixed and straight types as well. They were asked to review the findings of the survey and to express an opinion as to the minimum duration of assignment an intern might profitably spend on one service.

It was the conviction of the subcommittee that the fundamentals of an internship preparation for general practice should consist of rotation through medicine, surgery, gynecology and obstetrics, and pediatrics. It was felt that during a two-year experience the time allowance for each of these services should not be less than the following:

Medicine	6 months
Surgery	6 months
Gynecology and obstetrics	3 months
Pediatrics	3 months

They visualized another six-month "elective" period to round out the two years. This was to permit assignment to special fields, to the laboratories, to the ambulance, or to houseships in one of the major fields.

It was at once apparent that only one hospital in the city lived up to this ideal. Significantly, this institution has the only three-year rotating internship. The other forty-two hospitals had been obliged to whittle away portions of the major assignments to provide for a multiplicity of other duties.

The elective period of six months, as visualized by the special committee, includes the possibility of additional participation in medicine, surgery, obstetrics, or pediatrics. In the hospitals with completely rotating services, this plan has not been workable. There has been too much encroachment on the two-year, or even the two-and-one-half-year, internship by the "specialties," such as neurology, neurosurgery, dermatology, orthopedics, ophthalmology, otolaryngology, urology,

and assignments to ambulance, emergency ward, clinical laboratory, anesthesia, x-ray, and private pavilion. In the forty-three rotating services under consideration, these special-time allotments have been so diverse in number and duration as to defy analysis. In a series of hospitals examined, the sum total of these items extended over four, five, six, seven and one-half, eight and one-half, and nine months. The average was

TABLE 44. AVERAGE NUMBER OF MONTHS SPENT ON EACH OF THE FOUR MAJOR SERVICES BY ROTATING INTERNS IN FORTY-THREE HOSPITALS WITH INTERNSHIPS OF ONE AND ONE-HALF YEARS OR MORE

<i>Criterion</i>	MEDICINE	SURGERY	OBSTETRICS AND GYNE- COLOGY		PEDIAT- RICS
			6 months	3 months	
In hospitals satisfying criterion for all interns	6	7 $\frac{1}{4}$	3 $\frac{3}{4}$		3
In hospitals satisfying criterion for some interns	8	9	6		4 $\frac{1}{4}$
In hospitals satisfying criterion for no interns	3 $\frac{3}{4}$	3 $\frac{3}{4}$	2		2

approximately six months. In short, the period indicated as elective is taken up in practically all hospitals by a heterogeneous number of required special units incidental to the rotating service. Again we are forced to the conclusion that an adequate complete rotating internship partakes of the nature of a mirage—it may be attractive in prospect but it is impossible of attainment.

There seems to be but one solution to the riddle, and that is intelligent selective grouping of the many possible fields of experience available in the modern hospital. Only in this

manner will it be possible for each intern to have sufficient time on a service to become grounded in its fundamentals and play his part in sustaining its standards.

In the forty-three hospitals with rotating internships of eighteen months or more, the four major services, medicine, surgery, obstetrics and gynecology, and pediatrics, were separately evaluated. Care was taken to determine whether the hospital met at least the minimum assignment for each service as set by the subcommittee. The hospitals were divided into three groups: those which gave all their interns the amount of time indicated as desirable on each service, those which gave it to only part of their interns, and those which gave it to none of them. It might be assumed that if the time allotments fell below the minimum figure, a question as to quality of the hospital in service to patients and in teaching would be raised.

Complete rotations with uniform subdivision of time were easy to compare with the standard, for all the interns either exceeded or fell short of the minimum on any one service. In the other rotations, part of the interns exceeded the figure mentioned for a single service, such as medicine, while the remainder of the interns in this same hospital received less than the minimum. In other words, the interns were allowed to "major" or "minor" on at least one service and, while the rotation was uneven, it was still complete. The arrangement permitted merely the giving of an extra assignment of time to an intern on the service of special interest. There might be more medicine and less surgery, or vice versa. The scheme approximates the plan of the mixed internship.

Certain definite conclusions may be drawn from the analysis, based on objective factors alone. Medicine and surgery are considered of basic importance in all further courses of training, yet only nine hospitals were able to provide six

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months or more of medicine to all their interns, and sixteen were able to give a similar amount of surgery. Even with an allowance of three months for obstetrics, or obstetrics and gynecology combined, only nineteen of the forty-three rotating services were able to furnish this much experience for all their interns. For pediatrics the number was reduced to only four hospitals able to give sufficient training to their entire house staff. Even for part of the interns, only four additional hospitals were able to qualify.*

Such marked discrepancies threw great doubt on the feasibility of installing an evenly balanced plan of rotating internship covering the four major services. This finding was unexpected and may be viewed as one of the most startling disclosures of the survey. It runs counter to a tide running in exactly the opposite direction. In recent years especially, there has been an accelerated drift toward completely rotating internships; this has been due primarily to increasing subdivision of hospital services. Furthermore, the rapid increase in the number of internships has been accompanied by a de-

* For complete figures, see Table 45, page 179. In addition to the combinations of services discussed above, there are various other combinations. It was found that on services including medicine and surgery, all or part of the interns received at least six months in the following number of hospitals:

	<i>All interns</i>	<i>Some interns</i>
Medicine and pediatrics	4	4
Medicine and specialties	1	—
Surgery and specialties	4	—

On services including obstetrics and pediatrics, the following number of hospitals gave at least three months to all or part of their interns:

	<i>All interns</i>	<i>Some interns</i>
Gynecology, obstetrics, and specialties	1	—
Gynecology, obstetrics, and anesthesia	—	1
Obstetrics and pediatrics	1	—
Obstetrics, pediatrics, and laboratory	1	—
Medicine and pediatrics	11	1
Pediatrics, medicine, and x-ray	—	1
Medical and surgical pediatrics	1	2
Pediatrics and laboratory	—	1
Pediatrics and urology	1	—

crease in the number of medical school graduates. As a consequence there has been frank competition among hospitals for desirable interns. Plans offered have been modified to the form most popular with the candidates. This has resulted in undue deference to the judgment of fourth-year medical students as to the most desirable type of internship. Uncertainty as to future opportunities for making a living has led the majority of undergraduates to favor as varied an intern experience as possible. As a consequence, the rotating internship has achieved increasing popularity.

Without question, various types of rotating service will continue to form one group of desirable internships. However, their utilization must depend on factors other than the preferences of medical students. As will be pointed out later in this chapter the form of internship can best be determined by a nice consideration of the hospital's resources as applied to patient care. In hospitals of considerable size and many services, a rotating internship is more difficult to utilize because it is divided into a larger number of short segments, and this is detrimental to good teaching. In a recent publication,* President James Bryant Conant of Harvard University quoted the examiners in the English Civil Service on this point as follows:

Nothing can be further from our wish than to hold out premiums for knowledge of wide surface and small depth. . . . A candidate ought to be allowed no credit at all for taking up a subject in which he is a mere smatterer.

Dr. Conant added,

Even modern educational reformers who might be inclined to regard these views as old-fashioned would probably grant that thor-

* *Report of the Presidents of Harvard University to the Board of Overseers, 1935-1936, page 8.*

oughness should be insisted upon in so far as some one field is concerned—one field in which the student's intellectual power and capacity may be developed and tested. Indeed, our system of concentration, general examinations, and the tutorial system is based on such a concept.

Formerly, most rotating internships utilized the tandem method of bringing new interns on to the service, giving a graded seniority. This method automatically stimulated a spirit of discipline and responsibility between the successive grades of interns. While some of the stronger hospitals have been able to preserve this system, the surveys have demonstrated an extensive change to the "chess board" type. With the difficulty in filling late appointments, interns have been allowed to begin service on July first. In order to cover all services, the men have been shuttled back and forth like chess men without opportunity for progression of responsibility during the year. There has been creation of a junior and senior *group* of interns, with the danger of class consciousness, instead of *individual* responsibility. While satisfactory internships have been operated on this basis, they appear to have been successful in spite of the handicap incurred. In any case, it has not been conducive to the best type of educational discipline.

Competition among hospitals is carried to undesirable lengths by their efforts to secure the highest standing members of graduating classes. The most unfortunate consequence is the attempt on the part of weaker hospitals to obtain material beyond their legitimate expectations. The almost invariable lure is the opportunity to perform a considerable number of major operations. The dramatic appeal of the operating room gives to the uninitiated an exaggerated idea of its importance as a factor in training the physician. The intern, because of this overemphasis on technical sur-

gery, is constantly restive and is competing actively with the attending staff for participation in technics beyond his capacity. Frustration in obtaining as many chances to operate as his predecessor leads the intern to feel cheated. Emphasis on major surgery as the capsheaf of experience has been weakening to the whole concept of a proper internship.

To sum up the situation, the trend toward rotating internships has followed the line of least resistance. There has been a resultant shortening of each phase of intern assignment. If duration of contact with one aspect of medicine means anything, the inescapable conclusion is that the *complete* rotating internship, even of two years' duration, is an investment with steadily diminishing returns.

Mixed internships. If the proposed minimum criteria are applied by separate items to the mixed internships, a marked difference from that encountered among the rotating services is noted. Of course, mixed internships by definition are limited to two or three services, and consequently the periods of assignment are longer. In the eight hospitals of New York City having mixed internships, the following items of service were included: medicine, surgery, obstetrics, pediatrics, pathology, chest diseases, otolaryngology, gynecology, outpatient department, and emergency service. Total length of internships varied from twelve to thirty-six months.

On mixed medical services, the interns spent six to eighteen months in internal medicine alone. On the mixed surgical service, they spent six to thirty months in general surgery.

The eight hospitals under consideration offered nineteen service combinations, either medical or surgical. In an analysis of qualitative factors,* only two fell below good standards, due in each instance to faulty leadership.

Examples of some mixed internships follow.

* The points on which the qualitative analysis was made are listed on page 177.

Internship Program

Hospital D

<i>Mixed medical</i>	<i>24 months</i>
Surgical junior	6 months
Medical junior	6 months
Chest	6 months
House physician	6 months

Hospital E

<i>Mixed surgical</i>	<i>24 months</i>
Pathology	6 months
Medical junior	3 months
Surgical junior	3 months
Surgical senior (house on orthopedics)	6 months
House surgeon	6 months

Hospital F

<i>Mixed surgical</i>	<i>24 months</i>
Junior service (medicine and surgery)	4 months
Emergency service and surgical ward	4 months
Medical service	4 months
Second surgical senior and private pavilion	4 months
First surgical senior	4 months
House surgeon	4 months
<i>Mixed medical</i>	<i>24 months</i>
Medical junior (including pediatrics)	6 months
Surgical service	6 months
Medical senior (including pediatrics)	6 months
House physician	3 months
House pediatrician	3 months

Straight internships. Only seven hospitals, with an aggregate of fourteen services, provided straight services on either medicine or surgery. On twelve of the services the assignment was for twelve months, on the remaining two it was for twenty-four months. While these straight internships occa-

sionally included short excursions into the special aspects of medicine or surgery, the main portion of each intern's time was confined to the general field. There was ample consecutive time to attain thorough grounding in the fundamentals of either medicine or surgery. As might be anticipated, eleven of the fourteen services attained superior quality medical and teaching standards. The three exceptions were due to faulty organization and system.

RELATION BETWEEN QUALITY OF SERVICE AND OF TEACHING AND DURATION OF ASSIGNMENT

Since a complete rotation with units of proper duration has been so difficult of attainment, it occurred to the Committee that an evaluation of each of these service units as to quality and educational standing might throw valuable light upon the perplexing problem. With this in mind, an independent assay was made of each service, based upon the following factors. Information was obtained through personal observation during hospital visits and interviews with members of the staff.

1. The quality of medical work and teaching at the bedside, in the laboratories, operating rooms, delivery rooms, and outpatient department
2. The value of formal rounds, conferences, and follow-up clinics
3. The standard and supervision of medical records
4. The organization of the service and the teaching program
5. The spirit of the staff

In addition, the essentials laid down by the American Medical Association as to acceptable medical, obstetric, and surgical departments were used in evaluation.

Care was taken to record the estimate of standards of service and quality of intern instruction without consideration of duration of assignment, grading the hospitals as good, fair, or

doubtful, as they met the criteria outlined above. The hospitals were then grouped as to whether all, part, or none of their interns were given the number of months which the subcommittee had set as a standard.*

Table 45 shows the relationships between the duration of assignment and the quality of medical and educational standards achieved on each type of service. There are no absolute correlations, but constant variations are noticeable. The most striking point is the superior type of service obtained where only part of the interns received six months or more on medicine or surgery and three months or more on obstetrics or pediatrics.

In these hospitals it had been found that equal apportionment of the interns' time to all services resulted in undesirably short periods of assignment. To correct this difficulty each intern was allowed to major on the service in which he was most interested. For those majoring in medicine or surgery there was an assignment of more than six months in one field or the other. In obstetrics or pediatrics the amount of time allowed exceeded three months in every instance. In order to accomplish this prolongation, the interns had to make a choice between two alternatives, as for example more surgery and less medicine or vice versa.

In the remaining hospitals without provision for selection of major and minor assignments, the interns' time was divided equally between the number of services available. Naturally the number of weeks spent on a single service was inversely proportional to the total number of services provided. On analysis of internship plans in these hospitals it was a matter of some surprise to discover that equal subdivision of time in the interns' schedule resulted in poorer teaching and standards of medical service in the majority of instances.

* See pages 169-171.

TABLE 45. THE QUALITY OF SERVICE AND OF TEACHING IN FORTY-THREE HOSPITALS WITH ROTATING INTERNSHIPS OF ONE AND ONE-HALF YEARS OR MORE

	NUMBER OF HOS- PITALS	PER CENT OF HOSPITALS IN WHICH THE QUALITY OF THE SERVICE IS			PER CENT OF HOSPITALS IN WHICH THE QUALITY OF THE TEACHING IS		
		<i>Good</i>	<i>Fair</i>	<i>Doubtful</i>	<i>Good</i>	<i>Fair</i>	<i>Doubtful</i>
<i>Medicine: Criterion 6 months</i>							
Criterion met for all interns	9	22	67	11	22	22	56
Criterion met for some interns	11	64	36	-	64	9	27
Criterion met for no interns	23	26	65	9	22	17	61
<i>Surgery: Criterion 6 months</i>							
Criterion met for all interns	16	19	69	12	19	37	44
Criterion met for some interns	15	60	40	-	40	20	40
Criterion met for no interns	12	33	67	-	16	42	42
<i>Gynecology and obstetrics: Criterion 3 months*</i>							
Criterion met for all interns	19	58	42	-	36	32	32
Criterion met for some interns	7	100	-	-	100	-	-
Criterion met for no interns	15	47	53	-	27	20	53
<i>Pediatrics: Criterion 3 months</i>							
Criterion met for all interns	4	50	50	-	25	-	75
Criterion met for some interns	4	50	25	25	75	-	25
Criterion met for no interns	35	23	66	11	23	11	66

* No obstetrics in 2 hospitals.

This was true even if the time allotment exceeded the minimum standard visualized by the Committee. One is forced to conclude that more is required than approximation of an arbitrary basic figure. Undoubtedly the factor of emphasis by an intern on a service of major interest makes a vital difference in the quality of his training. Furthermore, among the latter group the number of months spent exceeded the minimum outlined by a considerable margin.

In contrast, where equal subdivision existed, even if the minimum was exceeded it was by a slight amount. In most instances the units were less than six months for medicine and surgery and less than three months for obstetrics and pediatrics. In the attempt to achieve completely balanced rotation, the trend has been toward shorter and shorter assignments of time.

In one hospital which attempted to apply the criteria experimentally, on a completely balanced internship plan it was not found possible to give the desired number of months to either medicine or surgery. The maximum possible for medicine and surgery was four and a half months each.

There appears to be a direct relationship between the amount of time spent on a service by the intern and the quality of medical standards and teaching. While this is not uniformly true, the trend is so definite that there must be some connection. While the leadership and organization of the service is doubtless the most important single factor, it cannot function efficiently if the intern assignment is too brief. There is probably a reverse relationship as well. On services with outstanding leadership and ideals of work, there has been an insistence on prolonged intern participation on the services. In a word, better standards have come first and longer intern assignment as an inevitable consequence.

To sum up, the quality of service, and incidentally the

educational benefit to the intern, are in most instances directly proportional to the time spent on the service. This appears to be true of mixed and straight as well as of rotating internships. While duration of each block of assignment is only one factor in producing a high grade of internship, it is manifestly an essential ingredient in the successful formula. Far-seeing and well informed directors of services have realized the validity of the point and have been instrumental in outlining services of adequate length.

SIZE OF HOSPITAL

As far as medical service and intern education are concerned, the extent of the hospital's task may be measured by the number of beds, the average daily census, and the number of admissions per year. These reveal the amount of work to be done at any one time and the rate of turnover. As might be expected, the sixty hospitals in New York City engaged in training interns differ greatly in the number and character of patients accommodated. In the municipal hospitals the patients are all of general ward status, while in the voluntary hospitals there are ward, semiprivate, and private patients, in varying proportions. Among the hospitals with private patients the system of intern assignment has not been at all uniform. In some hospitals the interns complete the history and physical examination of private patients in much the same way as they do on the general service. In others the interns have no contact with the private pavilions. All these variables must be taken into consideration in estimating the size of the hospital from the point of view of intern experience.

Tables 5 through 16 in the Appendix give for the hospitals studied the number of ward, semiprivate, and private beds, the number of bassinets, admissions to the ward and to semiprivate and private services, the number of newborn, the

average census, the largest and smallest daily census, and the percentage of occupancy.

CAPACITY AND CASE LOAD

A great many startling contrasts are immediately apparent when an analysis is made of the bed capacity of the sixty hospitals with interns. The number of beds varies from the bare minimum specified by the American Medical Association to 3,000. The largest hospitals are municipal in type. Of the thirty-three hospitals having less than 300 beds each, twenty-six are of voluntary status, with large private services. The distribution of the entire sixty is shown in Table 46.

TABLE 46. DISTRIBUTION BY BED CAPACITY OF SIXTY VOLUNTARY, MUNICIPAL, AND GOVERNMENT HOSPITALS WITH INTERNS

NUMBER OF BEDS	VOLUNTARY	UNITED STATES		TOTAL
		MUNICIPAL	GOVERNMENT	
100 to 199	14	—	—	14
200 to 299	12	6	—	18
300 to 399	8	—	1	9
400 to 499	4	2	—	6
500 to 599	3	1	1	5
600 to 999	3	—	—	3
1,000 to 1,999	1	2	—	3
2,000 or more	—	2	—	2
<i>Total hospitals</i>	45	13	2	60

Tables 7 and 8 in Appendix I give the breakdown as to ward and semiprivate and private beds where figures were obtainable. In nine instances the number of ward beds was only 50 per cent or less of the total number, but with one exception the interns were expected to participate in the diagnostic study and treatment of private patients. However, the extra

hours of assistance required of the interns in the operating room and on rounds made it difficult to avoid conflicts in the intern schedule. In one hospital a paid assistant for the private pavilions was employed to counteract this difficulty.

Since hospitals differ in degree of bed occupancy, it is necessary to take this factor into consideration in calculating case load. The average daily census gives, of course, a truer picture of the number of patients cared for but does not show the seasonal variations. The ability of a staff to maintain standards of medical work cannot be finally estimated by means of case load figures calculated against the average daily census. Allowance must be made for seasonal peak loads of work. For example, in one hospital the average daily census was 258, with a ratio of house staff to patients of one to sixteen. However, the largest census of the year was 340, which changed the ratio of house staff to patients to one to twenty-one. The rush season may last over a period of weeks or months, and the overwork of the staff inevitably results either in lowering of standards of work or physical breakdown of the interns.

This factor of fluctuation of the house staff case load has not received sufficient attention. Interns usually begin service during the summer months when the census is at its lowest. They have ample time to complete all the diagnostic and therapeutic procedures required in giving the patient a good quality of medical care. When the rush season begins, however, a point may be reached where the intern has more case records, laboratory tests, and therapeutic procedures than he has time to complete. Short cuts must be found, and these usually take the form of abbreviated histories, incomplete physical examinations, "chamber" differential blood counts, and crude methods of urinalysis. In imitation of factory methods, work may be divided, the junior intern writing the

history and the senior intern making the physical examination.

In short, an increase in case load results in a poorer quality of work. The consequences educationally may be serious. The careful training given in medical school may be permanently impaired by this period of lowered standards during the internship. Even after the census returns to average figures, the tendency is for the character of the work to remain at the lower level. The intern gains the impression that meticulousness of work as carried out in the university hospitals is for the purpose of impressing medical students and is not practical for application in ordinary practice.

Neither the census nor the total number of beds takes into account the distribution of patients by services. They may be divided among surgery, medicine, pediatrics, children's surgery, obstetrics, gynecology, and a varying number of other specialties. Each service must be considered separately in order to ascertain the extent of the intern's contact with different groups of patients. Surgical beds may outnumber medical beds, resulting in a preponderance of surgical experience for the intern. It was found that the pediatric wards usually had a varying number of surgical patients, thereby influencing the amount of experience with medical conditions in childhood. This situation has frequently been overlooked, all beds on the children's ward being regarded as pediatric. Gynecology beds may be included under general surgery or combined with obstetrics. In estimating the extent of intern experience with different groups of patients these factors must be taken into account.

SIZE OF INTERN STAFF

The size of the intern groups in the sixty hospitals varied from two to ninety-six.

The number of interns who must be rotated through the different services is one of the factors which make up the checkerboard of the modern rotating internship. Four interns may conceivably be given assignments of three months each during a year, or six months each during two years. If the number of interns is doubled, the time allotment for each must be cut in half, or to three months if the number of services remains the same. As the intern group increases in size, the time assignment for each must be reduced, the amount being modified by the number of subdivisions of the hospital program, and by the number of interns on a service at one time.

RELATION OF CASE LOAD TO SIZE OF INTERN STAFF

By taking into consideration the number of interns and residents, the number of beds, the average census, the number of admissions per year, and the distribution of the work by services, it is possible to calculate intern case load figures which show quite clearly the number of cases cared for by the interns. The necessary items, where obtainable, were recorded, and a case load table was prepared for each hospital included in the survey.

These tables were returned to the hospital representatives at the time of the follow-up interview for verification of their accuracy. They were found to be of considerable value to hospital administrators in detecting inequalities in the intern schedule. By considering both the census and the number of admissions by services it was possible to learn how many patients an intern cared for at one time and the rate of turnover. This was useful in calculating case loads on acute and chronic services. The total house staff listed for each hospital had to be revised according to the ratio of residents to interns and the number assigned to duties not directly connected with

the care of patients in the pavilions. Interns riding ambulance, working in the pathology laboratory, assigned to x-ray, or occupying similar positions, were necessarily excluded from calculations. Only in this way could figures of value for comparison be obtained.

The Committee had no preconceived ideas as to the desirable number of patients to be cared for by a house staff member, but attempted to compare quality of work and intern education with the house staff case load ratios. Hospitals with the highest standards could then be compared with those of less impressive quality. While no hard-and-fast conclusions could be drawn, there did appear to be direct correlations.

In the general hospitals with services for acute conditions the hospitals showing the best quality of medical attention and intern teaching had census case loads of ten to fifteen patients per house staff member. This does not mean that all hospitals within this range necessarily revealed high standards of work, but it was true for most of them and was within the realm of possibility for all.

It was observed further that ratios above fifteen acute cases per man were prejudicial to quality of medical service and intern instruction. This was especially evident in hospitals where the ratios rose to twenty to thirty patients per intern.

On chronic services the ratios as a rule ran considerably higher, twenty or more patients for each house staff member being compatible with good work. Hospitals with chronic services which had a ratio of fifty to seventy-five patients per house physician were found to have exceeded the possibility of adequate study of patients.

The average number of patients cared for during twelve months by a member of the house staff must be considered in interpretation of case load ratios. On acute services maintaining proper standards, this ratio in New York City hospitals

ranges between two hundred and four hundred patients for each effective house staff member. If the number cared for rises above five hundred, invariably there is a slip in the standard of patient care. This lowering of standards was especially evident in hospitals where the number rose to eight hundred to one thousand patients per member of the intern-resident staff.

On an excellent service devoted to the study of chronic disease, the average census ratio of twenty patients to each member of the house staff was matched by only sixty-two admissions a year.

Since the admission rate is of such importance, it is easy to understand why medical standards tend to deteriorate during a seasonal rush of work. An average census of ten to fifteen patients to a house staff member may rise to twenty or thirty patients, exceeding the limits of efficient patient care. Also, the admission rate, instead of being approximately one patient a day, may be twice that number.

Consideration of a hospital as a whole disregards ratio variations between services. It is not entirely safe to assume that a satisfactory ratio for the entire hospital reflects an equally satisfactory ratio for individual services. It may be too high on one service and too low on another, with a resultant average which seems just right. Attention must also be given to peculiarities of patient groups. Youngsters admitted for tonsillectomy only do not require the detailed history, physical examination, and elaborate laboratory study of difficult medical or surgical problems.

The differences between services as shown by Table 17 in Appendix I illustrate the unevenness of intern assignment. They furnish indications for further study of each service situation and the possible adjustment of intern apportionment.

To illustrate: in one of the larger hospitals the analysis revealed a census ratio of eighty-three neurological patients to one house staff man. Actually, one resident and two interns cared for 250 patients, with an annual admission rate of 3,323 per man. By use of these figures the superintendent was able to obtain an additional resident and two additional interns, thereby doubling the house staff on that service.

Such tables show very clearly the uneven distribution of interns and residents by services. It is recommended that each hospital make such an analysis annually in order to better utilize resources of personnel and to determine the need of staff expansion. If the hospital desires to maintain high standards of work, it must face the fact that this cannot be done if case load figures are excessive.

CONFLICTING FACTORS IN THE INTERN'S SCHEDULE

In addition to difficulties arising from failure to adjust the case load or to arrange wisely the schedule of assignments to services, internships have been afflicted with other ailments which have interfered with a healthy development on the part of the intern. If the intern is constantly interrupted in his diagnostic study of patients, at daily rounds, and at conferences by calls to ride the ambulance, to fill in in the outpatient department, or to respond to some other emergency, his opportunities for a satisfactory and adequate education are seriously impaired.

Conflicts are most apparent in formal educational activities, such as conferences and seminars. At one such conference which was visited all the interns were called out at least once. Few of the calls were real emergencies, most of them being requests by the attending staff for an intern to accompany them on visits to private patients. It was found that these visits were made at irregular hours, without any consideration

for the interns' program. Consequently the interns were unable to plan their work and a good deal of time was wasted in running hither and thither.

At another hospital a seminar specially arranged for the interns began with six interns present, but all were called away before the end of the hour! In this instance, the difficulty was an excessive case load plus a heavy ambulance service.

Another abuse of the interns' time has been the practice of calling them to the outpatient department to substitute for absent clinical assistants. Usually this method of plugging a gap makes no allowance for the regular duties of the intern, being an entirely unplanned extra. Understandably, the assignment is usually resented and is gotten out of the way as expeditiously as possible, with little value either to the intern or to the patients.

Laboratory work is too frequently interrupted when an extra intern is needed. Junior interns especially have been drawn away to give anesthetics, ride the ambulance, take care of emergencies, or substitute on another service. It is not safe to assume that a period set aside for laboratory experience is utilized solely for this purpose.

Junior interns frequently complain that excessive laboratory work and admission of new patients prevent their presence at daily rounds. In this way they lose the opportunity to hear the discussion of cases on which they have carried out diagnostic studies. They miss a valuable portion of their education and are poorly prepared to assume senior responsibilities. While it has been considered essential that junior interns do laboratory tests on patients they have had a chance to study, little attention has been paid to the amount of time required for routine blood counts and urinalyses. These tests are required on all patients on admission and at regularly re-

curing intervals. Unless the burden is eased by assistance from medical students or technicians, the intern may have to complete a dozen or more blood counts and do a large number of urinalyses in addition to his regular work. In certain instances there is enough work of this nature to occupy a technician on a full-time basis.

A considerable number of other laboratory technics are required of interns in addition to the two mentioned, and as hospitals have grown in size and medicine has advanced, the load thrown upon junior interns has increased.

Careful studies are needed in most hospitals to determine the amount of time required for each of the intern's duties. Full-time technicians know how many procedures can be accurately carried out in the course of a day; the amount of time required by an intern to complete a certain number of tests should not be difficult to determine. If his other duties do not allow him sufficient time for his patients, an adjustment of the intern's schedule is indicated.

AMBULANCE SERVICE

A growing cause of conflict in the general internship has been the increasing demands of the ambulance service. In addition to the period of from one to six months devoted to this duty, there are frequently assignments as second or third on call while the intern is on other services.

The ambulance appears to have originated in New York. The first ambulance system in the world was introduced at the Bellevue Hospital in 1869 to transport the needy sick to the hospital, and it has since won a place as an essential function of municipalities the world over. It is of interest that the original inspiration for city ambulances came from the Army of the Potomac. Dr. Dalton, the officer responsible for the evacuation of the wounded in the Battles of the Wilderness, later introduced similar horse-drawn vehicles at Bellevue.

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At first, paid ambulance surgeons were sent out, but shortly they were replaced by interns, who have carried the brunt of this work ever since. For many years the demand from the public for ambulance attention was relatively modest, only 1,401 calls being made in 1870. In the past ten years the rate of increase has been tremendous. This is due partly to economic distress, and partly to the tendency of the public to view the ambulance as a municipal service to which every citizen is entitled, on a par with that rendered by the fire department. Along with this trend there has been a swing to an emphasis very different from the original purpose of the ambulance, namely, requests for medical treatment at home and on the street, but without transfer of the patient to the hospital. In 1935 there were 128 ambulances, distributed as follows:

	ACTIVE	RESERVE	TOTAL
Voluntary hospitals	68	—	68
Municipal hospitals:			
General	47	4	51
Contagious	6	3	9
<i>Total</i>	<i>121</i>	<i>7</i>	<i>128</i>

Six of the ambulances from the contagious disease hospital have a nurse in attendance, so the number of active ambulances with interns is 115. It should be mentioned also that at two hospitals, namely, Coney Island and St. John's in Brooklyn, ambulance "residents" answer most of the first calls.

Since each ambulance requires at least the full time of one intern, it will be seen that more than a hundred house staff members are constantly on duty, taking the time of approximately 10 per cent of the total intern population.

Because ambulance duty takes so much of the intern's time, it is worth while to study its trends and its effect on the internship. Table 47 shows how rapidly the demand for ambu-

TABLE 47. NUMBER AND DISPOSITION OF AMBULANCE CALLS IN PRIVATE AND MUNICIPAL HOSPITALS IN
NEW YORK CITY, 1925-1935

YEAR	DEAD ON ARRIVAL	TREATED AND NOT REMOVED	Own Hospital	REMOVED TO			UNNEC- ESSARY CALLS	TOTAL NUMBER OF CALLS	TRANSFERRED FROM OWN TO OTHER HOSPITAL		TOTAL CALLS AND TRANS- FERS
				Other Public Hospital	Other Private Hospital	Home or Other			Public	Private	
1925: Total	5,363	67,986	46,059	17,021	330	4,416	5,466	146,641	1,846	176	148,663
1930:											
Private	4,036	55,952	21,081	20,492	247	3,123	4,527	109,458	1,171	147	110,776
Municipal	2,839	47,079	26,862	3,581	126	679	2,751	83,916	10,100	219	94,235
Total	6,875	103,031	47,943	24,073	373	3,802	7,278	193,374	11,271	366	205,011
Contagious											6,787
All Calls											211,798
1931:											
Private	4,137	64,973	23,524	23,407	333	3,759	4,739	124,872	1,814	162	126,848
Municipal	3,035	52,665	32,435	3,996	101	627	2,584	95,443	13,033	459	108,935
Total	7,172	117,638	55,959	27,403	434	4,386	7,323	220,315	14,847	621	235,783
Contagious											10,229
All Calls											246,012
1932:											
Private	4,239	80,836	27,731	20,736	306	3,970	5,814	143,632	1,505	126	145,263
Municipal	3,105	65,839	35,724	3,748	142	545	3,437	112,540	13,478	1,226	127,244
Total	7,344	146,675	63,455	24,484	448	4,515	9,251	256,172	14,983	1,352	272,507
Contagious											10,269
All Calls											282,776

lance attention in all its phases has grown. Particularly striking is the *increase* from 1925 to 1935 of 201 per cent in the number of cases treated but not brought to the hospital. At the same time the number of patients hospitalized by way of the ambulance has only doubled. In other words, this provision, originally intended to bring in the acutely ill, has become predominantly a traveling outpatient department and a method of domiciliary care for the indigent sick. With this shift of purpose, the question may seriously be raised as to whether the ambulance is designed to best meet the needs of the situation, for the preparation of the intern for this type of work has been extremely meager, and the patient in any case receives emergency help only.

Tables 18 and 19 in Appendix 1 show, for a municipal hospital and for a voluntary hospital, the number of calls during one month for each type of illness and each type of injury.

Care was taken to learn how much the ambulance work cut into the regular needs of the internship. The degree of conflict in the sixty hospitals with general internships is shown in the accompanying table.

TABLE 48. EFFECT OF AMBULANCE SERVICE ON INTERN TRAINING

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
No ambulance	2	7	13	22
No conflict with regular duties	1	1	—	2
Slight conflict with regu- lar duties	4	2	6	12
Much conflict with regu- lar duties	2	4	18	24
<i>Total hospitals</i>	9	14	37	60

Conflicting Factors in Intern's Schedule 195

Considering the greatly increasing demands on the intern's time for ambulance duty, particularly for cases desiring domiciliary care, and the inadequacies of the service rendered to this type of patient as well as its cost, there is a need for re-consideration of the whole program.

In two hospitals paid "resident" ambulance surgeons have been introduced to take the brunt of the work. This plan, while beneficial to the interns, has not met the real issue, namely, the excessive number of calls for home treatment, many of them of a trivial nature. A recent study indicated that only one-third of the calls for the ambulance are really justified.* A majority were for conditions of an inconsequential or nonemergency nature. There is need for a better method of rendering medical service to the indigent sick in the homes. To place the burden upon interns in training is to interfere with the real purpose of the internship. They cannot render efficient care for ordinary medical problems during an emergency visit. Rarely does an ambulance surgeon see the same patient twice, and no continuity of interest can exist.

The solution of the problem will come through a more adequate provision for domiciliary care such as has been in successful use in Boston, Minneapolis, and Buffalo. In these cities patients are cared for by a home visiting service, which provides medical attention of a superior type at considerably lower cost.† Only in this way can the ambulance be restored to its original function. The new charter provides for a similar visiting service in New York City.

There will remain the question of the desirability of in-

* E. H. L. Corwin, Ambulance Service, Chapter VII in *Report of the Hospital Survey for New York*, vol. II, pages 500-534, New York, United Hospital Fund, 1937.

† Gertrude Sturges, *Organized Medical Care of the Sick in Their Homes*, Chapter XIV, *ibid.*, pages 776-823.

terns acting as diagnosticians and escorts for patients needing transport to the hospital. If they can be carefully trained for this work, a period of from four to six weeks' service might be very valuable. This would furnish opportunity to learn first aid in the care of injuries, particularly fractures, and of other emergencies. The patient could be followed in his hospital course and the preliminary diagnosis confirmed or disproved. Most of the interns agreed that a limited assignment of this nature would be worth while.

MEDICAL RECORDS

In the list of essentials required by the American Medical Association for approval of hospital internships, a prominent place is given to the keeping of medical records. Not only is their content specified, but requirements are laid down for endorsement of the charts, proper filing, and the preparation of monthly reports and annual summaries.

In New York hospitals achieving the highest standards of medical care and educational progress, a great deal of organizing ability has gone into the evolution of clinical record systems. Much more than the content of the records is involved; someone must see that adequate records are kept on all cases and that any deficiencies in this matter are promptly remedied. The record system is in reality a code of hospital laws, and policing is needed to ensure observance of these laws. The machinery set up for this purpose may be outlined as follows:

First, the superintendent of the hospital carries a definite legal responsibility to the board of trustees and to the patients for complete, properly filed, and safely guarded records.

Second, the directors of services, or their delegated representatives, constitute the personnel of the record committee.

This group is held directly responsible for the task of keeping records up to the hospital standard.

Third, each attending and house staff member carries an individual responsibility for completing the reports which record the attention given his patients.

Finally, the record librarian is the essential connecting link in the chain, for to her falls the work of routine check of all data and their maintenance in readily accessible files. Her department has risen from the status of a mere repository for charts to the dignity of a reference library. This attainment indicates a large measure of hospital progress.

The importance of good records as an assurance of the best care of patients and the thoroughness of work has already been sufficiently stressed, but a further word may be said in regard to record keeping as a method of teaching. It was interesting to learn how this was carried out. The necessary instruction and supervision were delegated in varying degrees to record librarians, senior interns, residents, junior attending staff members, directors of services, and assistant superintendents. There was no general agreement as to the plan of supervision.

In some of the larger hospitals the director of the service personally checked each record as to content and accuracy of diagnosis before affixing his signature. In most hospitals, however, this duty was delegated to an associate who represented the service on the record committee, since few directors serving the hospital on a voluntary basis have been able to spare the time required for this routine check-up of records. This final signature is essential, of course, in the placing of responsibility. The work of each intern should be carefully reviewed; in this way each completed record becomes a kind of examination paper. The following tabulation shows how the responsibility for final signature varies:

	NUMBER OF HOSPITALS
Attending or assistant attending physician	40
Attending physician and resident or house physician	4
Attending physician or resident	2
Attending physician and librarian	2
Attending physician and record committee	1
Attending physician or assistant or intern	1
Record committee	1
Librarian	1
Resident or house physician	1
Librarian and resident or record committee	3
No final signature	4
<i>Total</i>	<i>60</i>

Before the chart is ready for filing it should have passed through a series of inspections. In almost all hospitals, however, the responsibility for the completion of the chart was placed on the record librarian.

The rapid improvement in medical bookkeeping has greatly increased the importance of the work of the medical librarian. In addition to having a knowledge of filing, she has had to learn a great deal about the itemized content of acceptable records, and is expected to verify these items in the completed chart. She has to carry almost full responsibility for the reconciliation of the diagnosis with the nomenclature, and frequently is expected to add code numbers as well. When the patient is discharged, his record often appears on the librarian's desk minus the diagnosis and other essential items. It then becomes necessary to entice a reluctant intern into the record room to fill in these gaps. If this disciplinary measure is carried out without the active support of the record committee, the results are likely to be far from satisfactory.

After the record librarian has completed her survey of the

charts, and has persuaded the house staff to finish their task, the material is ready for the scrutiny of the record committee. This committee represents the attending staff and should meet once a month, or oftener, to review defective charts, to deal with negligence on the part of staff members, and to decide on matters of policy. Not infrequently they meet just before the general clinical staff meeting for the selection of cases for presentation.

Of sixty hospitals with internships, it was found that in four there was no record committee, in seventeen it did not function, and in thirty-nine it carried some active responsibility. Since regular checking of the interns' work in this manner is one of the tangible evidences of interest in their instruction, it is apparent that in 35 per cent of the hospitals great improvement is needed.

Directors of services have been the authority back of the record committee; the members of the record committee have acted only as their representatives. If the committee fails to function, the fault lies with the directors and, through them, with the medical board of the hospital. In a great many of the well known hospitals there is great need for a better understanding of this responsibility.

It is the duty of the record committee to formulate a minimum standard for records, to devise a systematic plan for inspection of the charts, and to provide methods for enforcing discipline. Minimum standards for records have included:

1. A modern system of nomenclature
2. An outline guide for orderly inscription of history and physical findings
3. A concise summary of findings
4. A provisional or working diagnosis (or diagnoses)
5. Progress notes by the house and attending staffs

6. A discharge note
7. Accessible and accurate laboratory reports
8. Nursing and social service data

Requirements for inspection and enforcement of standards have been:

1. Routine check of the chart by the record librarian for errors and omissions
2. Frequent regular meetings of the record committee to consider defective charts and negligence on the part of members of the staff
3. Final signature by a responsible attending physician, preferably a member of the record committee

It is at once apparent that the record committee has as important an educational function as any group in the hospital. If this committee performs its duty, it must in truth serve as a faculty of instruction.

Newly arrived interns need to be given a formal course in the use of the book of nomenclature, for in no other way can they fully grasp its contents. In this task the record librarian can furnish valuable assistance. If the intern can master the nomenclature early in his career, he can be assured of having an adequate medical vocabulary, and consequently a better understanding of medicine. Then the required format of history, physical examination, summary, and progress and discharge notes can be introduced and carefully explained. The result is accessible records, and rounds become enjoyable and clinical case studies are made an easy task.

Recent advances in record maintenance have brought about improved systems of nomenclature and of unit filing and numbering, and have encouraged the use of definite outlines in the recording of case studies. Another improvement has been the typing of reports of operations, laboratory data, histories, physical findings, and summaries, instead of having them

written in longhand. The extent to which these systems have been introduced is an indication of the hospital's progress, and incidentally of its educational standing.

UNIT NUMBERING

The unit numbering of records has been found to be of great educational advantage. Under this system, each patient has the same unit number, no matter how many times he has entered the hospital or in what departments, and his records are all filed in one place. With each readmission the interns are able to review all previous records without loss of time or important bits of anamnesis. Without this advantage the old records may be difficult to obtain. Frequently they are stored in a distant basement or attic. Review of case groups has been a time-consuming task, and usually a dusty one.

Unfortunately in only ten of the sixty hospitals have record rooms of sufficient size for unit numbering been provided in the plans. Thirteen others have attained this ideal by rearrangement of space to connect adjacent rooms or floors. The remaining thirty-seven hospitals have had to continue makeshift arrangements, with no immediate prospect of solution of the difficulty. Hospital architects planned file space for current records only, and provided record rooms of small size. Even adequate storage space was sometimes omitted. In a few hospitals a partial solution has been effected by binding all previous records with the chart of the patient's latest admission, but the problem of ready accessibility to the complete record of each patient remains unsolved.

UNIT FILING

While it has been considered important for the intern to observe the entire course of a disease by visits to the outpatient service, the opportunity has been limited at best to cer-

tain selected clinics. There has remained, however, a method of rendering such contacts more comprehensive through filing the inpatient and outpatient records as a unit. In twenty-three of the sixty hospitals such correlation of findings was an accomplished fact. The interns were able to study the entire course of the problem, no matter how many admissions there were or how many outpatient clinics had been visited.

If the patient was seen in the outpatient department, the opportunity to review inpatient findings has been of immense practical and educational value. Follow-up evaluation of diagnosis and treatment has become a routine matter.

There have been serious architectural obstacles in the way of combining hospital and dispensary record rooms. In addition to the hospitals which have unit filing, seventeen have promoted correlation of inpatient and outpatient material by means of admission and discharge notes summarizing the situation to date. In practice, the degree of coordination has fluctuated between wide limits. The quality of the summary has depended upon the conscientiousness of the physician responsible for it, as well as on the legibility of his handwriting. It has not been unusual to delegate the work to a stenographer or clerk, thus placing dependence upon the judgment of a layman. In one of the largest and best known hospitals, these summaries were faithfully typed by the secretary of the service but did not reach the outpatient department. They were kept in a special file in the record room.

The practice of sending inpatient records to the outpatient clinic, or vice versa, on request, seems an inefficient and time-consuming makeshift.

TYPEWRITTEN RECORDS

In only six hospitals were histories, physical findings, and other data typed by a stenographer. In an additional fourteen, parts of the record were typed, particularly the laboratory

findings and description of operations. However, in fifty-four hospitals the greater part of the observations of interns and attending staff were written in longhand. Much of the writing was hurriedly done and was difficult to decipher. Poor handwriting has been one of the main reasons why attending physicians on services have been reluctant to spend time on interns' case notes.

In the six hospitals providing stenographic assistance, considerable time was saved. Also, there was inevitable improvement in the quality of records because of the requirement of a systematic outline for recording all case notes.

NOMENCLATURES

The matter of nomenclature is one of vital importance to the intern, for to him usually falls the task of writing the final discharge note on the patient and then prospecting for a diagnosis that will be acceptable to the record librarian. The importance of this procedure is seldom fully realized. The necessity of riffling through the pages of a complex book of nomenclature is regarded as just another disagreeable job.

To make an accurate diagnosis implies a comprehensive knowledge of the etiology, anatomy, physiology, chemistry, and bacteriology of disease. If the diagnosis is properly entered in the record, it is the summary of findings and is an excellent test of the recorder's knowledge of medicine. It is the only key by which the stores of medical experience can be unlocked.

The ability to condense a voluminous record into a single word or phrase is achieved only through conscientious endeavor. The contents of the nomenclature manual must be digested, its outline clearly visualized, and a thorough grasp of the significance of code numbers obtained. Unfortunately the intern rarely has more than the most informal introduction to this task, and receives little encouragement from the

attending staff. As a consequence, the record librarian has the unpleasant task of calling interns in to correct faulty diagnoses, and this often causes confusion and irritation among the personnel.

There would seem to be no escape from the conclusion that the record committee needs to be educated to the full extent of its responsibility before attempting to initiate the interns. There is need of better agreement as to an acceptable nomenclature. A list of the systems now in use illustrates their diversity and the consequent confusing effect upon medical literature. The number of hospitals with interns reporting the use of each type of nomenclature was:*

Standard Classified	23
Bellevue Hospital	27
Massachusetts General Hospital	5
U. S. Public Health Service	2
American College of Surgeons	1
None	2
<i>Total</i>	<i>60</i>

It was somewhat startling to discover that in two hospitals no system of nomenclature was followed. When the patient was discharged, the intern merely wrote in his personal opinion as to the diagnosis, and the chart was sent to a clerk for verification. In one instance this duty fell to a hospital stenographer who merely noted the presence or absence of a diagnosis, case notes, and laboratory data. If in her judgment the charts were complete, they were accepted, tied in bundles of twenty-five, and stacked in an attic.

This is an extreme example, but indifference to the impli-

* By January 1938 the Standard Classified Nomenclature had been adopted by thirty-four of these sixty hospitals, and the number using the Bellevue Nomenclature had decreased to sixteen.

cations of a well defined nomenclature has been widespread. Success can be obtained only by giving clinical clerks and junior interns a formal course or seminar in the philosophy behind the terminology and the practical problems of a manual of nomenclature. Instruction of this type needs to be included in agenda of introductory teaching exercises for junior interns. In none of the New York hospitals has this so far been done. The problem is one requiring joint consideration of medical schools and hospitals.

A definite advance in the solution of the problem of a unified nomenclature was effected by the publication of the *Standard Classified Nomenclature of Disease*.* For the first time there was agreement among a sufficiently representative group of national organizations to warrant the adoption of a single system.† The plan of classification is at the same time topographical and etiological, and by its completeness the book forms a valuable mode of medical education.

The new *Nomenclature* has now been given a thorough trial and a decision should be reached as to whether it is acceptable for general adoption.

RECORDS OF INTERNS' WORK

One of the essentials for intern training listed by the Council on Medical Education‡ is the keeping of detailed records of the interns' work. This requires a weekly or monthly report with information as to service, number of patients

* New York, The Commonwealth Fund, 1935. Now published by the American Medical Association.

† It has been approved by the American Medical Association, the American College of Surgeons, the American Hospital Association, the American Surgical Association, the Association of American Physicians, the American Society for Clinical Investigation, the American Public Health Association, the American Statistical Association, and nineteen other outstanding national groups.

‡ *Essentials in a Hospital Approved for Interns*, prepared by the Council on Medical Education and Hospitals of the American Medical Association.

admitted on the service, number of histories and physical examinations, number of anesthetics given, number of operations at which interns assisted, number of operations performed by the interns themselves, autopsies attended, hours spent in laboratory, lectures attended, clinics attended, and so forth. It was recommended that the information be supplied by the interns themselves on special forms with spaces for the different items. Such data, if systematically recorded by each hospital, could be used to great advantage by state medical examining boards, medical schools, and other educational agencies. They should be of value to the interns themselves in better visualizing the scope of the internship.

Obviously, files of this nature in the office of the superintendent would furnish readily accessible information of great value in a survey of intern education. If accurately recorded, a quantitative estimate of the extent of the interns' experience would be immediately available. If supplemented by an estimate of the quality of work done, it should not be difficult to visualize clearly each hospital's standing as an educational institution.

Unfortunately, no files of this kind were to be found in the hospitals of New York City. In order to learn the extent of the interns' experience as outlined above, it was necessary during the survey to supply the interns with specially prepared forms to fill out and to check their notations at a personal interview. Of course, the information thus received could not pretend to cover systematically an internship period, for it had to be recorded at the time of the hospital visit. By selecting mostly senior interns, however, a fairly complete picture of their service was obtained. The results of these interviews are given on pages 208-228.

Although records of this type were not required, it was

found that fourteen of the sixty hospitals had attempted a type of intern report card.* Although there was little uniformity of scheme, the plan in each case was much the same, namely, a list of items covering the quality of the intern performance. Opposite each item the attending staff members in charge of the service were expected to place a grade on either a percentage or an A, B, C, D, E basis. In addition, they might add explanatory notes at the bottom of the card. They were supposed to send the reports to the superintendent either once a month or at the termination of an intern's assignment to the service.

While the quality of the reports in the fourteen hospitals could be improved, the attempt did draw the attention of the attending staff to their educational responsibilities. Naturally, more interest was shown by them in the quality of work done by their interns, and the superintendent was able to keep in closer touch with each intern's progress. In one hospital the interns were promoted each six months only on the written recommendation of the attending physician in charge. More frequently the grading appeared to have been hastily done and the information given was almost valueless. The best reports were descriptive paragraphs giving a statement of the interns' work in general terms.

As far as the keeping of records of interns' progress was concerned, the value of files maintained in the superintendent's office proved to be negligible.

On the conjecture that individual attending physicians might be keeping records of their own, it was decided to ask each member of this group at the time of the interview whether or not this was true. Their replies tallied almost exactly with the information obtained from the superintendents.

* See Appendix 4, pages 405-407.

Internship Program

Only 26 per cent were keeping such records. The others said they knew how well their interns were doing but had not seen the importance of placing these impressions on permanent record. A great many objected strenuously to grading the interns on a signed card. They complained that the files were not really confidential, that interns discovered who had given them low marks and found ways of getting revenge even after they had entered practice.

The extent of the grading attempted may be demonstrated by a tabulation:

	SUR- GERY	MEDI- CINE	OTHER SPECIALTIES	TOTAL
Attending physicians who keep report cards	38	35	19	92
Attending physicians who keep no report cards	140	91	32	263
<i>Total</i>	<i>178</i>	<i>126</i>	<i>51</i>	<i>355</i>

In New York City at least, the systematic recording of interns' progress appears to have become almost a dead letter. This is in keeping with the informality of program in the majority of internships.

OPINIONS OF INTERNS AS TO QUALITY OF INTERNSHIP

By means of questionnaires, which were later checked in personal interviews, the interns themselves were asked for their opinion of the quality of the internships. A summary of these opinions, by type of service, is given in the following pages.

INTERNAL MEDICINE

The value of intern training on the medical service may be measured by certain definite standards. These standards, and the extent to which they are met, are as follows:

1. Opportunity given the intern to complete the first diagnostic studies of patients admitted to the general service, and to evolve a hypothesis as to the nature of the difficulty
2. Opportunity given the intern to carry out laboratory tests *only* on patients whom he has studied in this manner
3. Opportunity given the intern to learn the significance and clinical correlation of such special laboratory procedures as x-ray, electrocardiography, and blood chemistry
4. Systematic criticism by the attending staff of the intern's findings at informal and formal rounds and conferences
5. Confirmatory notes recorded on the chart by the attending physician
6. Opportunity taken by the intern to round out his knowledge of medicine by participation in outpatient clinics

Among hospitals in New York City it has been generally agreed that the intern should have the opportunity to complete first diagnostic studies of his patients. In fact, every intern interviewed reported that he had this opportunity. He was expected, as a matter of routine, to record the history, physical findings, and provisional diagnosis. As already indicated, the quality of these records was not always of the best, but the trouble was not lack of opportunity. One cause of inferior work has been a curious division of labor between junior and senior interns. By a sort of assembly-line procedure, the junior wrote the history only, while the senior completed and recorded the physical examination. In few of the hospitals have the interns been taught to summarize their findings in a short, concise paragraph. This has been a frequent cause of inefficient use of the time set aside for rounds and conferences.

The experience given the interns in the performance and proper evaluation of laboratory tests is another phase of intern training which has not received sufficient attention. Seventy per cent of the interns did laboratory work on their

own cases, and thus had an opportunity to compare the result of these tests with their clinical findings. The remaining 30 per cent served as technicians during a separate assignment to the laboratory. As already mentioned, this experience has been of little value because it was divorced from clinical contact. It was of interest, however, to find that 90 per cent of the interns considered participation in laboratory work an essential part of their training, and were not willing to delegate all of it to technicians.

Only 70 per cent of the interns interviewed reported that laboratory technics were clearly specified and adequately supervised. This was done by means of procedure sheets, or by bound laboratory manuals. For the remainder, dependence was placed upon the intern's training in medical school, or upon manuals borrowed from other hospitals.

Opportunities for x-ray correlation were exceptionally good, 98 per cent of the interns finding this phase of their work completely satisfactory. It was provided either at informal conferences with the roentgenologists or at more formal meetings subsequent to rounds, with a systematic review of all films made of patients on the service.

The unusually complete clinical roentgenologic correlation may have a significance not apparent at first glance—the temptation to use a laboratory test as a short cut to diagnosis. The ease with which examinations may be made encourages a reversal of the proper sequence of events. There is real danger that the intern may neglect the fundamentals of history and physical examination requiring the full use of his five senses and may depend instead on the “all-seeing eye” of the x-ray. A machine-made diagnosis may be substituted for careful thought. Roentgenologists are fully cognizant of the difficulty, for they complain of the failure of the hospital staff to furnish them with proper summaries of clinical findings.

It must not be forgotten that great figures of the last generation, such as Delafield and Osler, were able to make accurate diagnoses before Roentgen's discovery. There is need for continued emphasis on the importance of complete clinical studies and weighing of x-ray evidence in the light of these findings.

In twenty-eight hospitals the interns were welcomed by the cardiologist at the time electrocardiographic tracings were read, giving them an opportunity to appreciate better this method of evaluating cardiac abnormalities. However, a surprising number of interns even on medical services were at a loss when they encountered a tracing unaccompanied by an interpretation. In only one-third of all the hospitals was the instruction of good quality.

One of the most neglected of all phases of intern teaching has been the instruction in such diagnostic and therapeutic methods as venipuncture, paracentesis, spinal tap, and examination of body orifices. In less than one-third of the hospitals has such instruction been systematically provided; the average intern on completing his service seems to be incompetent in examination of ear, nose and throat, pelvis, anus, and rectum.

The teaching given by the attending staff is largely concerned with the supervision necessary to guide the intern in his studies and at the same time ensure the welfare of his patients. The extent to which this instruction is given may be measured by the thoroughness with which the attending physicians check the case notes compiled by the interns, and the conscientiousness with which they add their own written comments. It is significant that only 55 per cent of the interns reported that such comments were regularly written or dictated in the course of informal or formal rounds. On many services, the findings of the intern are given a hearing at regular

daily rounds, but the discussion at the bedside and decisions by the visiting staff as to the differential diagnosis and therapy are not recorded on the chart. This may seem an unnecessary refinement, but in reality it is an essential part of the teaching process. It is a criticism in permanent form of the intern's work, and stimulates the older physicians to consider more carefully their teaching responsibilities. For future reference in the follow-up of patients and for clinical group case studies, it is of course essential that the attending physician in charge place himself on record. Curious reasons have been advanced to explain omissions. One explanation has been the fear of being subpoenaed to testify in court should his signature appear on a chart subsequently brought into a court action. Perhaps the commonest excuse has been lack of time. Unfortunately, in some instances attending physicians have been unwilling to place themselves on record, lest their diagnosis should later be found to be in error. If attending staff groups in general could better visualize their responsibilities in this regard, it would make a vast difference in the quality of intern instruction.

The range of clinical conditions encountered varies considerably with the season of the year. An intern on a rotating basis with a spring assignment on medical wards encounters a different variety of patients than does the man assigned during the summer or autumn. This again is an objection to the short assignment in the rotating internship.

In connection with his ward experience, the necessary contact with the outpatient clinic is possible only by systematic planning. In the hospitals surveyed, a large portion of the intern groups did not have the benefit of this essential experience. The percentage of the interns interviewed who reported attendance at the various medical outpatient clinics is demonstrated by the following tabulation:

General medicine	33
Dermatology	6
Cardiology	6
Gastroenterology	2
Allergy	2
Diabetes	2
Neurology	2
Syphilis	2
Chest	*
Endocrine	*
Hematology	*

* Less than one-half of one per cent.

Only one-third of the house staffs attended the medical outpatient clinic with any regularity. Even for this minority the experience was of doubtful value because of the inherent weakness in the average general medical clinic. Only 43 per cent of the interns reported seeing patients by appointment. In the remainder of the hospitals unrestricted numbers were admitted, the work was rushed through, and a poorer quality of work was done. Pedagogically, all would agree that this is a most unfortunate state of affairs.

A time apportionment of fifteen minutes for new patients and five minutes for revisits was not uncommon. In one hospital the interns reported spending from one to ten minutes considering the diagnostic and therapeutic aspects of each patient.

Table 49 shows the time allowed for interviews in the outpatient department as reported by 140 of the interns interviewed.

The experience gained in the special medical clinics was so small as to be negligible. If its immense potential value in dealing with the average patient in practice is taken into con-

sideration, the deficiency of this aspect of an intern's education is especially glaring.

TABLE 49. AVERAGE TIME ALLOWED PER PATIENT IN THE
OUTPATIENT CLINICS BY THE INTERNS INTERVIEWED

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
One minute	—	2	—	2
Five minutes	7	7	4	18
Ten minutes	14	7	21	42
Fifteen minutes	6	11	14	31
Twenty minutes	1	4	16	21
Twenty-five minutes	1	1	—	2
Thirty minutes	2	—	1	3
As much time as necessary	4	7	10	21
<i>Total interns reporting</i>	35	39	66	140

PEDIATRICS

In the sixty hospitals offering general internships, the possibilities for pediatric training are subdivided in the following manner:

	NUMBER OF HOSPITALS
Rotating internships of eighteen months or more	43
Rotating internships of twelve months	4
Straight internships	2
Mixed internships, organized services	2
Mixed internships, unorganized services	2
Regular interns receiving no pediatrics	5
No pediatric service	2
<i>Total</i>	60

It has already been noted in Table 45 that of the forty-three hospitals with rotating internships of eighteen months

or more, thirty-five gave all their interns assignments of less than three months on pediatrics.

If one and one-half to two years of rotation cannot provide sufficient pediatric training, the one-year rotation is manifestly in a worse condition. The relationship noted between the short assignments and the quality of work was more striking in pediatrics than on any other service. In spite of the importance of a degree of competence in the care of the infant and young child for a physician entering general practice, it is the weakest part of the preparation given interns. An example of this weakness is the infrequency of attendance at clinics devoted to the care of infants and children. Only 24 per cent of the interns interviewed went to the general pediatric clinics. One intern attended the pediatric clinics daily over a period of six months and another attended for three months, but the majority did not attend more than twelve times in all.

Young practitioners must be expected to work out a food formula for the baby, and even to show the mother how it is prepared. They will also need to advise as to subsequent modifications and additions to the diet. While instruction in these particulars is given during the medical course, additional practical experience is needed. During the survey a careful estimate was made of the value of this feature of the intern's experience in the fifty-three hospitals offering pediatrics to interns. The results of this estimate were as follows:

	NUMBER OF HOSPITALS	PER CENT OF HOSPITALS
Excellent	8	15
Good	6	11
Fair	13	25
Doubtful	26	49
<i>Total</i>	53	100

A deficiency of this type may not seem important, but it is indicative of the poorly defined objectives of the average intern. In the hospital, formulae and diets may be prescribed by number, and practical details are handled by the diet kitchen. Few interns ask themselves, "How am I going to manage these problems when I have my own practice?"

SURGERY

Among New York hospitals the success of surgical training of interns has been measured by the degree of participation in preoperative and postoperative study and treatment of patients, as well as by experience in the operating room. This has entailed an increasing degree of responsibility during the internship on the wards, in the operating room, in the emergency ward, and in the outpatient department.

The qualification of the interns in surgical diagnosis depends upon the opportunity to complete preliminary study of patients on the general service, and the thoroughness with which their findings are reviewed. Their skill in diagnostic and therapeutic technics depends partly upon their own initiative and observation, and partly upon the supervision and drill furnished by their attending surgeons. The degree to which these criteria were attained may be measured by the following synopsis:

	PER CENT OF INTERNS
Opportunity to complete preliminary work-up	96
Systematic check by attending staff members or residents	73
Systematic study of anatomy and technic by interns	76
Systematic drill in technic	52
Adequate supervision of operations and of treatment	75

In contrast to the situation found on the medical services, not all the interns reported that they had opportunity to com-

plete the preliminary diagnostic study of ward patients. The exceptions occurred in four hospitals. In one the routine history and physical examination had become mere vestiges, and were preserved only to comply with hospital regulations. Almost unbelievably, there was no systematic report by the intern of the patient's previous and present health status, nor was there a supplementary review of the situation by one of his superiors. There was a frank attempt merely to "hit the high spots." In the second hospital the morale of both the visiting and house staffs was low. The visiting staff were remiss in their rounds and could not possibly give the required attention to all their patients. In the third the difficulty was rush of work, and in the fourth there appeared to be a tendency to give too many of the surgical patients emergency status. An intern cannot possibly be expected to complete an adequate history, a physical examination, and the routine urinalysis and blood count in half an hour.

While only 4 per cent of the interns reported a lack of opportunity to complete the preliminary work-up, even this percentage is too high to be dismissed lightly. Furthermore, it will be noted that systematic checking of the intern's findings was reported by only 73 per cent of the interns, which makes the situation even more serious. It is not implied that the patients went to the operating room without being seen by a member of the senior staff, but it does mean that the review of difficulties presented was too casual and too dependent upon snap judgment. There was a curious tendency to consider only the surgical compartment into which the patient's symptoms fell. Consideration of the patient as a whole was regarded as the concern of the medical service.

Approximately one-quarter of the interns stated that they were remiss in the study of technics and anatomic considerations of operations in which they were to participate. An

equal proportion reported that the attending staff failed to furnish sufficient supervision to the interns in carrying out surgical technics and treatments. On the one hand, on the part of the interns there has been an overemphasis on major surgery without sufficient preparation for it, and on the other, a lack of instruction in the procedures which come within their province. Systematic drill in technics which are the A B C of the surgeon's craft was the most deficient element of all phases of the intern's training. These include preoperative preparation, operating room duties, postoperative care, the fundamentals of suturing, the use of clamp and ligature, and incision and drainage of abscesses. Clumsiness on the part of interns in carrying out unsupervised minor surgical procedures at the bedside and in the emergency room was one of the evidences of insufficient training most frequently encountered during the course of hospital visits.

A great deal is involved in the successful introduction of the intern to the operating room. It includes, of course, active participation in the preliminary diagnostic studies and review of the anatomy and pathology of the area under consideration. Only in this way can the intern assimilate what he sees. He needs to learn to take his place on the operating team, to preserve asepsis, and to render competent assistance.

The required teaching may be given by a senior intern, a resident, an operating room supervisor, or a designated member of the surgical staff. Unfortunately the process in most cases has been casual, and rarely have all points been covered. A plan carefully outlined by the surgical director is a prime necessity. This has been recognized by some of the leading surgical services, and their methods are worthy of much wider use. Publications on the subject by Christopher*

* F. Christopher, *Minor Surgery*, 3d ed., Philadelphia, Saunders, 1936.

and by Falk* have merited more attention than they have received. They specify in detail what the intern needs to know.

While an acceptable quality of intern instruction exists on the majority of surgical services, there is serious need to reevaluate the methods now in use. A tradition has grown up that the intern measures his success by the number of major operations he is allowed to perform under supervision. When it is realized that during a rotating internship this surgical practice may cover such diversified fields as ear, nose and throat, chest, abdomen, extremities, and anus, the logical conclusion is that such training cannot be purposeful. In some instances the opportunity is given merely to keep the interns contented.

If the present status of surgical practice and the imminent developments in the graduate training of surgeons are considered, the senior intern can no longer be considered as an immediate candidate for an independent surgical career. His abilities and aptitudes should receive careful consideration. If they warrant encouragement, opportunities should be provided for additional years of formal surgical education.

This question of selection of a surgical career hinges to a great extent upon the duration of the intern's contact with the surgical service. An assignment of two or three months does not give the intern a chance to demonstrate his abilities or the attending surgeon a chance to appraise them. From the point of view both of patient care and of education of the intern, the practice is indefensible.

Attendance of surgical interns at outpatient clinics was surprisingly small. They spent a great many hours standing at

* Henry Charles Falk, *Operating Room Procedure for Nurses and Internes*, 2d ed., New York, Putnam, 1934.

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the operating table, doing ward dressings, giving treatments, writing case notes and reports of operations, and taking their places at rounds. These duties usually conflicted with clinic hours. The percentage of interns who reported that they attended the different types of surgical clinics in the outpatient department was as follows:

Surgery	25
Gynecology	21
Otolaryngology	10
Urology	9
Ophthalmology	8
Orthopedics	6
Fracture	3
Neurosurgery	2

In summation, there seems to be a serious need to reconsider the purpose of the surgical internship in the light of the graduate's future course in practice. A great many of the resources existing in the hospitals are misapplied or are utilized by the wrong individuals. A true surgeon will always be merely a clinician who operates. Nonetheless, the training in the necessary technical skills should be reserved for those who are going to use them.

OBSTETRICS AND GYNECOLOGY

Gynecology as a factor in intern experience stands at present in an uncertain position. In forty of the hospitals with interns, gynecology was combined with general surgery and partook of the assets and liabilities already described under that section. Since the intern's participation is concerned mainly with operative treatment, he comes to view gynecology as a surgical specialty. Only 21 per cent of the interns interviewed worked in the gynecologic outpatient clinic and

their visits were too few for them to attain competence in pelvic examinations or ordinary gynecologic treatments.

In eighteen hospitals the interns received gynecology and obstetrics in combination. Under this arrangement the gynecologic training improved little; the same long hours were spent in the operating room, and visits to the clinic were rare; the emphasis remained primarily surgical. However, the difficulty was not due to the fact that the services were combined but rather to the unsatisfactory plan of the internship.

The qualification possible for the intern in obstetrics is a matter requiring searching inquiry and careful review of resources and community needs. The report on *Maternal Mortality in New York City* by Hooker* suggests that a portion of the profession had defective obstetric training. Remedy of the deficiency can be obtained only by tracing the current of obstetric education back to its source. It will be found to concern undergraduate, intern, graduate, and postgraduate teaching methods. While the training given the intern is but one step of the process, it is the purpose of this report to demonstrate that it is basic and pivotal to all other considerations.

A calculation of the number of interns who may be satisfactorily trained in obstetric procedure is a problem of considerable complexity. While the number of obstetric cases admitted each year to our hospitals has been fairly constant, the number of interns has been rapidly increasing, with consequent diminution of opportunities for each intern. Moreover, not all men are serving internships of equal length. Manifestly, groups taking only one year of internship graduate into practice at twice the rate of those staying a full two years. This factor of turnover makes a vast difference in a

* Ransom S. Hooker, *Maternal Mortality in New York City*, New York, The Commonwealth Fund, 1933.

determination of the extent to which obstetric resources may be made available to intern groups.

When it is remembered that no two of the internships in New York City are exactly alike in pattern, and that they vary in length from one to three years, it is at once apparent that exact mathematical calculations cannot be made. However, by striking averages and by analysis of basic clinical resources, the Committee has felt warranted in coming to quite definite conclusions.

For example, it was found that forty-six of the sixty hospitals in the city offering the general types of internship included obstetric experience in their schedules. In these forty-six hospitals were 818 of the 1,245 interns. This means that not more than 66 per cent of the interns are receiving obstetric training.

	TOTAL INTERNS	INTERNS RECEIVING TRAINING IN OBSTETRICS	
		<i>Number</i>	<i>Per Cent</i>
Straight*	146	—	—
Mixed	197	8	4
Rotating	902	810	90
<i>Total</i>	<i>1,245</i>	<i>818</i>	<i>66</i>

If only 66 per cent of the interns receive obstetric assignment, it remains to be seen whether a better arrangement of schedules in these forty-six hospitals will permit an increase in the number. It is useless to propose that all interns should be given such instruction if there is insufficient clinical material to train them all adequately.

There are two questions to be answered: are the forty-six hospitals training as many interns as can be trained with the

* There are thirty-two special internships in obstetrics or gynecology-obstetrics which might be styled "straight," but as these are considered advanced training they are not included in the calculations of primary internships.

resources available, and are they training them as well as possible? Are there enough men being trained to care for the needs of the community?

The present survey gave an excellent opportunity to study, with considerable exactness, the actual number of obstetric cases available each year, and the number of interns who may be given training in their care.

Obstetric resources may be measured by the number of ward, semiprivate, and private beds, and by the number of admissions, deliveries, and outpatient clinic visits. While private patients may give the intern experience as he assists the obstetrician, in the main such experience is of uncertain educational value. Therefore, ward cases alone form the basis of the considerations below. In 1935, there were 35,219 ward deliveries in the forty-six hospitals giving obstetric training to their interns.* At first glance, it might seem that the 35,219 deliveries divided by the 818 interns on service would give the number available to each man, but this would disregard variations between hospitals. Moreover, the factor of length of internship would be neglected, and this cannot be overlooked.

To establish a norm, it was necessary to determine what constituted an adequate case experience before an estimate could be made of the number of interns each hospital could train. The special subcommittee in obstetrics and gynecology decided that an intern should actively participate in the antepartum, intrapartum, and postpartum care of twenty patients a month during his time on obstetrics. If this concept may be accepted, we have a sound basis on which to calculate resource utilization.

* It was not possible to obtain the figure for ward deliveries for 1936, but since the total number of births in these forty-six hospitals was approximately the same in the two years (48,722 in 1935 and 48,830 in 1936) it may be assumed that the number of ward deliveries was also approximately the same.

Since the mean of all intern obstetric assignments in the past has been three months, it was decided to analyze the material first with this as a unit. In other words, three months on the obstetric service, during which the intern might care for sixty cases, was considered the minimum figure. Each hospital was individually studied, applying this measuring stick, and an estimate made of how many interns could be given this minimum experience. When totaled for all forty-six hospitals, it was concluded that an annual turnover of 508 interns could be accommodated.* Of the 1,245 internships in the city, the great majority were two years in length and the annual turnover was approximately 700 men. In hospitals giving obstetric experience the ratio of interns serving two years was even higher. Hence, the calculations as to the number of interns in any one year who participated in obstetrics may be considered close to one-half the total number of interns on duty in that time. If, therefore, 508 interns may be given the obstetric training above indicated in one year, in a two-year system a total of 1,016 interns would participate.

Thus we see that by giving each intern three months of obstetrics with a total of sixty deliveries it would be possible, with the resources now available, to train 1,016 interns, or 80 per cent of the total number, instead of 818, or 66 per cent, as is now being done, in many cases not adequately.

However, a three-month period has been considered by some authorities to be too short to qualify an intern in obstetrics, even for the needs of general practice. They object that an experience, frequently divided into a junior and a

* This figure was obtained in the following manner: The number of ward deliveries in each hospital was tabulated, and the number of interns who could be given twenty deliveries a month was calculated for the individual hospital. When totaled for the forty-six hospitals, it was found that 127 interns could be assigned to obstetrics at any one time. Since each intern, under the above plan, is expected to spend three months on this service, four groups of interns may be trained each year, aggregating 508 men.

senior service of six weeks each, does not give the intern enough time to learn sound obstetric procedure and to acquire more than a smattering of antepartum and postpartum methods. If the time allotment for each intern were increased to six months, only half as many, or approximately 500 men, could be given training in obstetrics. And the question might be raised whether so small a number could care for the needs of the community.

By reducing the time allowed from six months to four months, it would be possible to increase the number from 500 to 750, giving each man eighty cases and adequate assignment to the outpatient clinics. If in addition two months in gynecology could be provided, especially in combination with obstetrics and with greater emphasis on its medical aspects, the Committee feels that an adequate training in obstetric care would be given. This would mean that 60 per cent of the 1,245 interns, instead of 66 per cent, would receive training in obstetrics.

But will training 60 per cent of the interns provide enough doctors to care for the obstetric needs of the community? While no figures were available as to the total number of physicians who practice obstetrics, the figures obtained from a survey of 1,904 graduates of the five local medical colleges indicate that an average of 56 per cent include obstetrics in their practice.* The type of practice which this group of men has entered is varied, and the number giving obstetric service may perhaps be considered a satisfactory sample of the profession. If this is true, the answer to the question is that 60 per cent of the interns is ample.

These calculations apparently disregard the needs of undergraduate students and residents. It is true that the students of the five New York schools do care for approximately

* See Chapter III, page 50.

TABLE 50. LENGTH OF INTERNS' ASSIGNMENT TO OBSTETRICS OR TO OBSTETRICS AND GYNECOLOGY IN FORTY-SIX HOSPITALS

	GYNECOLOGY AND	
	OBSTETRICS	OBSTETRICS
Three weeks	1	—
One and one-half to two months	4	1
Two to two and one-half months	3	3
Two and one-half to three months	3	1
Three to three and one-half months	5	1
Three and one-half months	3	1
Four months	1	1*
Four and one-half months	1	1
Five months	1	—
Six months	1	3
Seven months	1†	—
Seven to eleven months	3	7
<i>Total hospitals</i>	27	19

* In combination with specialties.

† In combination with pediatrics.

5,680 deliveries each year in the hospitals. In each case, however, interns are present in an advisory capacity and learn just as much as if they were doing the delivery. For that reason, the needs of the student and the intern do not conflict. The same is true of interns and properly qualified residents. On services of adequate size, the resident is not inclined to take over the average case, and thus the intern is given valuable additional instruction. Difficult operative deliveries would not be handled by the interns in any case. For these reasons, it was felt that students, interns, and residents may cooperate in utilization of the same educational resources without detracting from what the interns would receive if considered alone.*

* Eighty-five per cent of all deliveries in New York City are in hospitals; those on

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TABLE 51. NUMBER OF DELIVERIES IN WHICH INTERNS PARTICIPATED

	ASSISTANT		IN CHARGE	
	Number	Per cent	Number	Per cent
<i>Normal deliveries</i>				
None	58	44	16	12
1 to 9	20	15	6	4
10 to 19	13	10	10	7
20 to 29	5	4	12	9
30 to 39	5	4	13	10
40 to 49	6	4	14	10
50 to 74	9	7	17	12
75 to 99	6	4	12	9
100 to 124	2	1	19	14
125 to 149	3	2	6	4
150 to 299	4	3	10	7
300 or more	3	2	2	2
<i>Total</i>	<i>134</i>	<i>100</i>	<i>137</i>	<i>100</i>
<i>Operative deliveries</i>				
None	47	34	76	55
1 to 9	58	42	42	31
10 to 19	14	10	14	10
20 to 29	12	9	3	2
30 to 39	4	3	2	1
40 to 49	2	1	—	—
50 or more	1	1	1	1
<i>Total</i>	<i>138</i>	<i>100</i>	<i>138</i>	<i>100</i>

The duration of obstetric training given the interns showed a decided variation. It ranged from three weeks to six months for the interns on a completely rotating basis; in hospitals

the ward services are now needed for the training of students, interns, and residents. The only resource remaining for giving practical obstetric training to postgraduates appears to be the relatively small number of patients who wish to be delivered at home and are unable to afford a private doctor.

giving a houseship in obstetrics to some of the interns, the service was as long as eleven months. As indicated in the earlier discussion of the duration of services, those of three months or less appeared to be inadequate in the majority of instances. The length of the assignment to obstetrics or obstetrics and gynecology in the hospitals with interns receiving obstetrics is shown in Table 50.

The number of normal and operative deliveries in which the intern participates gives a valuable index of what he is doing. The total number of cases cared for varied greatly. Of the interns interviewed who had training in obstetrics, six were in charge of less than ten patients during their entire service, while two actually delivered more than three hundred women each. Table 51 shows the number of deliveries at which these interns reported that they assisted or were in charge.

Operative deliveries which the intern was allowed to perform consisted chiefly of simple low forceps and episiotomies.

THE SIGNIFICANCE OF THE PRESENT SITUATION

In the hospital the intern is dependent upon the skilled assistance of many individuals, while in home and office he must perform or supervise all these tasks himself. Herein lies one of the basic difficulties of the internship as a training school for private practice. The intern's experience is almost entirely divorced from contact with the patient's home environment, and it is not strange that he fails to visualize the conditions he will face after he leaves the hospital.

The almost universal acceptance of the necessity of an internship as an essential part of medical education has by that token further extended the period during which the intern is divorced from the realities he will face as a practicing physician. In fact, the internship has completely replaced the pre-

ceptorships under general practitioners so commonly obtaining as recently as 1904.* Under the latter arrangement recent graduates were permitted to accompany a physician in his daily round of home visits. Also, they assisted him in his office and saw very clearly the qualities needed to practice medicine successfully. This opportunity has now largely disappeared. In its place the internship has created a sort of Never Never Land in which there is insufficient contact with the outside world. If the intern is to develop sufficiently to carry mature responsibility, a better tie-up with actual practice must be sought. Ninety per cent of his future practice will be in the office and in the home,† while his internship trains him primarily to care for the remaining 10 per cent.

Another very important but neglected field of intern training is that of contagious disease. Considering the importance of contagious disease in general practice, the deficiency of this experience in the average internship cannot be minimized. It is merely another illustration of the difficulty of visualizing the needs of practice in the average hospital internship. The need of some adjustment has been recognized in only three general hospitals in the city. A portion of their interns were allowed to elect a short term of service in a neighboring contagious disease hospital. Obviously, all the interns cannot be rotated through the Willard Parker and Kingston Avenue hospitals, but some provision is needed to extend the training in these diseases into the internship years. It would seem an essential for interns majoring in pediatrics. It is true, of course, that special internships can be secured in these hospitals, but the number of men supplementing the rotating internships in this way has been very small.

* The Education of the Interns [editorial], *Journal of the American Medical Association*, vol. 43, pages 469-470, August 13, 1904.

† Commission on Medical Education, *Final Report*, New York, Office of the Director of the Study, 1932, page 73.

It must be remembered that although the internship has achieved a recognized place in medical education, it has not yet been fully organized on an educational basis. Formal curricula have not been devised, nor have final examinations even been contemplated. In these respects it differs fundamentally from undergraduate medicine or graduate courses which have as their objective an advanced degree. The success of undergraduate medical teaching is tested by college and state board examinations. Final examinations are required by the specialty boards. If intern education is to be similarly defined, should not examinations be used to measure its efficacy? A vital issue is concerned and an answer to the riddle must be found. If the internship is to be recognized as a formal part of medical education and basic to all forms of practice as well as to further special training, a practicable method for its control must be found. At present the educational quality of "approved" internships varies widely among hospitals and services and even with the seasons of the year, since the kind of cases seen in the winter months is different from that seen in the summer. Until a better plan for educational supervision can be formulated, intern education in New York City will continue to exist in a condition of unstable equilibrium. Without much doubt there is an urgent necessity for better cooperation on the part of the hospitals and the local educational institutions with the American Medical Association. The latter has done splendid work in establishing minimum standards and stimulating interest but it has not received adequate support from local agencies. Until this can be furnished, intern teaching can hardly be rated on a par with other forms of acceptable medical education.

CHAPTER NINE. Residencies and Fellowships in New York City Hospitals

RESIDENCIES in New York City are increasing in number at a rapid rate, but in spite of efforts at standardization, their place in the educational order is still an uncertain one. Even though necessity has forced their introduction, they have too often endured the status of unwelcome step-children. In contrast, the internships enjoy the position of fully accepted members of the hospital family. This is not surprising, in view of the recent appearance of residencies on the medical scene. When it is recalled that an annual approved list was not issued by the American Medical Association until the last decade, it could hardly be expected that these newly created super-internships would yet be through with their growing pains.

The Committee's concept of residencies and fellowships has been outlined in the glossary of terms at the beginning of the book. In addition, it is necessary to consider the standards set by the Council on Medical Education and Hospitals which must be met if the residency is to be listed as approved in the Council's annual report. Included in these lists are residencies in general hospitals with special services, as well as in purely special hospitals. These essentials are given below.

Resources and Organization of the Hospital

1. Adequate clinical material and equipment needed for training in the specialty
2. A properly organized staff with assumption of responsibility on the part of the chief of service for the training of the resident
3. Regular staff conferences in which the resident takes part
4. Adequate clinical and pathological laboratories under a competent pathologist*

* For residencies in either pathology or roentgenology, the respective laboratories must be in charge of specialists on the approved list prepared by the Council.

5. An adequate roentgen-ray laboratory under a qualified roentgenologist*
6. An adequate medical library
7. Complete and properly supervised medical records
8. Performance of necropsies on at least 15 per cent of patients deceased in the hospital

Qualifications and Educational Program of the Resident Staff

1. Preliminary education: graduation from an approved medical school, followed by an internship in an approved hospital
2. Duration of residency to be not less than one year
3. Opportunity to participate in the performance of necropsies
4. Opportunity to assume responsibility
5. Encouragement of the resident to take part in investigative work
6. Responsibility for teaching the interns

As with the internships, these specifications outline the minimum standards which approved hospitals or services are expected to meet. During the Committee's survey of New York City, these standards were most useful as a guide in reaching a decision as to the success of the residencies presented. However, it was found that the needs of adequate graduate training required further definition of each step in the educational progression. For instance, it was the opinion of the Committee that a single year on one service following one year of rotating internship did not deserve to be dignified as a residency. The conclusions which were reached with regard to this matter will be discussed later in connection with the Committee's report on the essentials of adequate residencies.

METHOD OF STUDY ADOPTED BY THE COMMITTEE

Early in the study, it was apparent to the Committee that, even more than the internships, the residencies were prob-

* For residencies in either pathology or roentgenology, the respective laboratories must be in charge of specialists on the approved list prepared by the Council.

lems of national scope. It has been a frequent practice to refer promising interns to medical centers in other parts of the country so that they might better round out their education. For this reason, care was taken to compare the different ideas of medical educators, not only among the hospitals in the city, but in other centers as well. Also, it was necessary to examine the standards, for the most part recently formulated, of the national specialty boards. It was hoped that such an assembly of factual material, opinions, and criteria might materially aid in better crystallization of ideas concerning the place of residencies and fellowships in graduate education. Obviously, one of the most important mandates of this study has been a critical evaluation of the residencies now offered as part of the training for a specialty.

Accordingly, the Committee's study may be considered as having three steps.

First, information with regard to residencies in New York City was obtained by means of personal interviews with the heads of special services and with residents on those services. This was supplemented by observations made and data obtained at the time of hospital visits. The special subcommittees dealing with medical, surgical, and obstetric and gynecologic residencies reviewed this material in the light of their own extensive experience with graduate education. In order to broaden the scope of the inquiry the chairmen of these subcommittees wrote to leading specialists throughout the country asking them, by means of questionnaires, to record their convictions as to residency training. There was a generous response to these requests and the valuable material thus obtained was compared with opinions obtained in New York City.

The information thus assembled has been grouped under two heads in the following discussion: (1) Residencies in New York City hospitals (duties and opportunities of the

resident, advantages to the hospital of a resident staff, number of residencies in the various specialties, length and plan of the residencies, and evaluation of residencies as graduate training) and (2) Attitude toward residencies (as shown by the response to questionnaire and interview of attending staff members, residents and fellows, and interns).

The second step was to consider the requirements of each of the specialty boards. Since these requirements attempt to outline the essentials necessary to qualify an individual for a specialty they inevitably include all plans for residencies on an educational basis. These requirements of the specialty boards are discussed in the section under the corresponding head in this chapter.

Finally, after carefully considering all these aspects of the situation, the Committee attempted to suggest procedures that will better utilize the hospital resources of New York City in the training of specialists. Their conclusions were based upon the consideration of ideal conditions and the possibility of attaining them. They covered the following points: prerequisites for residency (professional education), length of residency, and duties and responsibilities of the resident. These are discussed in the sections devoted to the Committee's reports on the essentials of residencies in the various specialties.

Early in the study it was evident that there was great divergence of opinion, not only on the part of the medical schools and hospitals and the various boards, but on the part of individual members of each group. Some of the opinions collected will be found in Appendix 6 (page 426).

RESIDENCIES IN NEW YORK CITY HOSPITALS

The entire residency and fellowship program of the hospitals in New York City appears to be still in a developmental

and experimental stage. So many influences are at work, and there has been an interplay of such divergent educational philosophies, that few final opinions can be expressed. This is not surprising when one considers how informally residency plans have come into being. In every instance, they have been independently conceived projects by individual hospitals. For the most part, they have appeared first on teaching services and in the larger municipal hospitals having an extra burden of administrative and supervisory duties. The needs of the situation have required the presence of resident house officers more experienced than the interns. While the duties assigned have been primarily clinical, administrative responsibilities have been heavy. In the latter respect, the resident has ranked as a salaried staff member standing about midway in position between the deputy superintendent and the interns. On teaching services his position has approximated that of instructor in the college faculty.

DUTIES AND OPPORTUNITIES OF THE RESIDENT

The duties of residents naturally vary on different types of services, but the underlying principles are much the same for all. They may be catalogued as follows:

1. Under the supervision of the director and the attending staff, the resident has general charge of the work of the assistant residents and the interns. He is expected at all times to promote efficient running of the service.
2. In the absence from the hospital of members of the attending staff, the resident who represents them is expected to report all accidents, emergencies, sudden and serious change in the condition of patients, and other unusual events.
3. He is on duty at all times except when it is necessary for him to be absent from the hospital. During such absence, arrangement is made for the assistant resident or the senior intern to act as substitute.
4. All new admissions are seen, and a note of appropriate length

written. Whenever possible, this is subsequent to the examination made by the intern in charge.

5. Daily general inspection is made in all wards, and all patients seriously ill are seen.

6. On surgical services he arranges the operating schedule under the direction of the attending surgeon. His participation in operative work remains under the guidance of the director or the attending surgeon. The same applies to organized surgical follow-up.

7. On medical services the resident notifies members of the attending staff of surgical operations or postmortem examinations on patients who have been on the medical service.

8. He keeps a record of deaths, with relation to obtaining permission for autopsies. This record indicates the individual who sought permission for the autopsy, and whether or not the permission was obtained. Such a record indicates the success of the house officer in this respect.

9. Outpatient clinics. Whenever possible, the resident attends general or special clinics and invariably is present at follow-up. On certain of the special services, outpatient experience is obligatory.

10. Frequently the resident conducts house staff rounds, either the first thing in the morning or the latter part of the afternoon, which prove of great teaching value.

11. A very important function of the resident is the planning of all conferences, under the guidance of his director, and the training of interns in case presentation.

12. He plays an important role in planning all activities devised for intern education, such as initial instruction in procedures and techniques at the beginning of service, and stimulation of seminars, journal clubs, and special lectures.

13. He arranges vacation schedules and other leaves of absence, assigns new interns to their duties, and plans the necessary shift of the house staff from ward to ward.

14. Frequently there must be responsibility for the teaching schedule of undergraduates, such as supervision of schedules, assignment of cases, teaching of ward procedures, substitution for instructors, preparation of clinicopathological conferences.

15. During certain periods the resident may be assigned to conducting clinics for the nurses and assisting with their health care.

16. A recent additional responsibility has been the systematic health examinations of the house staff.

17. In university hospitals particularly, time has been set aside for work on a special problem.

18. Finally, according to the criteria promulgated by the qualifying boards in the specialties, the resident must have an opportunity for basic science training, either during his period of residence or previous to it.

It is readily apparent that the qualities required of a successful resident are of the highest type. Duties presumably within his province form an almost staggering total when subjected to tabulation. Few hospitals, as now constituted, can give such a comprehensive sweep of experience. For any great extension of this form of education, provision must be made for better laboratory and library resources. Funds are required to finance additional equipment, basic science studies, research projects, and salaries. Adequate housing for needed resident staffs has been one of the most serious deficiencies in New York hospitals. The rapid increase in the number of residents within the last few years has been largely the result of necessity and not of any conscious planning.

ADVANTAGES TO THE HOSPITAL OF A RESIDENT STAFF

Certain reasons for the increase in resident staffs are worthy of emphasis. First of all, most of the visiting or attending staff are on a voluntary basis. Their reward has been the opportunity to progress in their education. This must frequently be at considerable financial self-sacrifice. The rapidly expanding demands of the modern service, which automatically is on a teaching basis if it accepts interns or students, places an ever increasing burden upon a visiting staff already struggling with

financial burdens and seriously handicapped for time to care for their private patients.

The inevitable answer has been the introduction of residents or fellows, or expansion of the junior visiting staff to allow shorter periods of assignment on duty. The appointment of a resident offers the advantage of furnishing continuity of service throughout the year and the centering of a great deal of the administrative routine in one individual. With his assistance, the director is enabled to formulate comprehensive precedents to guide his staff and insure the minimum essentials of intern training.

One of the most striking evidences of resident influence seen during the survey was the improvement in quality of the average staff conference. In some hospitals there had been before the introduction of residents only an inadequate general conference for the whole hospital, held perhaps once a month. The resident was the one person who could find the time to select cases, supervise the preparation of protocols, and drill the interns in efficient presentation of their cases. Also, it was found possible to have small, individual service conferences, and to hold them more frequently.

One of the unpredictables in any organization is the absence of staff through illness or unforeseen emergency. The resident functions as an invaluable stopgap in clinics, teaching exercises, consultations, and so forth, when the assigned member of the attending staff is unable to appear.

Being closer to the interns in age and amount of experience, the resident is frequently better able to understand their deficiencies and to furnish needed instruction than are the older members of the attending staff. There is less diffidence on the part of the interns in asking him questions about ordinary problems.

Perhaps the best testimony in the residents' favor has been

given by the interns serving under them. Except for conflicts of personality, there has been almost complete agreement with the idea, where it has been put into successful operation. The reaction of these interns has been that the properly qualified resident does not feel the urge to compete with the senior interns. On the contrary, he gives them opportunities for perfecting themselves in ordinary technics which would otherwise not be available.

DISTRIBUTION OF RESIDENCIES BY SPECIALTY

The 545 residencies and assistant residencies existing in the city at the time of the survey gave the Committee an excellent opportunity to determine to what extent a representative group of hospitals had been able to meet the needs of the situation. Besides the residencies, there were thirty-two fellowships and twenty-two private assistancies (listed by the hospitals as residencies), but the latter were excluded from consideration. The fellowships have usually been considered acceptable substitutes for periods of residency and may be applied to either clinical or basic science requirements, depending on content. Because of their relatively small number, and to avoid unnecessarily complicating the discussion, the fellowships have been considered a part of the residency grouping.

As revealed by Table 2,* the 577 residencies and fellowships were divided into medical, surgical, and other special groups. Those in the medical fields were divided between internal medicine, pediatrics, communicable disease, chest disease, neurology, psychiatry, dermatology and syphilology, allergy, neuropsychiatry, and venereal disease. The major share were accounted for by four fields—medicine, pediatrics, neurology, and chest disease. Quantitative deficiency in the remaining fields is clearly indicated.

* See pages 21-22.

The 277 residencies and fellowships in the surgical classification included general surgery, gynecology, urology, otolaryngology, ophthalmology, orthopedics, tumor surgery, neurosurgery, plastic surgery, thoracic surgery, fractures, and traumatic surgery. The distribution of opportunity in surgery seemed better related to public needs than it was in medicine, although the number of places annually available for training men in plastic and thoracic surgery and in fractures was surprisingly small. Of course in several instances this experience was offered in connection with residencies in general surgery.

Obstetrics and gynecology were considered separately from the other surgical specialties. This was due to the uncertain position gynecology has occupied between general surgery and obstetrics. Because of the trend toward combinations of obstetrics and gynecology in leading hospitals and in plans for the training of specialists, the problem was studied by a separate subcommittee and reported in a separate section. For the sake of fairness, but at the risk of confusion, gynecology was also considered with surgery, as it still does exist as an independent specialty, and was taken up by the subcommittee covering the surgical fields. However, attention should be drawn to the larger number of combined obstetric and gynecologic residencies in contrast to the limited number existing as separate entities. In fact, the thirty residencies in the combined group were well over twice the sum of those in one category or the other.

LENGTH AND PLAN OF THE RESIDENCIES

The Committee believes that to qualify the individual as a specialist the residency must be of at least two years' duration and must include an assistant residency as well as a residency.*

* In some hospitals, the resident is called a senior intern and the assistant resident a junior intern.

An examination of the duration of residency assignments as they actually obtain in the New York hospitals revealed at once a wide diversity of opinion and of situation. The length of the residency for approximately half the services offered by the hospitals (107 out of 207) was found to be only one year (see Table 52). But the great majority of men serving as residents (422 out of 577) are participating in longer assignments. The situation in two specialties serves as an illustration. In internal medicine fourteen residents are serving one year in nine hospitals as compared with twenty-two who are serving more than one year in five hospitals; in surgery, twenty-two residents are serving one year in ten hospitals as compared with forty-three who are serving more than one year in eight hospitals. Similarly in pediatrics, obstetrics, and pathology there were more services under the one-year plan but more residents under the longer plan.

In eleven specialties or specialty groups there were more services and more residents under the longer plan: communicable disease; chest diseases; psychiatry; gynecology; urology; otolaryngology, ophthalmology, and these two fields combined; orthopedics; tumor surgery; and gynecology and obstetrics combined.

In neurology there were the same number of services (four) under each plan, but twenty-four residents out of thirty-two were serving more than one year.

In only two of the remaining specialties, radiology and anesthesia, was the number of residencies large enough for a comparison by duration to be significant, and in these fields we have a situation that runs counter to the general tendency: there were more hospital services and more residencies under the one-year plan.

On the whole the trend seems to be away from the single-year unit of service.

Residencies and Fellowships

TABLE 52. DISTRIBUTION OF RESIDENCIES BY DURATION

SPECIALTY	ONE YEAR		MORE THAN ONE YEAR		TOTAL	
	Hospital services	Resi- dents	Hospital services	Resi- dents	Hospital services	Resi- dents
Internal medicine	9	14	5	22	14	36
Pediatrics	10	14	7	21	17	35
Communicable disease	1	2	2	13	3	15
Chest diseases (including tubercu- losis)	2	2	6	34	8	36
Neurology	4	8	4	24	8	32
Psychiatry	1	1	2	11	3	12
Dermatology and syphilology	2	2	1	2	3	4
Allergy	—	—	1	1	1	1
Venereal diseases	—	—	1	1	1	1
Neuropsychiatry	1	1	—	—	1	1
<i>Total</i>	30	44	29	129	59	173
Surgery	10	22	8	43	18	65
Gynecology	1	1	2	8	3	9
Urology	5	5	7	22	12	27
Otolaryngology	2	2	8	33	10	35
Ophthalmology	3	3	6	32	9	35
Ophthalmology and otolaryngology	1	2	6	19	7	21
Orthopedics	2	2	7	41	9	43
Tumor surgery	2	3	3	25	5	28
Neurosurgery	3	3	1	3	4	6
Neurology and neurosurgery	1	1	—	—	1	1
Specialties	1	1	—	—	1	1
Plastic surgery	1	1	—	—	1	1
Thoracic surgery	2	2	—	—	2	2
Fracture surgery	1	2	—	—	1	2
Fracture and traumatic surgery	1	1	—	—	1	1
<i>Total</i>	36	51	48	226	84	277
Obstetrics	6	6	4	7	10	13
Gynecology and obstetrics	2	2	7	28	9	30
<i>Total</i>	8	8	11	35	19	43
Pathology	12	15	6	16	18	31
Radiology	11	15	4	12	15	27
Anesthesia	4	15	1	1	5	16
General	4	4	—	—	4	4
Metabolism	—	—	1	3	1	3
Ambulance	1	2	—	—	1	2
Outpatient department	1	1	—	—	1	1
<i>Total</i>	33	52	12	32	45	84
<i>Grand total</i>	107	155	100	422	207	577

However, it must be admitted that in certain of the smaller hospitals a single year of residency may be all that can be provided. It was possible for some hospitals to obtain residency candidates from the ranks of men who had served special internships or assistant residencies elsewhere. For many of the hospitals of smaller size there seems to be no objection to the idea of residents obtaining two or more years of experience divided between different hospitals. This would revive the peripatetic plan so popular in days gone by in Europe.

It must not be assumed that all participants in prolonged residency plans received a complete course of training. In fifteen of the hospitals, more assistant residents were accepted than could be carried through the full residency schedule.

This situation brings to light two different theories of graduate education and hospital practice. In one, the system may be compared to a pyramid whose base consists of a considerable number of interns or assistant residents. From their number, a successively smaller number of the most promising are selected each year, until finally only one individual scales the heights to receive the reward of complete training. In university hospitals, this individual is considered a candidate for an academic career.

The justification for this system has been the spirit of hard work engendered by the competitive atmosphere. Each man is stimulated to put forth his very best efforts in the hope that he may win a place among the limited number of promotions. It should not be concluded, however, that those not promoted necessarily suffer frustration. Those obtaining only one year of assistant residency may use the training very satisfactorily as a special interest in connection with general practice. Those carried farther may find the experience a sufficient basis for further development as members of hospital visiting staffs. Others have been successful in obtaining residencies in other hospitals.

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An example of the pyramidal form of graduate training may be illustrated by the following situation in one hospital service:

First year: ten interns in obstetrics and gynecology

Second year: four interns in gynecology

Third year: three assistant residents for basic science studies

Fourth year: two assistant residents in gynecology and obstetrics

Fifth year: one resident

In reality, the plan closely parallels that utilized in most hospital staff organizations. The number of clinical assistants is always larger than the number of those in the senior grades of service. By progressive elimination, the ablest members are retained for the higher rankings, until only one survives to win the post of chief attending or director.

The second theory of residency training plans to assure each participant a complete course of training, provided his work is satisfactory. This might be styled the tandem system of progression. There is not the same competitive drive which characterizes the first plan; but it has worked out successfully on services of high grade. In one hospital where both systems were in use, the resident on the non-competitive service complained that discipline and quality of work were not as good.

The method may be clearly illustrated by the following setup:

First year: four interns for six months each in obstetrics and gynecology

Second year: one assistant resident for a year in pathology (on duty alternate nights on the wards)

Third year: one junior resident in obstetrics

Fourth year: one resident in gynecology

Of course, both of the above examples are found on the more elaborate teaching services. In most instances, the setup

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is much simpler, there being merely one or two assistant residents and one resident.

EVALUATION OF RESIDENCIES AS GRADUATE TRAINING

The essentially educational function of acceptable residencies is coming to be more and more clearly recognized even by hospitals that do not have the guiding influence of an associated college teaching service. That this is true is convincingly shown by the recent report of a survey by the American College of Surgeons* in which the residency was considered as the only method of obtaining acceptable graduate training. Hospitals purporting to train men in surgery in the last six months of a two-year internship as "house surgeons" were excluded from consideration. The conclusions of this report as to actual and potential facilities existing in the United States for graduate training of surgeons, while admittedly preliminary in nature, are worthy of careful study. It is pointed out that ample facilities exist if they are properly organized. Actually only 38 per cent of the hospitals surveyed were giving any real systematic supervision to their residents. Opportunities for basic science correlative study were considerably less well utilized.

In the present study of the resources of the city for graduate training of doctors, it was necessary to make some evaluation of the fellowships and residencies now in existence from the point of view of educational standards. The advantage of studying the actual situation was twofold. Residencies of acceptable quality offer a basis for future plans of formal education that have the value of merit tested by actual experience. Further extension of graduate training will be best predicated on methods proved to be sound through years of

* Melville H. Manson, M.D., Report of Survey on Graduate Training for Surgery, *Bulletin of the American College of Surgeons*, vol. 23, pages 9-21, January 1938.

TABLE 53. ESTIMATE OF THE QUALITY OF RESIDENCIES, ASSISTANT RESIDENCIES, AND FELLOWSHIPS

SPECIALTY	RESIDENCIES			ASSISTANT RESIDENCIES			FELLOWSHIPS			ALL APPOINTMENTS			
	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Total
Internal medicine	10	8	2	14	2	—	—	—	—	24	10	2	36
Pediatrics	9	7	1	15	2	—	—	1	—	24	10	1	35
Communicable disease	4	2	—	9	—	—	—	—	—	13	2	—	15
Chest diseases (including tuberculosis)	6	1	—	26	3	—	—	—	—	32	4	—	36
Neurology	9	—	3	20	—	—	—	—	—	29	—	3	32
Psychiatry	3	6	—	3	—	—	—	—	—	6	6	—	12
Neuropsychiatry	—	1	—	—	—	—	—	—	—	—	1	—	1
Allergy	1	—	—	—	—	—	—	—	—	1	—	—	1
Dermatology and syphilology	1	2	—	—	1	—	—	—	—	1	3	—	4
Venereal diseases	—	1	—	—	—	—	—	—	—	—	1	—	1
<i>Total</i>	<i>43</i>	<i>28</i>	<i>6</i>	<i>87</i>	<i>8</i>	<i>—</i>	<i>—</i>	<i>1</i>	<i>—</i>	<i>130</i>	<i>37</i>	<i>6</i>	<i>173</i>
Surgery	7	15	7	20	3	4	9	—	—	36	18	11	65
Urology	4	7	—	8	6	1	—	1	—	12	14	1	27
Ophthalmology	5	6	—	13	7	—	4	—	—	22	13	—	35
Otolaryngology	2	10	1	2	19	1	—	—	—	4	29	2	35
Ophthalmology and otolaryngology	3	4	4	5	3	2	—	—	—	8	7	6	21
Orthopedics	10	4	—	21	2	—	6	—	—	37	6	—	43
Gynecology	3	—	—	6	—	—	—	—	—	9	—	—	9
Tumor surgery	4	6	—	7	4	—	7	—	—	18	10	—	28
Neurosurgery	4	—	—	2	—	—	—	—	—	6	—	—	6
Neurosurgery and neurology	1	—	—	—	—	—	—	—	—	1	—	—	1

TABLE 53 (continued)

SPECIALTY	RESIDENCIES			ASSISTANT RESIDENCIES			FELLOWSHIPS			ALL APPOINTMENTS			
	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Good	Fair	Doubt- ful	Total
Fracture surgery	1	-	-	1	-	-	-	-	-	2	-	-	2
Fracture and traumatic surgery	1	-	-	-	-	-	-	-	-	1	-	-	1
Thoracic surgery	2	-	-	-	-	-	-	-	-	2	-	-	2
Plastic surgery	1	-	-	-	-	-	-	-	-	1	-	-	1
Specialties	-	1	-	-	-	-	-	-	-	-	1	-	1
<i>Total</i>	48	53	12	85	44	8	26	1	-	159	98	20	277
Obstetrics	8	1	-	3	1	-	-	-	-	11	2	-	13
Obstetrics and gynecology	8	2	-	20	-	-	-	-	-	28	2	-	30
<i>Total</i>	16	3	-	23	1	-	-	-	-	39	4	-	43
Pathology	6	7	-	13	1	-	4	-	-	23	8	-	31
Roentgenology	5	2	-	-	3	-	-	-	-	5	5	-	10
Radiology	7	-	-	2	3	-	-	-	-	9	3	-	12
Radiation therapy	1	3	-	1	-	-	-	-	-	2	3	-	5
Anesthesia	10	5	-	-	1	-	-	-	-	10	6	-	16
General	-	2	2	-	-	-	-	-	-	-	2	2	4
Metabolism	-	1	-	-	2	-	-	-	-	-	3	-	3
Ambulance	-	-	-	-	-	2	-	-	-	-	-	2	2
Outpatient	-	1	-	-	-	-	-	-	-	-	1	-	1
<i>Total</i>	29	21	2	16	10	2	4	-	-	49	31	4	84
<i>Grand total</i>	136	105	20	211	63	10	30	2	-	377	170	30	577

application. Similarly, residencies of dubious standing present defects and weaknesses revealed after sufficient trial that are just as valuable as successes in formulating new plans.

In appraising the various types of advanced training now available from the standpoint of meeting minimal educational requirements, criteria elaborated by the Committee and by the Council on Medical Education of the American Medical Association were used, and three degrees of excellence were distinguished: good, fair, and doubtful.

As is shown in Table 53, of a total of 277 surgical appointments, 159, or 57 per cent, were considered good, 35 per cent fair, and the remainder of doubtful quality. The chief difficulties were encountered in general surgery, urology, ophthalmology, otolaryngology, and tumor surgery, and were due to difficulties inherent in the local situation.

There were 173 medical residencies of which 130, or 75 per cent, were of good quality, thirty-seven, or 21 per cent, were fair, and six, or 4 per cent, were doubtful. It can be seen that there is room for considerable improvement in the fields of internal medicine, pediatrics, and psychiatry. Dermatology and syphilology residencies were few in number and made a good showing in only one instance.

In obstetrics and obstetrics combined with gynecology the majority of the residencies were unusually good.

Among the other specialties, the best showing was made by pathology, radiology, and anesthesia; the remaining residencies being for the most part mediocre and needing revision and elevation of standards.

In summarizing these four groups it was found that 57 per cent of the surgical residencies, 75 per cent of the medical residencies, 91 per cent of those in the obstetric and gynecologic fields, and only 58 per cent of those in the ancillary specialties could be rated as good. Obviously there is need for bet-

ter educational organization of the residencies and this can be secured in part by further definition of objectives.

*ATTITUDE OF STAFF MEMBERS AND OTHERS
TOWARD RESIDENCIES*

OPINIONS OF ATTENDING STAFF MEMBERS

One of the main purposes of the study was to learn the reactions of the educational institutions and hospitals to the installation of residencies. The success of any residency plan must be dependent on the enthusiasm and cooperation of the attending staff concerned.

Four hundred and forty-two attending physicians and surgeons were asked for their opinion as to the desirability of residencies on their own services. Approximately 70 per cent of the group favored their use. The discussion of this entire subject with different members of attending staffs, many of whom had given no special thought to the subject, aroused a great deal of interest and brought out a variety of reactions. The point of view of those men who had had no experience with residents was naturally colored by the effect the introduction of a residency would have on their own institution or service. Other men had had residents on their services for a considerable period and their reports carry the weight of long experience. They had installed residents of their own volition in response to a definite need, and as might be expected the sentiments expressed were almost unanimously favorable.

There was, of course, a sharp difference of opinion on the part of those attending staff members who had residents on their own services and those who did not have them. Those having residents were almost unanimously in favor of the system; those not having them were not nearly so favorably inclined. However, in this latter group, nearly half based their objection on the small size of their own service. It

would appear from this that in hospitals where there is sufficient clinical material, those opposing the residency in principle are decidedly in the minority.

In order to understand their reasons for and against residents, the opinions of the attending physicians and surgeons have been grouped under the following heads:

1. The value of residencies in improving standards of patient care
2. The effect of the establishment of residencies on the quality of intern training
3. The value of the resident system as a preparation for the practice of a specialty
4. The effect of the establishment of residencies on the junior attending staff members

A summary of the opinion on these four points is given in Table 54.

Influence on patient care. Of first concern is the quality of attention given the patient. Where residencies have been established and given proper standing, there is almost complete agreement that the patients receive better care. The resident is a picked man from previous intern groups, installed on the service for one or more years in order to insure higher medical standards. He has had longer contact with the methods of the hospital than the interns and the work runs more smoothly. Mistakes of omission and commission are rare and the patients reap the benefits. With difficult cases, the attending staff can rely on skilled assistance which may make a life-or-death difference. Particular emphasis is laid on the importance of a continuous period of assignment of one or more years. It is felt that no human endeavor can be held at its maximum efficiency if a complete change of personnel is effected every three or four months. To this concept medicine seems no exception.

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TABLE 54. OPINIONS OF ATTENDING STAFF MEMBERS AS TO
DESIRABILITY OF RESIDENCIES

SPECIALTY OF ATTENDING STAFF MEMBER	RESIDENCY DESIRABLE							
	For patients		For interns		For training specialists		For junior attending staff	
	Yes	No	Yes	No	Yes	No	Yes	No
Medicine								
Now have residents	73	—	64*	—	73	—	73	—
Have no residents	30	41	27	44	29	42	26	45
Surgery								
Now have residents	65	1	65	1	65	1	64	2
Have no residents	49	55	43	61	55	49	49	55
Obstetrics and gynecology								
Now have residents	23	2	23	2	24	1	23	2
Have no residents	12	11	12	11	13	10	10	13
Ancillary specialties								
Now have residents	26	—	26	—	26	—	26	—
Have no residents	29	25	29	25	30	24	29	25
All attending staff members								
Now have residents	187	3	178*	3	188	2	186	4
Have no residents	120	132†	111	141†	127	125†	114	138†

* Nine have no interns.

† Of these, twelve favored other methods of graduate teaching; sixty-three felt that their services were too small or that the material was insufficient.

Influence on intern training. On services maintaining residents, the attending staff members have been uniformly pleased with the improvement in the grade of intern supervision and instruction. New interns are more systematically introduced to their duties, and careless habits are prevented. The resident is made responsible for the maintenance of the high standards outlined by his chief of service. He is expected to lead house staff rounds, coach the interns in preparing cases

for staff conferences, foster journal clubs, and stimulate intern seminars. If he is adequately prepared, the resident does not compete with the house surgeon but actually adds to the value of his experience.

As preparation for practice of a specialty. The residency system should be the ideal preparation for entering the specialties. If adequately planned and correlated, it offers opportunities difficult to obtain in any other way. Modern specialty requirements are so exacting that uninterrupted time must be provided to acquire the essential elements for qualification.

Effect on the development of the junior attending staff. The residents are considered potential material for appointment to the junior attending staff of their own or other hospitals. The residency assures a more adequate foundation for the subsequent career. On analysis, the rare conflicts reported seemed to be caused by having the residents supervised by junior attending men of inferior quality.

Usually the residents have a valuable stimulating effect upon their superiors on the attending staff. The guidance required by a talented group of young men in handling difficult cases or undertaking original investigation keeps the entire senior group "on their toes."

Hospitals without residencies are, of course, faced with a readjustment of their order of succession if residents are introduced. Former interns who are attempting to enter a career by way of voluntary service in the clinic and on the ward may come into direct conflict with the new system. However, a surprising number of the attending staff members in the group felt that residencies would not prejudice the future of their junior men.

Objections. The few men having had experience with residents on their services who raised objections to the plan based their criticism on the idea that a resident interferes with the

development of a sense of responsibility on the part of the senior intern. The road to specialism was visualized as progression through the ranks of the outpatient and junior attending staffs.

On services without residents there were a number of attending physicians and surgeons who believed that the installation of residents on their wards would not materially benefit the patients. Many of these hospitals are limited in size and amount of clinical material. In these cases, the objection seems to be valid. The only practical arrangement for them appears to be well organized internships supervised by the attending staff.

In the larger hospitals without residents, the principal fear expressed was that the resident would interfere with the prerogatives of the interns and the younger attending staff members, that staff morale would be lowered and the patients suffer as a consequence. The problem has been particularly acute on surgical services. Tradition has given the house surgeon a standing very similar to that of the resident but without his basic preparation. The fear is that if he is reduced from his present status, the hospital will be handicapped in its competition with other hospitals for the most desirable type of intern. Furthermore, if the intern is frustrated in what is sometimes considered the final reward of the internship, the opportunity to do major surgery, he will lose his incentive and ambition. In one hospital, a half-time graduate course was preferred to a residency system because it extended opportunities to a larger number of men and provided time to engage in practice.*

Another objection was that the resident leads too sheltered a life, becomes too dependent upon the hospital environment,

* It should be pointed out that such courses do not provide the actual responsibility and operative experience of a residency. Subsequent residency or preceptorial experience must be obtained.

and is loath to exchange its security for the uncertainties of practice.

Nevertheless, the trend appears to be definitely toward the introduction of experienced house officers of residency status, because of the growing realization that the standards of modern medical care in the larger hospitals cannot be maintained without them.

OPINIONS OF RESIDENTS AND FELLOWS

Another method of obtaining information about the value of residencies was from the residents themselves. Their replies to a series of printed questions were recorded and checked at a personal interview. Thus information was secured as to their preparation for the residency and their experience in the hospital.

The residents are a mature and responsible group and should have an adequate hearing. Their opinions are of great value, although they cannot, of course, be accepted as final judgment on the quality of the training.

Educational supervision. The first consideration was to learn their opinion of the degree of educational supervision given by the attending staffs. It must be remembered that residents have not been uniformly regarded as apprentices in training for a special career. In many cases the resident was introduced, as was the intern before him, without a mature plan for his education. Even when there was a plan originally, the tendency has often been to use the resident to help out wherever the need arose. A great deal of administrative and clerical work has been required of residents, especially if they have been paid a salary. Hence there has been danger of losing sight of the primary objective of the residency.

The extent of educational preceptorship, according to the residents, may be shown by Table 55.

TABLE 55. OPINIONS OF 228 RESIDENTS AS TO SUPERVISION BY ATTENDING STAFF

TYPE OF SUPERVISION	TEACHING HOSPITALS		AFFILIATED HOSPITALS		NONTEACHING HOSPITALS		ALL HOSPITALS		
	Yes	No	Yes	No	Yes	No	Yes	No	Total
Formal instruction	75	33	48	19	38	12	161	64	225
Informal instruction	104	7	65	2	46	4	215	13	228
Adequate criticism	77	7	52	4	36	4	165	15	180
Tutorial attitude	60	48	34	31	13	34	107	113	220
Plan to ensure progression of experience	50	43	33	27	17	23	100	93	193
Stimulation of investigation	76	29	51	16	18	27	145	72	217
Careful notes made on rounds	47	37	37	24	33	15	117	76	193
Consultations with specialists	98	1	64	—	46	2	208	3	211
Encouragement of systematic study	33	72	12	55	10	37	55	164	219

The major deficiencies appear to have been in formal teaching, a true tutorial attitude, systematic planning of the residents' experience, stimulation of research, careful confirmatory notes at the time of teaching rounds, and encouragement of systematic study. The impression gained here is that there is considerable uncertainty as to the objectives of residency experience. The small extent to which systematic study is encouraged by the attending staff is particularly worthy of note. If a residency is to be a formal educational experience to qualify the individual to practice a specialty, there would appear to be need for a definite plan of study.

The resident is of course a mature graduate student and should be able to organize his study habits very much on his own initiative. In one hospital in which a plan of study had not been outlined the surgical resident was using a reading guide obtained from Tulane University. With its aid he was making a review of a series of outstanding contributions to surgical literature.

The points on which the most favorable opinions were expressed by the residents were the extent of informal instruction, adequate criticism of their work, and contact with consulting specialists.

Responsibilities given the residents. One of the most valuable aspects of the residents' education is the opportunity it provides to carry responsibility and thus more closely to approximate the situations that must be met in practice. A tabulation of replies to questions about this matter is shown in Table 56. With the possible exception of teaching of pupil nurses, the responsibilities listed would appear to be essential tasks. Worthy of special comment is the large number who carried no responsibility in the outpatient department or in the preparation of material for clinicopathological conferences.

Value of residency as a whole. The residents were ques-

TABLE 56. RESPONSIBILITIES REPORTED BY 221 RESIDENTS

RESPONSIBILITY	TEACHING HOSPITALS		AFFILIATED HOSPITALS		NONTEACHING HOSPITALS		ALL HOSPITALS		
	Yes	No	Yes	No	Yes	No	Yes	No	Total
Ward patients	87	22	58	7	43	4	188	33	221
Outpatient department patients	57	47	33	27	26	18	116	92	208
Teaching of interns*	69	37	31	29	28	14	128	80	208
Supervision of interns' work*	79	27	37	24	30	16	146	67	213
Preparation of data for clinical conferences	75	29	38	27	26	20	139	76	215
Preparation of data for clinicopathologic conferences	49	49	24	41	18	28	91	118	209
Teaching pupil nurses	43	63	12	54	8	39	63	156	219
Attendance at conferences	67	27	50	17	43	5	160	49	209

* Nine additional residents, four in affiliated and five in nonteaching hospitals, reported that there were no interns in the hospital.

tioned as to the qualitative value of their experience. Their replies are recorded as good, fair, or doubtful. In spite of the fact that some of the residencies at present available are of dubious merit, only three of the ninety residents interviewed considered their experience completely unsatisfactory.

Table 57 shows that over 80 per cent of the residencies were regarded as good in the teaching and affiliated hospitals, and little more than 60 per cent were so considered in the nonteaching hospitals. This would seem to indicate that residencies served in hospitals which are either completely or partially utilized for the teaching of medical students are more satisfactory than those in hospitals without such affiliation.

TABLE 57. OPINION OF RESIDENTS AS TO VALUE OF RESIDENCY

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
Good	35	24	11	70
Fair	5	5	7	17
Doubtful	2	1	—	3
<i>Total residents reporting</i>	42	30	18	90

Cooperation of allied hospital services. The residents were questioned also as to the degree of cooperation they had achieved with the nursing and social service departments. Coordination with the social service made a better showing than did that with the nursing service.

Difficulties with social service were concerned chiefly with subversion of its function. Instead of true medical social service, the assistance received was often confined to adjustment of fees and other matters of secondary importance.

Complaints regarding the nursing service were that the staff was too small, that personnel were inadequately trained,

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TABLE 58. INTERNSHIP PREVIOUS TO RESIDENCY REPORTED
BY 232 RESIDENTS

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	2	1	1	4
TYPE OF INTERNSHIP				
Rotating	59	34	40	133
Rotating, medicine	5	5	2	12
Rotating, surgery	4	5	2	11
Mixed	23	13	9	45
Mixed, medicine	3	1	—	4
Mixed, surgery	4	4	4	12
Mixed, gynecology and obstetrics	6	3	3	12
Straight, medicine	26	10	3	39
Straight, pediatrics	18	5	2	25
Straight, medical specialties	15	9	1	25
Straight, surgery	33	18	7	58
Straight, surgical specialties	9	11	5	25
Straight, obstetrics	6	3	1	10
Straight, other specialties	11	7	7	25
<i>Total internships</i>	222	128	86	436
LENGTH OF INTERNSHIP				
Less than 12 months	1	—	1	2
12 to 17 months	20	13	15	48
18 to 23 months	13	6	8	27
24 to 35 months	45	32	15	92
36 to 47 months	20	10	8	38
48 to 59 months	8	2	1	11
60 to 84 months	7	1	2	10
<i>Total residents reporting</i>	114	64	50	228
LOCATION OF INTERNSHIP				
New York City	121	67	45	233
Other New York state	6	11	4	21
Connecticut	8	1	5	14
Massachusetts	18	4	4	26
New Jersey	6	4	1	11
Pennsylvania	5	8	4	17
Other northeastern states	12	12	9	33
Southeastern states	17	4	4	25
Western states	16	11	2	29
Canada	9	3	5	17
Foreign	4	3	3	10
<i>Total internships</i>	222	128	86	436

NOTE. A small number of special interns serving the equivalent of assistant residencies are included.

and that some nurses had not kept up with the times. That personal factors entered only infrequently was illustrated by the uniformity of response in the individual hospitals. If one resident considered the nursing coordination of a high quality, his opinion was shared in most instances by the other residents in the hospital.

Experience and plans of residents interviewed. A great deal of discussion has arisen regarding the most desirable type of internship as a preparation for the residency. It was learned that 232 residents had had 436 internships and that of the internships, 47 per cent had been straight. From this it would seem that the straight internship preparation was given the preference in making the residency appointment, for straight internships form only a small minority of the total. Of all the internships, 78 per cent had been eighteen months or more in length. In the New York area, at least, short internships have not been looked upon with favor as a foundation for residencies. Over 50 per cent of the internships had been served in local hospitals, the remainder having been distributed quite widely throughout the rest of the country and abroad. (See Table 58.)

Statements were obtained from 189 residents as to their plans for future practice. Fifty-six, or 30 per cent, expected to enter general practice or general practice giving emphasis to their specialty. The intentions of the entire group are shown in Table 59. Twenty-two per cent intended to take further special training.

It has already been noted that there is a growing tendency for specialists to obtain their basic training by means of residencies, and to enter special practice directly. Instead of an interval of general practice with emphasis on their specialty, they have increasingly tended to limit their practice from the beginning. With this in mind, it seemed important to learn how many of the residents had been in general practice be-

TABLE 59. TYPE OF PRACTICE WHICH 189 RESIDENTS
PLAN TO ENTER

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
General practice	18	9	11	38
General practice with emphasis on a specialty	8	6	4	18
Internal medicine	6	1	—	7
Pediatrics	8	5	3	16
Chest diseases	—	1	—	1
Dermatology and syphil- ology	—	1	—	1
Neurology and psychiatry	3	1	—	4
General surgery	5	7	5	17
Ear, nose and throat	2	1	3	6
Eye	2	2	3	7
Eye, ear, nose and throat	3	2	1	6
Neurosurgery	1	—	—	1
Orthopedics	3	2	2	7
Urology	3	2	—	5
Gynecology and obstetrics	5	1	4	10
Pathology	—	1	—	1
Radiology	1	1	—	2
Further internship, resi- dency or fellowship	18	14	8	40
Abroad for study	—	1	—	1
Teaching	1	—	—	1
<i>Total residents reporting</i>	<i>87</i>	<i>58</i>	<i>44</i>	<i>189</i>

NOTE. A small number of special interns serving the equivalent of assistant residencies are included.

fore deciding to specialize. Of a group of 202 residents interviewed, only twenty-six, or 13 per cent, reported a period of practice between the internship and the residency; as an educational influence on the group this can be considered a negligible factor.

Residencies and Fellowships

TABLE 60. NUMBER OF HOURS A DAY WHICH RESIDENTS REPORTED THEY SPENT WORKING IN THE HOSPITAL

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
ON OWN RESPONSIBILITY				
None	5	1	1	7
One hour	3	1	2	6
Two hours	4	3	3	10
Three hours	4	4	2	10
Four hours	9	9	5	23
Five hours	4	6	4	14
Six hours	14	9	5	28
Seven hours	5	5	3	13
Eight hours	10	3	4	17
Nine hours	4	2	1	7
Ten hours	9	5	7	21
Eleven hours	3	3	—	6
Twelve hours	6	—	—	6
<i>Total residents reporting</i>	80	51	37	168
UNDER SUPERVISION				
None	1	1	1	3
One hour	34	20	15	69
Two hours	22	13	13	48
Three hours	14	7	1	22
Four hours	8	7	4	19
Five hours	—	1	3	4
Six hours	1	1	4	6
Seven hours	2	2	—	4
Eight hours	—	1	—	1
Nine hours	1	—	—	1
Twelve hours	—	—	1	1
<i>Total residents reporting</i>	83	53	42	178

NOTE. There are variations in the total numbers since not all the residents answered the question on the questionnaire. A small number of special interns serving the equivalent of assistant residencies are included.

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The subdivisions of the residents' day according to educational influences may be arranged according to five items: the amount of time spent working in the hospital and in the outpatient department under supervision of the attending staff; the amount of time spent working in the hospital and in the outpatient department on his own responsibility; and the average number of hours spent in study.

TABLE 61. NUMBER OF HOURS A DAY WHICH RESIDENTS REPORTED THEY SPENT WORKING IN THE OUTPATIENT DEPARTMENT

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
ON OWN RESPONSIBILITY				
None	12	8	3	23
Less than one hour	3	2	2	7
One hour	16	8	11	35
Two hours	10	1	6	17
Three hours	2	3	3	8
Four hours	—	3	—	3
Six hours	1	1	—	2
<i>Total residents reporting</i>	44	26	25	95
UNDER SUPERVISION				
None	20	6	4	30
Less than one hour	4	2	—	6
One hour	10	7	13	30
Two hours	7	5	3	15
Three hours	2	2	3	7
Four hours	—	1	—	1
Five hours	—	1	—	1
Six hours	—	1	—	1
<i>Total residents reporting</i>	43	25	23	91

NOTE. There are variations in the total numbers since not all the residents answered the question on the questionnaire. A small number of special interns serving the equivalent of assistant residencies are included.

Wide variation was found in these items. In most cases, the number of hours spent working in the hospital under the supervision of the attending staff was between one and four; time spent working alone covered a much wider range. A considerable number of residents gave no time at all to the outpatient department, either with or without supervision. For those who did work in the department, the average time was approximately one hour a day. (See Tables 60 and 61.)

Great variation was discovered in time given to study, reports ranging from no time to seven hours a day. Fifty-nine per cent averaged one hour a day. (See Table 62.)

TABLE 62. AVERAGE NUMBER OF HOURS A DAY WHICH 156 RESIDENTS REPORTED THEY SPENT IN STUDY

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	2	2	1	5
Less than one hour	7	3	3	13
One hour	36	23	21	80
Two hours	19	12	3	34
Three hours	4	4	6	14
Four hours	2	2	2	6
Five hours	1	—	—	1
Six hours	2	—	—	2
Seven hours	1	—	—	1
<i>Total residents reporting</i>	74	46	36	156

NOTE. A small number of special interns serving the equivalent of assistant residencies are included.

There was also wide variation in the number of days a week spent in the outpatient department, the range for those working in the department being from one to six days. The significant finding was that 56 per cent did not participate at all. (See Table 63.)

TABLE 63. NUMBER OF DAYS A WEEK WHICH RESIDENTS REPORTED THEY SPENT WORKING IN THE OUTPATIENT DEPARTMENT

	TEACHING HOSPITALS	AFFILIATED HOSPITALS	NONTEACHING HOSPITALS	ALL HOSPITALS
None	42	26	18	86
One day	4	1	2	7
Two days	3	2	2	7
Three days	4	3	4	11
Four days	6	2	3	11
Five days	—	3	3	6
Six days	6	13	6	25
<i>Total residents reporting</i>	65	50	38	153

NOTE. A small number of special interns serving the equivalent of assistant residencies are included.

OPINIONS OF INTERNS

The desire for additional training beyond the intern period is not limited to men who want to prepare for a specialty. Many of the men who expect to enter general practice feel the need for special training in certain subjects which were not sufficiently covered during their internship. This phase of the subject deserves the attention of those interested in medical education. It was discovered during the course of the survey that a large majority of the interns were desirous of additional hospital experience. Of 241 interns interviewed, nearly 80 per cent expected to spend three or more years in hospital training if the opportunity could be secured.

Those wishing to specialize realize that the internship does not adequately prepare them for the practice of a specialty, and they know how difficult it is to pick up the necessary knowledge at clinics and meetings after they have left the hospital. There is a growing demand, therefore, for an additional fixed period of training which will initiate them into or completely prepare them for the practice of a specialty.

THE REQUIREMENTS OF THE SPECIALTY BOARDS

The increasing importance of proper training in the specialties has been recognized by various educational agencies, the American Medical Association, the medical colleges with graduate departments, the American College of Surgeons, and the examining boards for the specialties.

The contributions each of these agencies is making to the improvement of such training necessarily have a direct effect upon the residency and upon the hospital, since the type of service offered by the residency offers one means and, it is generally thought, the best means, of securing the required training.

The American Medical Association has always been in the forefront trying to advance the standards of general medical education. By setting forth the conditions which a hospital must meet if it is to be approved for residencies, it has had direct effect upon the quality of training in the specialties.

Several medical schools and universities which maintain graduate medical teaching as integral parts of their programs offer comprehensive courses in the clinical specialties on a university basis with the award of higher degrees upon satisfactory completion of the work required—approximately three years of full-time graduate study subsequent to the internship with the preparation of an acceptable thesis. The inclusion of two years of residency or fellowship in a hospital approved by the college has become a very nearly obligatory portion of the plan. The result has been to reenforce the requirements for the residency set up by the American Medical Association.

A factor that is bound to have a great effect upon residencies and upon the plan of internships is the establishment of the examining boards for the specialties.

The purpose of these boards is to raise the standard of

medical education for those practicing a specialty. This is done by issuing a certificate to those who are able to produce satisfactory proof of adequate preparation, of good moral and ethical standing, and who are able to pass the examination. This examination is of a nature to test not only the candidate's clinical ability but also whether he has an adequate knowledge of the basic medical sciences.

The boards are organized under the joint auspices of the American Medical Association and the various national specialty societies and must meet the approval of the Advisory Board for Medical Specialties.* The following specialty boards, which have been grouped for the purpose of this study as medical, surgical, and ancillary, have been approved by the Advisory Board. The date of organization or incorporation is given in each case.

- Medical: The American Board of Dermatology and Syphilology, 1932
The American Board of Pediatrics, 1933
The American Board of Psychiatry and Neurology, 1934
The American Board of Internal Medicine, 1936
- Surgical: The American Board of Ophthalmology, 1917
The American Board of Otolaryngology, 1924
The American Board of Obstetrics and Gynecology, 1930
The American Board of Orthopedic Surgery, 1934
The American Board of Urology, 1934
The American Board of Surgery, 1937
- Ancillary: The American Board of Radiology, 1934
The American Board of Pathology, 1936

The American Board of Ophthalmology was established more than twenty years ago, and has had a marked effect in

* The Advisory Board for Medical Specialties, organized during 1933-1934 for the purpose of coordinating the certification of medical specialties in the United States and Canada, acts in an advisory capacity to such organizations as may seek its advice. It reports to the Council on Medical Education and Hospitals.

improving both the training and the quality of physicians specializing in ophthalmology. The American Board of Otolaryngology is also of long standing and was made necessary by the large number of poorly trained men who claimed to be specialists in this field. These two boards did pioneer work and the other specialties have come to realize the importance of establishing similar examining bodies in their own fields. This has resulted in the establishment of a number of additional boards in the last few years.

A number of surgical specialties are not recognized as independent specialties and for them no examining boards have been established. It is suggested that they be considered as fields of special interest for the general surgeon rather than as independent specialties, and that additional certification beyond that from the Board of Surgery be required. They are:

- Thoracic surgery
- Neurosurgery
- Traumatic surgery
- Cancer surgery
- Goiter surgery
- Plastic surgery
- Oral surgery

The Board of Internal Medicine states that additional certification may be required in the more restricted and specialized branches of internal medicine, such as gastroenterology, cardiology, metabolic diseases, tuberculosis, allergic diseases, communicable diseases.

The American Board of Anesthesiology has been affiliated with the American Board of Surgery by a recent action but has not yet been accepted by the Advisory Board for Medical Specialties.

The American Medical Association publishes yearly a list

of the physicians who have been found qualified by the examining boards. The effect of the qualification has already been marked. The American Hospital Association adopted at its 1936 meeting a resolution to the effect that in the future, hospitals should appoint to important positions on their staffs only physicians who hold such certificates. Many of the special national societies have made certification a prerequisite for membership. More and more the physicians practicing the specialties are hastening to come up for examination by the boards, and younger physicians and surgeons who are training to practice a specialty are demanding that adequate training be provided that will enable them to meet the requirements of these boards.

The specialty boards propose a new departure from the traditional modes of entering a limited practice in most of the specialties. Large numbers of the men now practicing a specialty did not have formal hospital training subsequent to the general internship, specialization being achieved through progressive limitation of general practice. Special training was obtained through appointment to the junior attending staff on a special service and subsequent promotion. The protagonists of this plan have stressed its importance in teaching self-reliance, giving a well rounded medical training, and acting as a deterrent to premature specialization.

Advocates of the new order, however, point out serious weaknesses in the traditional methods. First, general practitioners are encouraged to undertake major surgical procedures without adequate preparation. Second, basic science implications of the specialty are seriously neglected. Few men obtain the essential qualifications in the fields of anatomy, pathology, physiology, bacteriology, biochemistry, and other basic needs of the specialist. In short, there is inadequate basic training as well as insufficient opportunity to attain the neces-

sary technical skill. The plan proposed by the qualifying boards provides for the early selection of promising candidates and a concentrated period of training in the fundamentals of the specialty. Beyond this there is little difference between the two methods, the traditional and the new.

In general the requirements of these examining boards are similar, though the duration of special training and the correlation of the basic sciences vary to some extent. The candidate must have served a general internship of at least one year. Following this he must have devoted three years to concentrated instruction in his special field, of which period at least eighteen months must have been devoted to clinical duties in a hospital approved by the Council on Medical Education and Hospitals and the equivalent of one year spent on the study of basic medical sciences.

Most of the boards require two years of practice in the special field before the candidate is eligible for the qualifying examination in basic sciences and clinical, laboratory, and public health aspects of the specialty. State license to practice is therefore a prerequisite. Membership in the American Medical Association or another approved society is also an essential. The advanced clinical experience required by the boards may be obtained by the candidate during a residency or while attached to the hospital staff in another capacity. The residency may also provide the opportunity to acquire the necessary training in the basic sciences, though this training may be obtained previous to the period of purely clinical service. It would seem therefore that the hospitals are in a position to take a constructive part in the continued education of the doctor and that if they are to attract men of promise and ambition, they must so organize the work of the residents that it will definitely contribute to the advanced training in the specialties required by the boards.

The Requirements of Specialty Boards 271

The following is a summary of the *Essentials for Approved Examining Boards in Specialties*, formulated by the Council on Medical Education and Hospitals.*

Professional education

1. Graduation from an approved medical school
2. Internship of at least one year in an approved hospital

Special training

1. A period of study after the internship of not less than three years in clinics, dispensaries, hospital, or laboratories recognized by the Council to provide a satisfactory training in the special field
2. This period to include:
 - a. Intensive graduate training in anatomy, physiology, pathology, and other basic sciences
 - b. An active experience of not less than eighteen months in hospital clinics, etc., approved by the Council
 - c. Examinations in the basic medical sciences as well as in the clinical, laboratory, and public health aspects
3. An additional period of not less than two years of study and/or practice.

The list of essentials prepared by the Council includes a stipulation that a residency can qualify for a specialty only if supplemented by studies in a recognized postgraduate school or department of a medical college. As we have seen, this idea has been developed by certain of the colleges which maintain graduate departments.

Variations in the requirements of the different boards may be illustrated by a comparison of the requirements of the four medical specialties as given in the next section. While all emphasize the importance of basic science training and clinical experience, there is a lack of definition in the interpretation

* A set of standards known as *Essentials for Approved Special Examining Boards* was adopted by the Advisory Board for Medical Specialties June 10, 1934. These are practically identical with the essentials formulated by the Council on Medical Education and Hospitals.

of these terms. Such elasticity is probably necessary because of the varied facilities for training that are offered by hospitals and medical schools and the varied experience of the candidates.

ESSENTIALS OF MEDICAL RESIDENCIES

The conclusions reached by the Committee as to acceptable residencies parallel quite closely the requirements set by the qualifying boards. In some respects they exceed them.

All four of the medical specialty boards require the special training in the basic sciences and the period of clinical experience specified by the Council. The Board of Internal Medicine states that the preliminary basic science correlation may be obtained through graduate courses, junior positions in departments of physiology, biochemistry, pathology, and so forth, and in connection with the detailed study of concrete clinical problems during the internship and residency. The Pediatrics Board places emphasis on the opportunities for pathologic, bacteriologic, and similar types of correlation in connection with the study of patients. Anatomy, biochemistry, physiology, biometrics, and psychology are considered parts of the essential knowledge of the growth and development of the child. The Board of Psychiatry and Neurology simply states that the five years of special training must include basic science studies. This is also the requirement of the Board of Dermatology and Syphilology.

Required clinical training varies considerably with the different specialties. For internal medicine the requirement may be fulfilled by work in a well organized outpatient clinic, by a prolonged period of hospital residence, or by a period of preceptorship. In all instances, the need of skilled supervision is especially stressed. This period must be at least two full years in length. In pediatrics, clinical training is described as

at least a two-year service in a pediatric center, and an additional term of two years of specialized study and/or practice. Service in a pediatric center is defined as full time devoted to rounded experience in an acceptable hospital or a graduate course, which includes ward and outpatient service and both therapeutic and preventive pediatrics. In psychiatry and neurology, three years of study in recognized medical institutions are required in addition to two years of practice in the special field. In dermatology and syphilology, at least eighteen months of hospital experience in the basic medical sciences, as well as the clinical laboratory and public health aspects of the specialty, are required, in addition to two years of practice in the specialty or further continued study. This board does not clearly define the minimum amount of clinical experience which it considers desirable.

PREVIOUS INTERN EXPERIENCE

The Committee believes that in addition to graduation from a Class A medical school, there should be internship of at least two years before the beginning of a residency in either *internal medicine or its specialties*. The internship should consist of an experience with both medical and surgical cases. The Committee considers that an internship of less than two years can hardly give the basic clinical training necessary as preparation for a medical specialty. Moreover, the Committee is convinced that a definite amount of experience in surgical diagnosis, with an opportunity for observation at operation as to the correctness of the diagnosis, is an essential preliminary training for a medical specialist. In the case of preparation for *pediatrics*, the Committee feels that internships on a pediatric service can to a large extent take the place of intern experience with adults, because of the breadth of the subject in the limited age group. But even here it feels that

some intern experience with adults would be helpful. It is doubtful whether a straight internship in medicine alone is the proper preparation for any of the medical specialty residencies; particularly in internal medicine and in pediatrics, at least six months of a surgical internship should be required.

A residency in *contagious diseases* is usually taken as part of a residency in either pediatrics or medicine. Usually when it is an independent post, unassociated with a general pediatric or a general medical service, it is in a municipal, county, or state hospital existing chiefly for the treatment of communicable diseases under isolated conditions. It is the opinion of the Committee that the best preparation for such a residency should include a previous intern experience in medicine, surgery, pediatrics, otolaryngology, and if possible some experience in dermatology and ophthalmology; at least six months of training in bacteriology, serology, and pathology; and a knowledge of the state regulations in regard to quarantine and the reporting of cases and deaths.

LENGTH OF RESIDENCY

The length of a residency, whether in internal medicine or in one of the medical specialties, is affected by certain conditions which apply to all. From the standpoint of the hospital, certain administrative details fall to the resident as important duties. The opportunity for careful study of patients, for reading, research, or basic science training is cut to a minimum during the early part of a residency, while the incumbent is learning how to handle his administrative job efficiently. It is the experience of many that three months is not too long a time to allow for this period, except in hospitals where the resident is always appointed from among the senior interns or assistant residents. If the resident is to do any research, an additional time factor enters in. For unless his plans as to what

he wants to do have been formulated before the beginning of the residency and approved by the head of his service, it will easily be a month or two before any program of even the simplest study of cases can be laid out and begun. Even if it is the policy of the hospital to expect little in the way of research, it is difficult in a single year for a resident to get sufficient experience with enough patients to become well trained, for even on a large service with adequate material, the number of patients that can be studied by one person is definitely limited.

These statements are somewhat modified, as noted above, when the resident is always appointed from an assistant resident staff. It was interesting to notice, in the information gathered both here in New York and throughout the country, that the teaching hospitals were uniform in desiring at least two years for *residencies in internal medicine*, the average being three years and the maximum suggested being four years. The conviction of the Committee is that a residency experience of less than two years is an inefficient arrangement both for the hospital and as a training experience. This in spite of the fact that the majority of residency services in this field in New York City are limited to one year, even when the teaching hospitals, all requiring over two years, are included.

It was the belief of about half the pediatricians questioned throughout the country that a *residency in pediatrics* should be of two years or more; an equal number thought it should be between one and two years when it was a preparation for practice. In considering the residency as a preparation for an academic career, over three-quarters of those asked throughout the country thought that it should be for a period of two years or more, eight pediatricians in teaching hospitals mentioning five years. In New York, opinion was equally divided between one and two years.

In *neurology and psychiatry* a minimum of one year was the general idea throughout the country. Less than one-half felt that a longer period was desirable, and a few said two years or longer.

There was greater uniformity of opinion among the specialists in *dermatology and syphilology* as to a two-year minimum. Many clinicians throughout the country as well as many dermatologists in New York thought that longer time would be necessary for a person wishing to take up an academic career.

A period of one to three years was recommended by those interviewed for *residencies in chest diseases*. In the case of *communicable diseases*, a minimum of one year was the unanimous opinion. The Committee believes that this minimum is not too low a standard for educational experience when the residency is taken, as it usually is, as part of a training for pediatrics or internal medicine. There was general agreement that when such residencies were independent posts a year should be the minimum and that two or more years was desirable from the standpoint of the hospital. In this connection it was pointed out that residents on this type of service usually carry on a considerable amount of administrative work.

OPPORTUNITIES OFFERED THE RESIDENT: IN GENERAL

Duties. While the duties of the medical resident vary in different hospitals, most of the following should be a part of his responsibility: supervising the initial work-up of cases, and seeing that facts are collected promptly and reported to the proper authorities; judging the reliability of the laboratory reports, interpreting ordinary clinicopathologic findings and ordinary x-ray films and electrocardiograms. He should see that remedial measures are instituted promptly, unless there is some question as to what should be done; in that case it be-

comes his responsibility to see that his superior is notified. He should be responsible for the preparation of conferences, for checking the work of assistant residents, interns, nurses, and, in teaching services, of clinical clerks. He should act in a consulting capacity to the intern staff in the absence of the attending physician.

Outpatient experience. The residency should include a definite amount of outpatient experience. It is essential for the man who is being trained in any branch of medicine to follow the course of chronic disease as it occurs in his specialty, and to see disease in its incipient stages before it has caused enough handicap to necessitate hospitalization.

Responsibilities. If the service is large the resident may be assigned a certain number of beds of which he will be in complete charge under the chief of staff. No one should be appointed to the position of resident physician who has not had enough previous experience to be able to take a considerable amount of responsibility. Unless he is given such responsibility he cannot develop to the best of his capacity in the position. Conversely, the work of the resident must be well supervised and he should be held to strict accountability by his superior. The Committee believes that in many hospitals, particularly those in which there is not a full-time visiting staff, the resident is not given sufficient supervision and instruction by his superiors. On medical services of all kinds the visiting staff is not infrequently lax in the supervision and teaching of the resident. A residency inadequately supervised, needless to say, is wasteful of the resident's time.

Teaching. A resident who is well prepared for his work and his definite duties cannot help teaching his assistant. If there are clinical clerks on the ward, they will learn from the resident whether or not he is expected to do formal teaching. It was surprising that so many physicians interviewed (both by

questionnaire and in person) seemed to doubt the advisability of a resident taking part in a teaching program. It seemed to the Committee that these physicians think of ward teaching as a much more formal and possibly dogmatic process than is now considered the best educational practice. It is difficult to conceive of a well organized service in which, in the routine carrying out of his duties, the resident is not constantly giving instruction to interns and nurses, and particularly to clinical clerks when they are present on the ward. The Committee believes, moreover, that certain definite responsibility for instruction is a real stimulus to him.

Basic science training. Where basic science training is included in the residency, usually in the form of laboratory research carried on with patients in the hospital, the resident must be given ample time, free from interruption, to carry on this work. It is felt that some basic training should precede the term as resident, either in a laboratory of one of the pre-clinical branches of medicine or during a period of assistant residency in the hospital laboratories.

Research. Even when the residency does not include correlated work in basic medical science, it should always include studies of groups of cases and objective observations, made under controlled conditions, of various diagnostic and therapeutic procedures. Purely clinical investigation of this sort, if controlled, fosters a healthy scepticism and a spirit of inquiry.

Preparation for the academic career. There seems to be a feeling on the part of some physicians that the residency should be longer and more fundamental in character for those going on to an academic career than for those going into practice. It is the opinion of the Committee that quite the opposite should be true. The resident who is going on into academic work is usually progressing, under competent supervision, into an experience of gradually increasing responsibility. The

resident who is preparing himself for practice is left entirely to his own resources when he leaves the residency. It would seem that the latter should be the better trained at this stage.

OPPORTUNITIES OFFERED THE RESIDENT IN EACH SPECIALTY

The Committee found almost uniform agreement that the residency in *internal medicine* should include opportunities to study cases of contagious disease, diseases of the chest, neurological and psychiatric disease, diseases of the skin, and syphilis. In very large hospitals where there are services in all these specialties except contagious disease, an opportunity should be given the resident (if cases of contagious disease are not present on the general medical service) to come in contact with them at least in a consulting capacity. It was especially stressed that residents in pediatrics and dermatology should have a large amount of outpatient work.

In the case of *pediatrics*, it is emphasized that there should be special training in the normal development of the child, from the standpoint of structure and function, including psychological development, and in the prevention of the diseases of children. It was felt that the resident should carry much responsibility in the care of the prematurely born and the newborn. The subcommittee studying the question of pediatric residencies found a variety of difficulties mentioned by pediatricians all over the country. An unexpected one was the difficulty of weaning the resident away from purely clinical pediatrics, in which he tends to become intensely absorbed. Other problems were lack of laboratory facilities, conflict with obstetric services in care of the newborn, excessive case load during the winter season, limited outpatient service, antiquated buildings and equipment, lack of facilities for care of contagious cases, lack of pay for residents, and inadequate quarters for their housing.

In discussing the duties of the resident in *psychiatry*, a small minority felt that the resident should do no administrative work, since it might be dangerous because of possible legal difficulties and was unnecessary unless the resident intended to go into executive work.

A review of the opinions of specialists in *dermatology and syphilology* showed that the amount of basic science required for the development of an adequately trained man in these specialties was greater than for any of the other medical specialties. They thought that no one could be an adequately trained dermatologist without training in gross and micro-pathology, biochemistry, bacteriology, immunology, and mycology.

Qualification in the fields of *pulmonary disease* is visualized as an extra requirement in internal medicine. Many internists have limited their attention to pulmonary tuberculosis, and more recently have included other chest disorders of chronic type.

If a resident is to be adequately trained to care for chest diseases as a specialty, the Committee felt that the requirements are quite definite. In addition to fundamental clinical knowledge, he should know how to read chest x-ray films and should know the principles of technic of making x-ray exposures so that he may be able to order examinations intelligently. He should be able to operate the fluoroscope and should know a little about the electrophysics of x-rays. A thorough knowledge of technics will enable him to recognize defects and artefacts. On the laboratory side, he should know all about sputum examination and how to do special tests.

It is necessary for the resident in chest diseases to be able to visualize the larynx as well as the nasal passages, and to recognize superficial evidences of pathologic changes. He should assist at bronchoscopies, although he need not be trained as a

bronchoscopist unless he wishes to devote extra time to that phase. He should have the ability to examine the ear thoroughly, and to relate findings to those in the chest. There needs to be a recognition of the importance of infections of the accessory sinuses in pulmonary diseases.

The Committee has considered desirable conditions for residencies for the study of diseases of the chest. As a part of this investigation, thirty-three replies were received to questionnaires sent to professors of medicine and specialists in thoracic disease in various parts of the country. These replies indicate a fairly close agreement concerning the factors which enter into such residencies. The following statements are, for the most part, endorsed by representative educators and specialists consulted by the Committee:

Training may be offered in a good tuberculosis sanatorium if there is an active and intelligent staff interested in teaching; and if the institution admits patients with nontuberculous disease, there is great opportunity for offering satisfactory instruction and experience. The sanatorium has the advantage of permitting a longer period of observation and study of the ultimate results of treatment given. As a rule, however, the general hospital with a well organized special service for thoracic diseases has an advantage. In the first place, the teaching and clinical staff is likely to have a more active and broader interest in internal medicine as a whole, which is most desirable. Resident physicians in this way learn to keep a better balance in their attitude, particularly toward diagnostic problems and the treatment of special complications. Such a service has the further advantage of caring for patients with a great variety of complaints, and in this way corresponds more closely than does the sanatorium with conditions in actual practice. Such service in a teaching hospital has obvious advantages. It is rather generally agreed that

training either in the sanatorium or in a special service of a general hospital has great advantages over training in the general medical wards without special organization for this purpose. It is to be stressed that the organization and the character of the personnel are the most important factors of all.

It is generally agreed that a candidate for residency in chest diseases should have a preliminary internship, preferably in internal medicine, although a good rotating internship is sometimes acceptable. The duration of this should be at least one year and, in many instances, preferably two years. A one year's rotating internship is usually not very satisfactory.

The duration of the residency, if a man contemplates private practice soon thereafter, should be at least one year. When he plans to go into institutional work, and to accept clinical responsibilities there, it is preferable to extend the residency to at least two years. When an academic career in this specialty is contemplated, the resident training may be extended to three or five years with obvious advantages.

In addition to the usual clinical work on the wards, it is generally considered essential that the candidate spend a part of his time in the outpatient department, first, to study the diagnosis in newly admitted patients, and secondly, to follow up discharged patients. The resident may well participate in teaching activities in the service, particularly the teaching of interns. It is highly desirable that he cooperate in some definite clinical investigation during his residency, but most agree that he should not be obliged to conduct laboratory research unless he is particularly qualified and plans to follow out a career of further investigation and teaching in this branch of medicine. Residents are encouraged to write, with the inducement that meritorious articles may be published.

The opportunities in the field of thoracic diseases are growing rapidly throughout the country and there is a great need

for the thorough and sound training of young physicians in this field. Thus far the type of residency offered has in many cases been inadequate, and the qualifications of candidates have not been set at a very high level. The need is for a better quality of specialist in this field, rather than more specialists.

RESOURCES AND ESSENTIALS OF SURGICAL RESIDENCIES

CLINICAL RESOURCES

It will not be possible to furnish a sufficient number of competent surgeons to meet the needs of the population unless adequate provision is made for training them. Of primary importance is the extent of facilities available on which to base a comprehensive plan of graduate education in these fields.

Table 64 shows the resources for surgical training of house staffs in 1935 as revealed by the survey of seventy-four New York City hospitals.

TABLE 64. CLINICAL RESOURCES IN SURGERY IN NEW YORK CITY, 1935

TYPE OF HOSPITAL	NUMBER OF HOSPITALS	NUMBER OF SURGICAL BEDS		
		Ward	Semiprivate and private	Total
Government and municipal	19	5,056	—	5,056
Voluntary:				
Ward beds given separately	45	4,350	1,224	5,574
All surgical beds combined	10	—	—	898
<i>Total</i>	<i>74</i>	<i>9,406</i>	<i>1,224</i>	<i>11,528</i>

It is generally agreed that a ward service is of the greatest value in the training of interns; it is equally true of the training of residents. The reasons for this are many. Patients are

frequently admitted without a definite diagnosis, and require a complete work-up on the part of the house staff, including history, physical examination, and the necessary laboratory procedures. The informal discussion of the case with fellow members of the house staff and with the attending staff is of great value. The preoperative attention to the patient and assistance at operation, followed by the postoperative and later follow-up care in the clinic, provide invaluable training. The resident has immediate charge of the patient and feels responsible for him and, furthermore, there is the possibility of making a group study of cases and comparing the progress of similar cases at the same time.

Although ward cases are of greatest value for this purpose, nevertheless private and semiprivate surgical beds, of which more than 1,200 are listed, may also aid in the training of residents. In many hospitals both interns and residents are regarded as making an essential contribution to the diagnostic and therapeutic attention to private patients as well as to those on the wards. They are encouraged to complete a routine history and physical examination, express an opinion as to the preoperative diagnosis, assist in the operation, study the pathologic findings, and participate in the aftercare of the patient. Such experience cannot help being of great value, both from general educational considerations and from its subsequent application in private practice. However, such experience is far more valuable when there is concurrent responsibility given on both private and ward services. If the resident's time is allocated solely to the private pavilions, the training given cannot be compared in quality with that on the general wards. Records are not as well kept, and there is little spirit for participation in the fascinating game of differential diagnosis. For these reasons, the basis of a graduate surgical program must be a sufficient number of ward beds.

In an effort to clarify the situation, it was decided to consider forty surgical beds* as the minimum unit of size on which a residency plan in general surgery could be based. With this as a measuring stick, there were found to be forty-one hospitals in New York City satisfying this requirement. Twenty-three were on a voluntary basis and the remainder under municipal, state, or national control.

There is no intention to indicate that all these hospitals should, or even could, install residents. Other vitally important factors must be considered. The figures merely show that residencies are within the realm of possibility.

In addition to the needs of general surgery, consideration must be given to the surgical specialties and the separate requirements of each field. The number of ward surgical beds was distributed as follows:

General surgery	4,995
Pediatric surgery	612
Gynecology	866
Orthopedics	801
Urology	476
Otolaryngology	468
Ophthalmology	335
Ophthalmology and otolaryngology	183
Cancer	321
Other	349
<i>Total</i>	<i>9,406</i>

The above tabulation gives the total beds of each type. However, totals for all hospitals explain only resources in

* This estimate was made by the Committee independently. Of interest is the finding by the American College of Surgeons in a recent survey that each surgical resident was responsible for an average of forty to fifty patients. This report was presented at the Annual Clinical Congress of the American College of Surgeons on October 27, 1937, and appears in Report of Survey on Graduate Training for Surgery, by Melville H. Manson, M.D., in the *Bulletin of the American College of Surgeons*, vol. 23, pages 9-21, January 1938.

the aggregate. They do not show the separate hospital units into which the surgical beds are grouped, and whether some are too small to warrant a serious attempt at graduate surgical training. And, of course, it is not only the number of beds that counts, but the turnover of patients, the type and character of attending surgeons in charge and whether they are able and willing to coach young men, whether the institution has a good outpatient department in that particular specialty to supplement the ward work, whether there are good pathologic laboratory, library, x-ray department, and associated departments.

The actual number of operations performed gives a valuable index to the rate of patient turnover and the amount of surgical experience which is available for resident training. The hospitals covered by the survey reported that in 1935 there were 87,446 major operations, 155,945 minor operations, and 123,615 operations which were not separated into major and minor—a total of 367,006 operative procedures.*

There is no apparent lack of the essential ingredients needed for the training of physicians in clinical surgery. The basic deficiency has been a comprehensive and well integrated plan for their wise utilization.

ESSENTIALS OF SURGICAL RESIDENCIES

The Committee's opinion concerning conditions which affect the length of assignment and the quality of service has already been given in the section on medical residencies† and applies with equal force to the surgical residencies. Less than two years is considered insufficient, although one year may be all the hospitals of moderate size can institute. Two hospitals might cooperate to furnish the needed total of two years.

* The figures for one hospital are for 1936, as there were no figures for 1935.

† See pages 272-283.

The essential requirements of a hospital approved for surgical residencies are an active ward service, a large outpatient clinic, and opportunity for actual operative work under the supervision of attending surgeons who are interested in teaching and are unselfish in their attitude toward the younger men. There should also be adequate pathologic, bacteriologic, chemical, and roentgenologic laboratory facilities, and a well organized record room and library. These requirements are amply met in many of our endowed and municipal hospitals.

The general requirements of the specialty boards have been described on pages 266 to 272. In addition, the board for each surgical specialty has formulated specific requirements. These will be noted in connection with the Committee's report on residencies in each specialty.

General surgery. The American Board of Surgery has stipulated that there must be opportunity for adequate operative experience in which the candidate has assumed the whole responsibility, and an additional period of not less than two years of study or practice in surgery. The relation of the basic sciences of anatomy, physiology, pathology, bacteriology, and biochemistry is emphasized. Knowledge of these sciences as applied to clinical surgery will be required in the examination.

It was the recommendation of the Committee that the scope and content of the training of residents should measure up to and surpass standards required by the qualifying board in general surgery. Candidates for the residency training would be best prepared for its responsibilities by a two-year internship and a year of study in one of the preclinical laboratories in such subjects as anatomy, pathology, bacteriology, and physiology, according to the individual's previous experience and interest. The two years of the residency should be occupied in the care of ward patients and in an increasing

amount of operative experience under supervision, as the candidate shows capability and qualification. It was emphasized that merely observing operative work or holding retractors is in no sense the type of preparation or instruction that may make up a residency. For this reason residencies in private clinics or on private pavilions do not enter into the discussion.

Ophthalmology. The American Board of Ophthalmology, being the first organized, has outlined perhaps the most detailed requirements. After a degree from an acceptable medical college, candidates are required to have served an approved internship of one year, preferably on a rotating service. This must be followed by one year of special study in ophthalmology under acceptable auspices, one year as resident on an ophthalmic service, or an equal period of preceptorship under a practicing ophthalmologist, and an equal period of practical experience under competent supervision before the qualifying examination. The latter includes both practical and clinical aspects of ophthalmology, and the basic science correlations.

The specialists interviewed were not as exacting as those in general surgery as to internship preparation, one year of rotation being considered sufficient to give a comprehension of the physiology and pathology of the nervous, vascular, and muscular systems. After the internship, there should be a course of at least six months' work in the fundamentals, that is, a review of anatomy, histopathology, chemistry, and physics, to be followed by theoretical studies of refraction, muscle anatomy, and ophthalmoscopy. Following this course, there should be a two-year residency, during which the theories learned may be put into practice. The last six months may be devoted to experimental work or clinical research and the preparation of a thesis.

Otolaryngology. The American Board of Otolaryngology has also a list of criteria of some years' standing. After January 1, 1938, candidates will be required to put in a period of study after the internship of not less than three years, in clinics, dispensaries, hospitals, or laboratories recognized by the Council on Medical Education. This study will include intensive graduate training in basic sciences and active clinical experience of at least eighteen months. Furthermore, there must be two years spent in special practice. The examination will include both the basic and clinical aspects of the field.

It was the reaction of the Committee after considering replies from queries sent to specialists in this field that a three-year residency following the internship was desirable. This should include formal teaching in the departments of surgical pathology, bacteriology, and anatomy; study of the clinical problems of ward cases from a laboratory standpoint; and regular outpatient clinic work. Systematic courses of instruction in bronchoscopy and in the technics of local operations and major operations should be given by the attending surgeons. The resident should act as liaison officer between the clinical and laboratory departments.

Orthopedics. The American Board of Orthopedic Surgery requires applicants to have the following qualifications, after 1938: three years of concentrated instruction in orthopedic surgery, two years' additional experience in orthopedic surgical practice, and basic science study. Mention is also made of authorization to practice and membership in the American Medical Association or another approved society.

The minimum period of training considered necessary by the Committee to qualify a physician to practice orthopedic surgery was considered to be three years following a two-year internship. The period of residential service should be from two to three years in hospitals with large services, or

one year in hospitals with small services. In the case of one-year residencies, it is urged that hospitals arrange with each other for the exchange of residents so that adequate clinical training may be provided.

A regular educational program should be organized in connection with the residencies with a time distribution of about eighteen months assigned to clinical duties on the orthopedic service, about three months to surgical pathology, and approximately three months to roentgenology and physical therapy jointly. Also, an affiliation should be made with a medical school so that anatomical study may be provided as a part of the course. Enrollment of the residents as candidates for advanced degrees in the medical sciences should be encouraged. It is suggested that some correlation of the graduate and postgraduate teaching of orthopedic surgery in the institutions of Greater New York be obtained through the establishment of some central committee with representation from each of the hospitals engaged in such teaching activities.

Urology. The American Board of Urology at present requires only personal appearance before the Board, preparation of fifty case history abstracts of major urological cases under the candidate's own supervision, and an oral clinical and a written examination. In certain instances, only the personal appearance before the Board is required. However, after January 1, 1940, the following requirements are visualized: not less than three years of special study subsequent to the internship, in clinics, dispensaries, hospitals, or laboratories recognized by the Council on Medical Education and Hospitals. This period will include basic science training, at least eighteen months of hospital experience, and an additional period of at least two years in practice. The examination will include the basic sciences and the clinical-laboratory and public health aspects of urology.

As to residencies in urology, responses from urologists in other parts of the United States and Canada revealed the majority favoring rotating internships of one to two years' duration as preparation for the residency. Residencies of one to three years were considered essential, the larger number subscribing to the two-year term. Research was looked upon as desirable but not obligatory. Practically all emphasized the importance of pathology, either as a stated period of intensive instruction or as continued study during the residency.

The Committee was in agreement as to the desirability of a two-year residency with progression from junior to senior status. There must be active participation and instruction in the outpatient department. Urology has become one of the most highly technical branches of medicine. The aspirant for specialization in this field will be all the better for correlated instruction in diagnostic and operative instrumental urological procedures.

Gynecology. A special board of gynecology has not been set up, requirements being included under those outlined by the American Board of Obstetrics and Gynecology. These requirements have been given below under the criteria of that board, page 300.

In gynecology, the problem of determining the proper education for a specialist is complicated by the unstable relationship which this specialty bears to obstetrics. The present trend in the larger hospitals and university services is undoubtedly to combine the two specialties into one department, although in certain institutions a rigid separation of the two is maintained. It is for this reason that gynecology is given separate consideration here and discussed further in combination with obstetrics.

The minimum requirement for the hospital education of a specialist in gynecology was commonly stated by the special-

ists interviewed as three years. As in most cases it is necessary for the gynecologist to combine his work with obstetrics, it is important to work out a residency in gynecology with obstetrics in mind. Four years was given as the minimum requirement for those who intend to practice gynecology and obstetrics. In most instances the gynecologic and obstetric work will be taken as part of the same course of training and in the same institution, but it would be profitable to work out some coordination between certain gynecologic divisions and the purely obstetrical services of different institutions, so that a man beginning his training in a hospital offering only one of these two branches could complete his work satisfactorily in another.

Physicians emphasizing gynecology differed from the obstetricians as to the desirable content of the basic internship. The former favored at least six months of medicine, allowing for some technical experience with the simpler type of major surgery; training in general surgery should be stressed. Following this there should be at least six months on obstetrics and if possible six months on urology to give some experience in cystoscopy. The gynecologic residency of from one to two years should include at least six months on gynecologic pathology and an opportunity to perform a considerable number of actual gynecologic operations. There should be facilities for x-ray and radium treatment of gynecologic diseases; an outpatient department, seeing at least fifty gynecologic patients weekly and preferably with a special organization for the treatment of endocrine diseases and sterility, also a follow-up clinic for postoperative patients and, if possible, laboratory facilities for physiologic or hormone study.

Anesthesia. In the modern field of anesthesia rapid strides have been made through the introduction of new agents and avenues of induction. Selection of the proper vehicle and its

management under controlled conditions have increasingly required supervision by specially trained physicians.

An increasing number of residencies have been instituted in local hospitals through which physicians may be trained for this specialty. Sixteen such residencies located in five hospitals were encountered during the survey.

So far, only one hospital in New York City has organized a course in anesthesia of more than one year and received recognition by the Council on Medical Education and Hospitals.* This hospital has installed a two-year plan which provides for a quota of ten residents in training. It is considered highly important that the resident should have had an adequate grounding in internal medicine and in the details of operations during his internship.

Junior residents are taught the technics of anesthesia and the care of patients during the recovery period. They are taught to evaluate risks. Case work is supplemented by informal quizzes, lectures in theory, weekly review of cases, and journal club meetings. Basic science implications may be studied in the laboratories of the affiliated medical college, and include biochemistry, physiology, pharmacology, and anatomy. These studies are carried on concurrently with the clinical work.

As seniors, the residents may study regional anesthesia on the cadaver, and later with the living patient. Research has been encouraged, and animal experimentation has been arranged for at the college.

The residents are expected to act as instructors of interns during their one-month assignment to anesthesia. They are given opportunities for training in departmental organization and administration.

* During 1937 two other hospitals received approval for residencies of one year each by the Council on Medical Education and Hospitals of the American Medical Association.

After two years of residency, these men are considered competent to select and administer inhalation, rectal, intravenous, intraspinal, and regional anesthesia. They may also carry out nerve block for intractable pain, direct various forms of gas therapy, and administer resuscitation.

Ten attending anesthetists in different hospitals were interviewed and were equally divided as to the desirability of residencies. Those in favor cited the need of experienced physician assistants to aid in supervision of the interns. It was felt that a specialist in anesthesia can best be trained by means of a resident service.

Those opposed were of the opinion that nurse anesthetists and the rotating interns were able to handle the situation satisfactorily under the guidance of the attending anesthetist. Two of the latter were on a full-time basis, and in reality gave resident supervision to the house staff.

The majority of the attending anesthetists were in favor of the two-year rotating internship as a preparation for the residency.

On June 2, 1937, the affiliation of the American Board of Anesthesiology with the American Board of Surgery was completed. The plan of organization adopted was approved by the two national anesthesia societies, and certification requirements conformed in all respects with those of the examining boards of other medical specialties approved by the Council on Medical Education and Hospitals of the American Medical Association. Acceptance of the new board by the Advisory Board for Medical Specialties is still pending.

The plans for the three years of special study include intensive graduate training in anatomy, physiology, biochemistry, pharmacology, and the other basic sciences necessary to a proper understanding of the specialty. Also, there must be an active experience of not less than eighteen months in hospi-

tals, clinics, dispensaries, and diagnostic laboratories recognized by the Council as competent in the teaching and practice of anesthesiology.

Specialties requiring additional certification. Students seeking to develop themselves in the fields of thoracic surgery, neurosurgery, traumatic surgery, cancer surgery, goiter surgery, plastic surgery, or oral surgery are urged to precede their special studies by a residency in general surgery, as do general surgeons. In other words, it seems essential that these men be general surgeons first, before they venture into their specialized fields.

The training for these special fields is therefore supplemental to the residency in general surgery, rather than coincident with it. The only exception is in those general services which have a great deal of special surgery such as thoracic, traumatic, neurosurgery, and so forth, which will permit the graduate student to perfect himself in these branches as his general training continues. As a matter of fact, a candidate may select his residency with that in mind, choosing one which will offer him the kind of work he is interested in. A well trained general surgeon is one who is master of the whole surgical field. Usually, however, there are one or two or more special fields for which he has a special aptitude. Becoming a master in these may be by natural inclination and development, or it may be influenced by early special training. The man who knows early in his career along which lines he wishes to develop may therefore arrange his program accordingly. Instead of spending two years in a general surgical residency and then adding a year or two in a field of special interest, he may elect to serve only one year in a general surgical residency and spend the remaining period of training of two or more years in a specialty.

Thoracic surgery has been considered a special interest in

the field of general surgery. Its needs are very closely related to medical consideration of chest diseases. These have been considered in the section on medical residencies. Adequate facilities should be available for teaching the fundamental physiology of the chest and the natural course of the diseases treated. This presupposes good work in pathology as well as in clinical interpretation of disease. Practically all educators agree that a residency is necessary and that it should include good training in general surgery. Opinions vary a good deal as to the requirements for entering thoracic surgery, and some object to setting any minimum requirements. Two years of training are desirable, but it must be admitted that men may enter this field from various approaches and with various interests and still become well qualified.

In *neurosurgery*, the resident should be a man who desires to limit his practice to this field. Before he is appointed he should have had a thorough training in neurology and in general surgery. The time of service should not be limited to a fixed period, and the appointment should be for one or two years or more. He should be retained in that position as long as he is benefiting from his work, and as long as the neurosurgical service and the hospital are gaining as a result of his service.

Traumatic surgery is relatively a new specialty and is still in process of development. It is the belief of the Committee that what is needed at the moment is a more general recognition of the emergency type of traumatic surgery, giving the visiting as well as the house staffs special training in this field, thus affording better attention for this increasingly important type of surgery. For those on the house staff who show special aptitude, provision should be made for a residency in traumatic surgery so that they may be accredited with special

knowledge preliminary to becoming specialists in this line of general surgery.

Residencies in *cancer surgery* are for two purposes: first, to supplement the training of the prospective general surgeon; second, to contribute to the special education of the graduate who plans to devote his major time to the diagnosis and treatment of cancer. It is obvious that these two objectives may be achieved by the same plan of surgical residency, with the added provision of further special training for the future cancer specialist. Cancer has no regional limitations, and the resident must secure thorough preliminary training in general surgery, urology, and gynecology before accepting an additional residency in cancer surgery.

It is suggested that the surgeon who wishes to supplement his training by additional experience in cancer surgery may obtain an internship of six months to a year in a cancer hospital. This service would not be intended to qualify the surgeon as a cancer specialist but would improve his operative management of cancer. A residency or fellowship of three years' duration is suggested for the general surgeon who wishes to devote his entire future to the diagnosis and treatment of cancer and allied diseases. The organization of tumor clinics throughout the United States, as sponsored by the American College of Surgeons, has resulted in numerous opportunities for men with such special training. Clinical residencies or fellowships of this type have been established in cancer institutes in this country and have proved successful. Included in the three years' experience should be diagnostic methods in the outpatient department, six months' full time in the pathology laboratory, radiation therapy, and physics, and work in selected fields such as head and neck, breast, gynecologic, urologic, or gastro-intestinal services.

At the present time only one residency in *plastic surgery* is listed in the United States, at Kings County Hospital. There is, however, a growing demand for training in this branch of surgery, largely because people in increasing numbers are asking for service of this kind. The mutilations of the World War gave a tremendous impetus to the interest of the medical profession and the laity as well in the problems and possibilities of reconstructive surgery. The laity has been led, partly through fact and partly through fiction, to expect magical transformations in appearance and function of various anatomical parts.

The popular demand for plastic surgery has greatly exceeded the rate of surgical training in this field. This demand, and in some cases the pecuniary rewards involved, have induced a number of surgeons to attempt this type of work without first having acquired adequate preparation. An important branch of surgery has therefore suffered the loss of a certain amount of prestige. This is unfortunate, both for the ethical men who are doing plastic surgery and for the patients who are in need of it.

After an adequate general surgical training, an additional period of at least three years' residency or fellowship is needed to qualify the aspirant to practice plastic surgery.

Goiter surgery is so evidently a part of general surgery that no broad-minded surgeon would wish to have it developed as a separate specialty. The various types of goiter are of interest largely from the standpoint of etiology, physiology, and pathology, which belong to the domain of internal medicine. The surgical technic of the operation for goiter is not unusual, and the preoperative care and special handling of toxic cases should be the concern of every surgeon. For these reasons there seems to be no necessity for developing this branch of surgery as a specialty.

Oral surgery has been developed partly by general surgeons who favor this type of work and partly by dental surgeons. There is no doubt that in many of the technical procedures these two branches of the profession supplement each other, and their cooperation in certain cases should be encouraged. A part of oral surgery is purely dental and another part is purely surgical. In order to master both, some men prepare themselves accordingly. However, there still remains considerable difference of opinion whether this type of work should be accorded the dignity of a separate specialty. In view of the fact that nearly all malignancies of the mouth are cared for by well trained general surgeons with considerable experience in this work, and that most cases of diseases of the gums and jaws are cared for by dentists, there remain very few surgical conditions in which both are interested jointly. These are chiefly congenital malformations.

Surgical research. The question of surgical research in relation to surgical internships, and to surgical fellowships and residencies, must be approached from two distinct angles. First, if surgical research is understood to be the study of clinical material with the help of all modern aids, such as laboratories of chemistry, bacteriology, radiology, and so forth, together with the necessary library facilities, then it is self-evident that all such facilities should be perfected in any hospital, as indeed they now are in all our modern institutions. From this angle, then, surgical research is only a part, but a fundamental and essential part, of the training in general surgery or in any of its specialties. Second, if surgical research is understood to be the pursuit of surgical problems with the help of animal experimentation, then, indeed, the problem comes to lie outside the province of most of our hospitals.

In the first place, the law of New York state definitely

limits animal experimentation to those institutions operating under charters from the state as teaching institutions. In the second place, hospitals in general seldom have adequate space for animal quarters and proper operating rooms, nor have they financial provision for the maintenance of such quarters.

A further consideration is the fact that only a small proportion of men interested in surgery will be found to be interested in animal experimentation, nor is it essential that such work be included in their training. There should be in the community, however, some place or places where the few who wish to work out a problem with the aid of animal experimentation could find such opportunity. These laboratories would offer ample facility for the very few who might be interested in a purely research residency.

*ESSENTIALS OF RESIDENCIES IN OBSTETRICS
AND GYNECOLOGY*

Among the New York hospitals there are only thirteen residencies in obstetrics alone, while there are thirty in obstetrics and gynecology combined. Of the nineteen hospitals offering residencies of both types, eight are for one year only, two are for one and one-half years, four are for two years, four are for three years, and one is for four years. Ten of the hospitals provide for assistant residencies. In the others, a new start must be made each year with relatively inexperienced men unless they have obtained additional special internships.

The resources for training of residents and interns in obstetrics and gynecology in New York City are extensive. Their utilization by medical students, interns, and residents has already been taken up in connection with the section on intern training.* Where residencies could be introduced there was

* See pages 221 ff.

no apparent conflict with intern needs. In fact, the experience of both was reenforced.

The American Board of Obstetrics and Gynecology has classified applicants in two groups:

Group A. Those who have limited their practice to obstetrics and/or gynecology for a period of ten years or more, having had adequate special training. Applicants are required to pass a practical examination including clinical and pathologic aspects of the special fields.

Group B. Applicants with the following qualifications: at least one year of intern service; five years or more of practice thereafter, including at least three years of special training in obstetrics and/or gynecology, satisfactory to the board; present practice limited to obstetrics and/or gynecology. Applicants are required to pass a written as well as an oral and practical examination, and to submit fifty typewritten case reports.

In the opinion of the Board, three of the five years of special training or practice subsequent to the internship will be most easily obtained by means of a residency. The residency system is particularly adaptable to obstetric practice.

The Committee in its formulation of an ideal program for training obstetricians and gynecologists extended its requirements for the internship beyond the minimum outlined by the American Board. After graduation from a Grade A medical college, a two-year internship with at least six months assigned to obstetrics and gynecology was considered essential. This may be followed by a special internship of one year devoted solely to obstetrics and gynecology. Finally, those desiring to specialize may complete their training by a residency of at least one year in each branch of the specialty. The duration of the hospital experience subsequent to the internship would equal that required by the qualifying board.

By means of the questionnaire sent to directors of obstetric and gynecologic services in various parts of the country, it

was learned that a large majority preferred to have as residents men who had passed through a preliminary rotating internship of one to two years' duration. A considerable number advocated additional special training in obstetrics and gynecology, in surgery, and in general medicine. Estimates of desirable length of the residency ranged from one to four years. As to training in the basic sciences, an overwhelming majority stressed the need for pathology. In contrast, only a minority considered physiology, anatomy, bacteriology, and chemistry as essential, although a larger number felt them to be desirable. Only two of the directors preferred a preliminary period of practice. In most instances, residents were taken directly from the internship.

All agreed that the resident should attend antepartum, postpartum, routine gynecologic, and gynecologic follow-up clinics. Other duties mentioned as desirable were instruction of interns and students, clinical investigation, laboratory research, and publication of reports. There was unanimous sentiment in favor of residency training in the combined fields rather than in either alone.

The Committee considers that the residency in obstetrics and gynecology offers an opportunity for the development of judgment, technic, and experience to any man already well grounded in obstetrics and gynecology who has had an adequate preliminary training. The object of this training should be definitely one of specialization. The limitations of the residency may be defined as the limitations of the individual.

During a process of gradual development, more and more responsibility should be placed on such an individual. Needless to say, his work should be carefully checked and supervised by the attending staff, and he should not be allowed to attempt procedures which he has not yet been proved capable of handling. He should be made directly responsible to the

director of service when no member of the attending staff is present. He should be responsible for the control and instruction of the intern staff in the standard procedures carried out on the obstetric and gynecologic services. He should carry a similar responsibility in the outpatient department as well as on the wards. In addition to the purely clinical aspects, he should be given an opportunity to carry out work in the basic sciences. At present pathology is the field of special work most often available. In view of their importance, opportunities in bacteriology and physiology ought to be opened to these men in addition to pathology. Wherever possible, training in obstetrics should be combined with gynecology. It is the accepted opinion that such combined training is far superior to a more narrow specialization.

The Committee felt that any service caring for approximately six hundred deliveries a year could offer an opportunity for a residency in obstetrics. This appointment would not only offer more opportunity for advanced training but would be to the advantage of a service manned by interns serving a short term and to the attending staff who are remote from the hospital for a long period of time. Study of the hospitals led the Committee to think that nineteen additional residencies in obstetrics might be utilized in New York City.

*ESSENTIALS OF RESIDENCIES IN ANCILLARY
SPECIALTIES*

Under this heading may be grouped pathology, radiology, and physical therapy. These specialties share almost equally in the work of the medical and surgical services and cannot rightly be classified entirely under one or the other.

Pathology and radiology have been recognized as separate specialties by the formation of certifying boards and by cri-

teria issued by the Council on Medical Education and Hospitals of the American Medical Association. To date, similar recognition has not been given to physical therapy.

PATHOLOGY

There are four fellowships, thirteen residencies, and fourteen assistant residencies in pathology in eighteen of the hospitals in New York City. All these services were studied by personal visits to the laboratories, interviews with the staff, and attendance at staff conferences.

Objectives in pathology have not been as clearly defined as those of other special fields. Opportunities to engage in this specialty as a life work have been relatively few in number. Frequently a year's residency in pathology has been utilized as an introduction to clinical training in medicine or surgery. Those who have decided to specialize in pathology have usually obtained paid positions and have continued to extend their knowledge in connection with their routine duties.

The Council on Medical Education and Hospitals has defined a specialist in pathology as follows:* "One who is a graduate in medicine having had satisfactory training and experience in pathology, chemistry, bacteriology, or other allied subjects for at least three years subsequent to graduation, who is in good standing, and has been duly licensed to practice medicine." He is considered competent to make diagnoses only when he is a licensed graduate in medicine, has had satisfactory training and experience for at least three years subsequent to graduation from medical college, is reasonably familiar with the clinical manifestations of disease, and is competent to make reliable reports. He is expected to be on a full or part-time basis, devoting the major part of his time to

* Essentials for the Listing of Physicians Specializing in Pathology, *Journal of the American Medical Association*, vol. 99, page 1426, October 22, 1932.

this field, and to have the advantage of a well equipped laboratory.

The scope of the pathologic service is considered to include hematology, biochemistry, bacteriology, serology, tissue pathology, parasitology, metabolism, and cardiac disorders.

In *Essentials in a Hospital Approved for Residencies in Specialties** it is specified that residents in pathology must serve under a pathologist who is at least eligible for the Council's approved list of specialists in pathology. The department should provide apparatus, reagents, or materials necessary to the operation of a modern pathologic laboratory.

The educational requirements of the American Board of Pathology, effective after July 1, 1938, are similar to those of the other certifying boards as to medical school and internship preparation. The graduate experience is visualized as:

A period of study, exclusive of internship, of not less than three calendar years, exclusive of reasonable vacation periods, in an institution or pathologic department recognized by the same Council† and the Board of Trustees as competent to provide satisfactory training in the field of pathology. This period of special training preparation shall include the following:

- (a) Graduate training for one year in the various phases of clinical pathology
- (b) Training and experience of not less than two years in a department of pathologic anatomy
 - (a) and (b) may be combined or in sequence
- (c) An additional period of training or practice in pathology.

The Committee is in agreement with the requirements specified by the Council on Medical Education and Hospitals

* Prepared by the Council on Medical Education and Hospitals of the American Medical Association. Reprinted from *Journal of the American Medical Association*, vol. 100, pages 1428, 1429, May 6, 1933.

† The Council on Medical Education and Hospitals of the American Medical Association.

and the American Board of Pathology, but would consider a two-year internship of general type to be an essential foundation. This should be followed by two or more years of residency or fellowship in a hospital satisfying the criteria outlined by the council and the certifying board.

The residency should include the performance of autopsies under supervision; examination of gross and microscopic material; assistance in the preparation for and conducting of clinicopathologic conferences; assistance with special tests, including chemistry, hematology, serology, bacteriology, and blood grouping; teaching of interns and students; and the opportunity to work on a special problem. In reality, the duties of the resident pathologist complement those of the resident on the clinical services. The main difference is that the resident pathologist has no direct responsibility for patient care on the wards or in the outpatient department.

A group of thirty-seven attending pathologists in New York hospitals were interviewed, all of whom were able to satisfy the requirements of the Council on Medical Education and Hospitals. Only eleven were engaged in training residents in pathology. Nine were on a full-time basis, and the remainder were on part time. All reported that some research was being carried on. Five of their residencies were for one year only, four were for one to two years, and two were for three to four years, with assistant residencies of one to two years. All these attending pathologists were heartily in favor of the residency system. As for internship preparation, the chief preference was for two years of rotation.

Of the twenty-six pathologists in hospitals without residents, nineteen were employed full time. Seventeen believed the residencies to be the best method of specializing. The main difficulties encountered were limitation of material and inadequate equipment. There was a definite need for better

utilization of resources for training in pathology. Compared with other great medical centers, the percentage of autopsies obtained in New York hospitals has been lower than it should be. The average reported for the seventy-seven hospitals included in the survey was only 34 per cent. For effective use of clinical material, postmortem examinations should be made on from 50 to 75 per cent of all patients dying in the hospital. In this task the resident in pathology can render very valuable assistance by seeing that the family of the deceased receive a proper report of necropsy findings. Residents on the clinical services carry a primary responsibility in the securing of consent.*

In addition to the eighteen hospitals which already have residents in pathology, it was estimated that seventeen more could install them with advantage. The chief difficulty would be the necessary funds for salary and maintenance. Hospital boards have been reluctant to appropriate money for residencies in pathology, considering them among the non-essentials.

In the hospitals in which residencies in pathology are not feasible, internship periods of from six to twelve months might be considered. These could be served before or after the regular internship and would add greatly to the perspective of men entering clinical practice. There is room for vast improvement in the training of graduates in pathology, for either general or special practice.

RADIOLOGY

After January 1, 1938, the American Board of Radiology will grant certificates in radiology to those applicants found qualified to practice in one or more of the following special fields: roentgenology, diagnostic roentgenology, therapeutic

* W. J. Hoffman, Postmortem Examinations, *Journal of the American Medical Association*, vol. 101, pages 1199-1205, October 14, 1933.

radiology, therapeutic roentgenology, and radium therapy. The board has adopted the following definitions:

Radiology is that branch of medicine which deals with the diagnostic and therapeutic application of radiant energy including roentgen rays and radium.

Roentgenology is that branch of radiology which deals with the diagnostic and therapeutic application of roentgen rays.

Diagnostic Roentgenology is that branch of radiology which deals with the diagnostic application of roentgen rays.

Therapeutic Radiology is that branch of radiology which deals with the therapeutic application of roentgen rays and radium.

Therapeutic Roentgenology is that branch of radiology which deals with the therapeutic application of roentgen rays.

Radium Therapy is that branch of radiology which deals with the therapeutic application of radium.

The educational requirements for certification, like those of the other certifying boards, specify graduation from a recognized medical college, an internship of not less than one year in an approved hospital, an additional period of study after the internship of not less than three years, and an additional period of not less than two years of study and/or practice. The period of specialized study of three years in an institution or radiologic department recognized by the board as competent to provide a satisfactory training in the field of radiology shall include intensive graduate training in pathologic anatomy, radiophysics, and radiobiology; an active experience of not less than twenty-four months in a radiologic department recognized by the board and the council as capable of providing satisfactory training; and examination in the basic sciences as well as in the clinical aspects thereof.

There are twenty-seven residencies in radiology in New York City in fifteen hospitals. Ten are in roentgenology, five in radiation therapy, and twelve in radiology. Only one de-

partment had organized a three-year plan including the basic sciences required by the American Board of Radiology. Most of the attending radiologists were on a full-time basis. Their first choice as to preliminary internship was for two years of rotation, but mixed and straight services ran a close second.

In twenty-one departments without residents, most of the radiologists in charge were on a part-time basis but still were able to carry on considerable research. Slightly over half the group were in favor of installing residencies.

Considerable difficulty was reported by the attending radiologists interviewed in obtaining the desired grade of residency material. Often radiology is the candidate's second choice, after he has failed to secure a residency in medicine or surgery. This situation was attributed to the dubious future of radiology as a means of livelihood, due to the competition by badly trained men and the exploitation of radiology by hospitals for its income-producing possibilities.

In general, the plan of training has been for the students to learn by doing. They have been taught the mechanical details of x-ray machinery and the methods of film exposure, and have then been given progressive responsibility through the carrying out of barium enemas, gastric fluoroscopies, coverage of emergencies, and gradual introduction to all phases of radiology. Electrophysics is usually given in a formal course of lectures.

A great many of the departments carry on a vast amount of routine work, leaving little time for teaching the residents the theoretical aspects of the specialty. Basic science implications and investigative work by the residents have been much neglected.

The Committee is in accord with the requirements specified by the American Board of Radiology except that it feels that the period of internship should be not less than two years.

PHYSICAL THERAPY

There are no residencies in the field of physical therapy in New York City, nor were any considered feasible by the physical therapists encountered during the hospital visits. Interest in the subject was at a low ebb on the part of the house staffs. Without an undergraduate course in physical therapy it has been difficult to make the interns realize the importance of the use of physical agents in the treatment of disease.

In contrast to European centers, there has existed considerable prejudice against physical therapy on the part of the medical profession in America. In all phases of internship and graduate education it remains a field largely unexplored.

THE FUTURE OF THE RESIDENCY

As this chapter indicates, there exists confusion of thought concerning the place of residencies in graduate education. This has stemmed from divergent concepts as to the purpose of the experience. One school of thought has come to regard the residency as merely an advanced internship for the mutual benefit of the hospital and the resident. Under this arrangement, the residency has grown up more or less casually to meet the necessities of expanding and complex situations. Hence, it is not surprising that the objectives of such training have not been too clearly defined.

The other concept is of more recent origin and represents the viewpoint of the medical educator in the graduate field. It visualizes the residency experience as an educational program, covering a period of two or more years, sufficient to qualify the participant to begin the practice of a specialty. Instead of remaining merely a unit of one year of advanced training on a single service, the residency has evolved into a series of units, with planned progression from junior to senior status. Even under this more orderly system, there has not been

complete agreement as to what the content of the residency should be. In some systems, there is an open road for all the men to progress to the final year of residency responsibility; while in others it is a narrowing pathway with progressive elimination of assistant residents until finally only one individual from among several starters is left to achieve complete training.

While much remains to be done to give residencies a more definitive position, the Committee holds no brief for rigid standardization. A reasonable doubt may be registered as to the desirability of standardizing all types of hospital service or modes of specialization. Hospitals may well retain individual characteristics of proved value, and traditions which have grown up through the years cannot be lightly set aside for new procedures as yet untried. After all, worthy traditions are the mellow fruit of many years of careful husbandry on the part of the best minds of previous generations. Our chief concern is that the soil be prepared to meet the growing needs of new developments.

In this task, the residency has already become established as an essential ingredient in the program for qualifying physicians to meet the medical needs of the community. A responsibility rests upon all medical educators to aid in a better definition of its place in the hospital picture and in the field of graduate medical education.

CHAPTER TEN. Summary of Findings

SINCE internships and residencies must be considered as essential steps in medical education, it has become necessary to define more carefully their relationship to the basic medical course and to the subsequent postgraduate years.

If their schedules are to be intelligently organized, pains must be taken to integrate them with the undergraduate courses. Undergraduate education is entirely under the control of the faculties of the medical schools, and the curricula are constantly being studied and modified in order to keep abreast of progress in medical science and practice. The most any medical school can give the student is a foundation in the basic medical sciences, a knowledge of the manifestations of common diseases and the principles of therapy, a technic for examining the patient, and an understanding of scientific methods which opens the way to increasing his knowledge from the study of patients in his own practice. Except in a few instances, the medical schools have had no direct interest in the student after his graduation, and they play no role in his subsequent development. However, there has been lately an increased interest in this subject which must be continued and must be greatly increased.

The final test of the adequacy of the period of hospital service will be not merely whether the internships and residencies gear satisfactorily into the hospital program but, even more, whether the training received prepares men to become competent and reliable physicians. On these points hinges the efficacy of all proposals to make hospital experience a noteworthy contribution to education. Just because the hospital service is part of medical education, it is apparent that all criti-

cisms and efforts at reform of the medical course apply with equal force to the supplementary years of the internship and the residency.

The defects and deficiencies of internships have been pointed out by the Council on Medical Education and Hospitals of the American Medical Association and by the Commission on Medical Education; and their findings have indicated the need for the kind of intensive study here presented. Residencies have not been so critically examined in the past and so have deserved special attention during the current study. From the point of view of the medical educator, they have been considered a valuable, if not an essential, form of graduate training, serving as they do to bridge the gap between the internship and the beginning of the practitioner's career. It is necessary, therefore, to bring their place in the educational picture into clearer focus.

THE INTERNSHIP AS PREPARATION FOR PRACTICE

In order to better evaluate the internships now presented in New York City, it was decided to obtain the reactions of former interns now engaged in practice. While internships have changed somewhat during recent years, fundamental problems have remained much the same. The desired information as to the success of internship preparation as applied to conditions of practice was received in connection with an analysis of the experiences of 1,904 graduates of the five medical schools in the city. Over 90 per cent of their internships had been served in hospitals in or close to the metropolitan area. Interestingly enough, a like percentage had been practicing in the same region. Their experience therefore provided a valuable commentary on the internship situation in New York City as revealed by the present survey.

Sixty per cent of these men were engaged in general prac-

tice of various types, 38 per cent were specialists, and 2 per cent were not in practice. Approximately half of the strictly general practitioners, half of the specialists in general surgery, and half of the general practitioners attempting major surgery had had rotating internships. Significantly, nine-tenths of those doing a comprehensive general practice and those emphasizing obstetrics had served internships in which rotating plans predominated.

It is clear from these figures that the influence of the forms of internship upon the type of practice engaged in was not particularly clear-cut. The reason was at once evident when the divisions into which practice fell were closely examined. Briefly, medical practice may be compared to a spectrum, with a band of specialists at one end and a narrower band of strictly general practitioners at the other. In between lie the majority of the profession, whose work includes successive blends of varying proportions of the specialties and general practice. Manifestly, trends in internship-practice relationship would be difficult to trace.

The special phases of practice selected by the group of physicians surveyed may be used as a guide in formulation of internship plans. Of great interest is the proportion engaged in surgery and obstetrics, for nearly all interns eagerly compete for these assignments. Actually, only 56 per cent of the practitioners were doing obstetrics, and 40 per cent were performing major operations. If this may be taken as a measure of community need, it seems fair to assume that not more than half of the interns require drill in major operative techniques as a basis for further training, and that a slightly larger proportion need to participate in obstetric deliveries.

Analysis of data gathered during the survey indicated that proper utilization of hospital resources now available would give adequate training in surgery and obstetrics to just about

the proportion of the intern group above indicated. Without question, a great deal of operative surgical training is now wasted on interns who will not use it. In obstetrics, a like situation exists and it is necessary that clinical instruction be concentrated on the men who will subsequently be entrusted with the lives of parturient women.

EXPERIENCE OF PREVIOUS INTERNS

The experience of practicing physicians should serve as a valuable gauge in determining the desirable content of internships. Naturally, the criticisms of the practicing physicians who reported covered nearly every feature of the intern's life.

Many expressed the regret that more time had not been given to problems of the sort encountered in home and office practice, which could best have been studied in the outpatient clinics. This reaction reflects, for the most part, present conditions in the practice of medicine. Nine-tenths of the doctor's problems are faced in the home and office, and the small remaining fraction are seen under hospital conditions. Nonetheless, it is from a hospital experience that interns and residents must be launched into their life work, indicating the need of more emphasis on outpatient training.

About one-third of the practitioner group had criticisms to make of their internships; these were, for the most part, confined to the lack of essential items of experience, poor quality of teaching, and misplaced emphasis. In retrospect, these doctors were almost entirely concerned with the need for better educational organization of the internship and rarely with financial considerations. In fact, only four out of the 1,904 mentioned the desirability of a small salary or stipend. In their practice, judging by the trend over the years, their inclinations were away from salaried positions.

LENGTH AND ORGANIZATION OF THE INTERNSHIP

The educational organization of the internship requires a decision as to minimum duration of assignment to a single service. Herein lies the crux of our problem. How long should a block of intern assignment on one service continue in order to insure its being educationally worth while? There was agreement among the members of the Committee that all interns should have a minimum of one year on medicine and surgery, preferably divided into periods of six months each. This should prepare them for the diagnostic problems all physicians may be called upon to face.

As to obstetrics, the reactions were not so unanimous, estimates ranging from three to six months. Interestingly enough, the study of clinical resources in the city indicated that a compromise assignment of four months could be given to 60 per cent of the intern group who, presumably, might supply a sufficient number of general practitioner obstetricians to meet community needs. This would be especially true if the four months in the obstetric wards and clinics were rounded out with two months of gynecology.

As to pediatrics, the minimum assignment was set at three months. However, so few of the hospitals with rotating schedules have been able to attain this figure that it remains to be seen whether sufficient time is allotted to qualify the physician for general practice. Obviously, it would be better to extend it to six months or more, if this could be arranged.

If the desirable duration of the entire internship is set at two years, it is at once apparent that the summation of the assignments just mentioned leaves very little or no time for the other desirable elements of training. There is insufficient provision for assignment to the medical and surgical specialties, anesthesia, pathology, clinical laboratory, roentgenology,

emergency and ambulance service, outpatient department, and the private pavilion.

Hence, it is obvious that an attempt to provide blocks of adequate length comes into direct conflict with the time allowed for the average internship. Only two solutions have been possible—either lengthening the internship to three years, which has been tried in two of the hospitals, or permitting the selection of a portion of the services according to the intern's aptitude and interest. Under the latter procedure, the internship will be of the selective or mixed type. It represents a compromise between the complete rotating and the straight service. Straight internships of one-year assignments are probably ideal for the hospital's best interests but not for the young men entering practice of a general nature. They can only be justified for individuals whose minds are made up to specialize from the very beginning.

Conditions under which hospital education must operate are rapidly changing. As shown in the chart on page 38, the number of interns and residents is increasing much more rapidly than the number of hospitals or the number of beds. It appears, therefore, that the modern patient receives much more medical attention than he did in former years. Moreover, the growth in number of beds has outstripped the rate at which new hospitals have been erected, and there has been inevitable growth in hospital size, with consequent subdivision of work to achieve administrative efficiency. All these factors have favored an increasing subdivision of house staff assignment, either by means of increasingly complex rotating internships or by subdivision of the staff into prolonged straight internships.

For the majority of interns, therefore, the selective experience seems the soundest educational approach to practice.

With this arrangement, they may render efficient service to the hospital in return for training that will fit them to become competent physicians in a limited number of fields. To summarize the situation, it appears that all interns should receive basic training in the care of medical and surgical patients. Choice of fields will allow opportunity to emphasize a special interest by means of selective assignments in medicine, surgery, pediatrics, and gynecology and obstetrics. Also, time will be made available for assignment to the outpatient clinics, pathology, clinical laboratory, anesthesia, and other essential phases of training. It seems the only way out of the difficult educational position in which the rotating internship finds itself. The idea is not so revolutionary as it might seem at first glance, for selective arrangements have existed in several of the better New York hospitals for many years.

EDUCATIONAL VALUE OF THE INTERNSHIP

In making an assay of the educational content of internships it was important first to discover how far the medical schools provided an adequate preparation for this phase of training. It was of interest to learn that the American undergraduate preparation for the hospital internship was satisfactory and in general superior to the training received in European schools. With few exceptions, foreign graduates have fitted poorly into the American scheme of things.

There was general agreement among attending staffs engaged in intern training that the preparation in internal medicine, both theoretic and practical, was uniformly satisfactory. On the other hand, while training in surgical diagnosis and in the mechanism of obstetric delivery has also been good, newly appointed interns have required a great deal of additional basic teaching in the maintenance of asepsis, in the performance of minor surgical technics, and

in the care of cases in labor. In pediatrics, the problem has been complicated by the number of students who as undergraduates had failed to develop a genuine interest in the subject. For this reason, the importance of selective emphasis during the internship for those really desiring the experience was more evident in pediatrics than in the other three major fields. With certain outstanding exceptions, there was quite general agreement as to the inadequacy of the teaching given the students in the medical and surgical specialties. It was plain that the medical college curriculum and the internship program could be better coordinated.

The survey revealed how frequently the hospitals have fallen short in the responsibility of preparing new interns for their hospital opportunities and duties. In more than half, this type of instruction was only fair or doubtful in quality. A remedy of the situation depended upon better organized cooperative effort shared by hospital administrative and professional staffs.

The progress of the intern throughout his service has depended almost equally upon the initiative and vision of the intern himself and upon the leadership and guidance of the attending staff. Measured by the quality of diagnostic workup of patients, by the supervision of the interns in following outlines of procedure, and by the teaching of technics, a great deal remains to be done to place the organization of the internship on a thoroughly satisfactory educational basis. In somewhat less than half the hospitals, a great many deficiencies were noted in these particulars. A higher rating was observed in operating-room experience, while the outpatient training had the lowest score of all.

Considered by services, internal medicine was strongest in the opportunity it afforded for complete diagnostic study of new admissions and in the teaching of such laboratory cor-

relations as x-ray and electrocardiography. The weaknesses observed were in connection with the supervision of routine laboratory tests, the teaching of diagnostic and therapeutic technics, and the recording of notes by members of the attending staff in checking the interns' findings. The pediatric training given in the average rotating internship has a weak position because of the short time usually apportioned to it and because of the low index of interest in the subject on the part of the interns. Of course, the experience given the interns in pediatric houseships and in prolonged special internships has been comparable to that of any on other services of like duration.

During the period in general surgery there has been a tendency to limit the diagnostic approach to the purely surgical aspects of cases. Interns have overemphasized the importance of major operative procedures while lacking adequate preparation for participation. As in internal medicine, on services with houseships or other forms of prolonged experience, excellent training has usually been given. The diagnostic training has approached in completeness very closely to that given on the medical services.

In the average hospital the intern on obstetrics has been too much concerned with the care of bed patients and their delivery, and too little with antepartum and postpartum care. The opportunity to perform episiotomy, forceps extraction, or other operative maneuvers has been considered by the interns to be their chief objective. Adequate coverage of all essential phases of experience has not been possible during the short assignment provided in the average rotating internship.

ADJUSTMENT OF CASE LOAD

In order to insure proper standards of work and experience, other factors must be considered besides duration of as-

signment. If the number of patients cared for by the house staff is excessive, the quality of work is bound to suffer. On the contrary, if the patients are too few, the range of experience is insufficient. In general hospitals treating acute conditions, the best quality of medical attention and intern teaching was seen when the case load varied from ten to fifteen patients per house staff member. Both residents and interns were included in this calculation. Naturally, on chronic services the ratios ran higher. This brings in the factor of rate of admission, or patient turnover. In the better New York hospitals, the annual admission rate ran between two hundred and four hundred acute cases per house officer, and less than one hundred chronic cases per house officer. To make the figures fully informative, they must be broken down into calculations by individual services.

Brief consideration at once reveals that analysis of case load by services furnishes a guide by which the proper size of house staff may be checked. Trends can be observed and the staffing of new pavilions provided for. Such analysis also assists hospitals to plan for adequate house staff quarters and recreational facilities.

In connection with planning, it is necessary to take into consideration the possibility of conflicts in the demands made upon the intern's time. There may be a large number of emergency calls, an excessive amount of time spent making rounds with the attending staff on their private cases, an overload of routine laboratory work, or a vast amount of ambulance riding.

RECORD KEEPING

Education in the keeping of medical records and the use of a nomenclature should begin in the medical school and continue throughout the professional career. While all students

have been taught to write complete and systematic records of history and physical findings, few have been drilled in the use of a nomenclature. This deficiency has been carried over into the years of hospital experience with widespread indifference to the implications of carelessly recorded diagnoses. On approximately half the services in the city the quality of medical record keeping by the interns was observed to decline during their hospital service. Modern advances in organized record keeping have found their way but slowly into our hospitals. This has been particularly true of unit numbering and filing. Manifestly, adequate consideration of all aspects of the patient's health story must await the installation of such a system.

A valuable record of the extent and content of the intern's experience could be obtained if reports of their work were filed by them and by their attending staff teachers. Unfortunately, as far as New York City is concerned, such records have been almost non-existent.

HEALTH CONSERVATION

The most effective method of teaching preventive medicine to the house staff has been through the institution of adequate measures for their own health care. Just as with medical students, tuberculosis has been the problem upon which interest has been chiefly centered, although no reliable figures have existed as to incidence. However, measures directed toward general health conservation have been concerned with routine health examinations, better housing, more opportunities for out-of-door recreation, and attention to the dietary.

Intern organizations have been of service in educating their members to recognize the importance of health exami-

nations and in enlisting the interest of responsible bodies in their welfare.

HOSPITAL LIBRARIES

House staffs are stimulated to read by a variety of impulses. Besides their own native curiosity, they are influenced by the example of the attending staff, the discussion of cases on rounds, the requirements of proper case presentation at conferences, and the personal interest taken in the interns by the true preceptors on the staff.

The hospital library is an essential factor in the education of the staff. The resources of academies and medical schools do not cover the routine needs of house staffs. For this reason, it is unfortunate that barely 70 per cent of the hospitals were found to have acceptable libraries. In eight hospitals libraries did not exist. In many of the hospitals scant use was made of the resources available.

Approximately three-quarters of the interns reported an hour a day as the average time spent in study. For most of them, a range of one to three journals satisfied their requirements.

Forty-one of the seventy-seven hospitals designated one individual as librarian, but only eighteen librarians were on a full-time basis. For the remainder, various adaptations had to be made.

More than half the residents mentioned a special reading interest; and it is surprising that the proportion was not higher. However, 90 per cent carried on some systematic reading and covered a wider range of journals than did the interns.

In a few of the hospitals, journal clubs have been formed to encourage reading habits. Under proper supervision, they

have had a valuable influence on the intellectual life of the house staff.

RESIDENCIES IN THE DIFFERENT TYPES OF HOSPITAL

Residencies (and fellowships) have not yet achieved full acceptance as main channels of graduate education. This has been partly because of delay in the organization of qualifying boards in the specialties and the consequent lack of definition in the fundamentals of specialty training. Meanwhile, pioneering in residency schedules has gone on among the teaching hospitals to meet their own exacting educational requirements. It has been found that residencies elevate the quality of medical service in the hospital and improve the teaching given the interns and medical students. Moreover the residency provides an excellent opportunity for original investigation, for correlative training in the basic sciences, and for grounding in the essentials which must be included in the qualifications of a specialist.

Besides residency plans on teaching services, residents have been introduced into other hospitals to supply their divisions with senior house staff members more experienced than the interns. These men have carried considerable administrative responsibility and have received, in varying degrees, additional amounts of medical training. These appointments have usually been for one year and have not been as well related to clearly outlined educational objectives.

A third group of residencies are those encountered in the hospitals for the specialties only. They are designed to qualify the participants for the practice of a specialty and so have a definite educational objective. However, there has been little agreement as to the desirable minimum of duration and content. Facilities for basic science studies have been frequently

inadequate and there has been little or no contact with patients of general type.

THE RESIDENCY AS PREPARATION FOR PRACTICE

A review of the experience of former residents now in practice disclosed the same difficulties that were encountered in relating the internships to the subsequent career. Of the 1,904 doctors interrogated, one-fifth had served residencies ranging from one to more than three years, but it was not easy to see a definite relationship of experience to type of practice. This is apparently due to the large amount of specialty work done in connection with a general practice. Perhaps the most noticeable finding was that the residencies in the surgical specialties tended to be longer than those in the other specialties. This was true for men who strictly limited their practice as well as those who did general work as well.

There was a similar though less striking trend toward long residencies among specialists in obstetrics and gynecology, internal medicine, and pediatrics. This closely parallels the situation in the hospitals at the time of the survey. One may perhaps forecast a great shift in the pattern of the residencies with the coming years, due to the influence of the specialty boards and allied agencies of national scope. The first list of approved residencies was not issued by the American Medical Association until 1927, and a decade is too short a time to properly evaluate the entire movement. Even at the time of the present survey, the number of services offering only one year of residency exceeded the number offering a longer plan. However, the total number of men included in the latter classification was practically three times as great.

Two-thirds of the present residents consulted were determined to limit their practice to a specialty. The others in-

tended to emphasize their particular interest in a general practice with complete specialization as soon as economic considerations would permit. Where residencies have been installed, testimony as to their desirability has been almost entirely favorable on the part of attending staff members and interns. Even on services without residents, a surprising amount of sentiment was recorded in their favor.

DESIRABLE DURATION AND CONTENT OF RESIDENCIES

Residency plans have necessarily varied as to length and content, depending on educational resources, educational standards, and type of specialty. None the less, it is the belief of the Committee that minimum essentials should be better defined. It is its conviction that a residency experience of less than two years is an inefficient arrangement, both for the hospital and for the educational development of the individual. If the duration is two years or more, there is allowance of sufficient time for proper orientation and for progression of responsibility from the assistant residency to the residency. Furthermore, there is time to include a portion, at least, of the necessary basic science studies, which may be supplemented by special periods of laboratory experience.

Under these conditions, the resident participates fully in the clinical, teaching, and administrative problems of his service, and to that extent furthers his own educational development. On completion of this experience, he is placed in a position to serve his community as a competent physician and to continue his educational growth as a junior member of the attending staff of a special service.

RESOURCES AND STANDARDS OF THE RESIDENCY

If it is conceded that residencies are to play the major role in the future qualification of specialists, it still is difficult to

predict how many men should be trained to meet the need. To begin with, what the proportion of specialists to general practitioners will be in the future is still a speculative matter. Weiskotten,* in his studies of the country at large, reported in 1932 that practice limited to a specialty ranged from 40.9 to 34 per cent. In addition, there were a number of men who expressed the intention to specialize, so that the total number of possible future specialists might be as high as 70 per cent.

While these figures were drawn from analysis of practice throughout the country, it is interesting to compare them with those obtained from the graduates of the five local medical colleges. It will be recalled that 38 per cent were engaged in special practice. This was exclusive of the general practitioners who included the specialties with their general work. It may be fair to conclude that more than 40 per cent of intern groups will need to obtain residencies if a sufficient number of qualified specialists are supplied for future needs. If this proportion of the interns is given the advantage of residency training, the number of residents on duty at the time of the Committee's survey would approximately meet the needs of the situation.

However, it must not be forgotten that a considerable number of these residencies do not meet the minimum educational requirements outlined by the Committee, either as to duration or content. Moreover, judging by the rapid increase in the number of residencies being installed, it seems fair to conclude that the normal rate of increase will supply the requirements for special practice if resources are properly organized.

In any case, a material enlargement of the resident aggregation will call for appropriations for expansion of laboratory

* H. G. Weiskotten, *Tendencies toward Specialization, Proceedings of the Annual Congress on Medical Education, Medical Licensure and Hospitals, 1932, pages 60-62.*

and other educational resources, for housing, and for salary stipends.

Similar provisions are needed to elevate the standing of residencies already in existence. A great many of those in surgery and the ancillary fields need bolstering in quality. Residencies in obstetrics and gynecology enjoyed the highest rating of the survey, while medicine occupied an intermediate position.

THE TRAINING OF TEACHERS

If the resources and standards of residencies could be fostered as suggested above, the effect upon the whole body of medical education can hardly be minimized. The changes that would result would go far to remedy the most serious deficiency among hospital staffs, a deficit of trained teachers. Curiously enough, in medicine little formal effort has been made to qualify a sufficient number of its members in the art of teaching. Not infrequently, the instruction of interns and even of medical students has been left in the hands of teachers who lack an understanding of how to organize a schedule or insure educational progression of their charges.

To meet this deficit, the development of a sufficient number of residencies on a truly educational basis seems to be the best insurance for future needs. Residents and assistant residents are by the very nature of their duties drawn into the task of supervising and instructing the interns and students. Teaching habits are instilled which tend to be lifelong in their duration. Participants learn to appreciate good work, and incidentally acquire an enthusiasm to inspire a similar appreciation in others. For this task, the residency training seems an ideal medium, and should furnish the leaven for vitalizing the whole educational structure.

All thoughtful and forward-looking studies of hospital internships and residencies must arrive at the same conclusion—that their primary and essential function is educational. While they serve a useful purpose in the care of the sick in the modern highly-organized hospital, it is only by this practical, *supervised* experience that the student doctor can be qualified to assume independent responsibility for the care of patients.

APPENDIX ONE. Supplementary Tables

CERTAIN supplementary information with regard to conditions in the approved hospitals which has served as the basis for discussion at various places in the book has been assembled in tabular form for reference. It covers the following topics:

Medical colleges upon which hospitals have drawn for their house staffs (Tables 1 and 2)

Medical journals read by interns and residents (Tables 3 and 4)

Capacity and case load: beds, admissions, and census (Tables 5 through 17)

Ambulance service (Tables 18 and 19)

TABLE I. HOUSE STAFFS OF THE SEVENTY-SEVEN APPROVED HOSPITALS, BY MEDICAL COLLEGE, 1935

MEDICAL COLLEGE	RESIDENTS					INTERNS			TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	SPECIAL INTERNS		Rotating	Mixed	Straight		
			Mixed	Straight					
Arkansas									
University of Arkansas	2	-	-	-	2	-	1	5	
California									
University of California	2	-	-	1	1	-	-	4	
Stanford University	1	-	-	-	-	1	-	2	
Colorado									
University of Colorado	3	-	-	-	1	2	1	7	
Connecticut									
Yale University	13	1	4	2	8	6	3	37	
District of Columbia									
Georgetown University	5	-	-	1	32	9	1	48	
George Washington University	5	-	-	2	23	1	2	33	
Howard University	2	-	-	1	5	-	-	8	

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS		SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	Mixed	Straight	Rotating	Mixed	Straight	
Georgia								
Emory University	8	--	--	1	6	--	1	16
University of Georgia	1	--	--	--	2	--	--	3
Illinois								
Loyola University	--	--	--	1	9	--	--	10
Northwestern University	9	--	--	1	6	3	--	19
Rush Medical College	9	--	--	1	11	2	1	24
University of Chicago	3	--	1	--	2	--	--	6
University of Illinois	2	--	--	2	3	1	--	8
Indiana								
Indiana University	3	--	--	1	2	1	--	7
Iowa								
State University of Iowa	3	--	--	--	4	--	--	7
Kansas								
University of Kansas	2	1	--	1	1	--	--	5

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS			SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS		Mixed	Straight	Rotating	Mixed	Straight	
Kentucky									
University of Louisville	6	-	-	-	-	2	-	-	8
Louisiana									
Louisiana State University	1	-	-	-	-	-	-	1	2
Tulane University of Louisiana	8	-	-	1	-	6	-	-	15
Maryland									
Johns Hopkins University	18	1	4	2	-	5	5	2	37
University of Maryland	11	-	-	3	-	21	1	4	40
Massachusetts									
Boston University	3	-	-	-	-	15	-	1	19
Harvard University	29	5	-	3	-	5	17	9	68
Tufts College	9	1	-	2	-	12	2	2	28
Michigan									
University of Michigan	13	-	1	-	-	11	1	-	26
Wayne University	1	-	-	-	-	-	1	-	2
Minnesota									
University of Minnesota	6	-	1	1	-	5	-	2	15

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS			SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS		Mixed	Straight	Rotating	Mixed	Straight	
Missouri									
St. Louis University	3	-	-	2		12	-	1	18
Washington University	4	-	-	-		1	1	2	8
Nebraska									
Creighton University	2	-	-	1		11	2	-	16
University of Nebraska	6	-	2	1		3	2	2	16
New York City									
Columbia University	34	3	4	1		51	44	9	146
Cornell University	25	2	2	3		21	27	6	86
Long Island College	30	1	1	6		130	5	11	184
New York Medical College	11	-	-	-		70	1	3	85
New York University	36	1	1	9		139	28	7	221
New York State									
Albany Medical College	2	-	2	-		8	3	2	17
University of Buffalo	5	-	-	-		5	-	2	12
University of Rochester	6	-	2	1		5	-	-	14
Syracuse University	10	-	-	2		17	1	-	30

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS			SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS		Mixed	Straight	Rotating	Mixed	Straight	
North Carolina									
Duke University	3	-	2	-		3	1	2	11
Ohio									
University of Cincinnati	5	-	1	-		3	-	-	9
Western Reserve University	6	1	2	-		1	-	1	11
Ohio State University	4	-	-	2		5	1	-	12
Oklahoma									
University of Oklahoma	1	-	-	-		2	1	1	5
Oregon									
University of Oregon	2	-	1	1		-	-	-	4
Pennsylvania									
Hahnemann Medical College	3	-	-	-		1	-	-	4
Jefferson Medical College	11	-	1	1		8	1	-	22
Temple University	4	-	-	-		2	-	-	6
University of Pennsylvania	15	-	-	-		6	3	-	24
Women's Medical College	4	-	-	-		1	2	-	7
University of Pittsburgh	5	-	-	1		-	-	-	6

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS			SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS		Mixed	Straight	Rotating	Mixed	Straight	
South Carolina									
Medical College of the State of South Carolina	4	-	1	-		2	-	-	7
Tennessee									
University of Tennessee	1	-	-	-		9	3	2	15
Meharry Medical College	1	-	-	-		-	-	-	1
Vanderbilt University	3	-	1	-		2	-	-	6
Texas									
Baylor University	4	1	-	-		1	-	-	6
University of Texas	5	-	2	1		3	-	-	11
Vermont									
University of Vermont	2	-	-	-		5	1	-	8
Virginia									
University of Virginia	9	-	-	1		3	1	2	16
Medical College of Virginia	10	1	-	1		6	1	-	19

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS				Rotating	INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	SPECIAL INTERNS Mixed Straight			Mixed	Straight	
Wisconsin								
University of Wisconsin	2	-	1	-	1	-	-	4
Marquette University	3	-	-	-	2	-	-	5
<i>Total United States</i>	<i>459</i>	<i>19</i>	<i>37</i>	<i>61</i>	<i>739</i>	<i>182</i>	<i>84</i>	<i>1,581</i>
Canada								
338 University of Alberta	1	-	-	-	-	-	-	1
Dalhousie University	1	-	-	-	2	-	-	3
Queen's University	6	-	-	1	3	3	-	13
University of Western Ontario	2	-	-	-	2	-	1	5
University of Toronto	12	-	-	1	2	-	1	16
McGill University	10	1	-	2	6	4	4	27
University of Montreal	-	-	-	1	-	-	-	1
<i>Total Canada</i>	<i>32</i>	<i>1</i>	<i>-</i>	<i>5</i>	<i>15</i>	<i>7</i>	<i>6</i>	<i>66</i>
Austria								
University of Vienna	1	-	-	-	7	-	1	9
Brazil								
University of Rio de Janeiro	1	-	-	-	-	-	-	1

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS		SPECIAL INTERNS			INTERNS		TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	Mixed	Straight	Rotating	Mixed	Straight	
England								
Cambridge University	1	-	-	-	1	-	-	2
King's College	-	-	-	-	2	-	-	2
St. Mary's	-	-	-	-	-	1	-	1
France								
University of Paris	1	-	-	-	1	-	-	2
Germany								
Berlin	1	-	-	-	6	1	-	8
Breslau	1	-	-	-	1	-	1	3
Rostock	1	-	-	1	1	-	-	3
Wurzburg	-	-	-	-	-	-	1	1
Frankfort	1	-	-	-	2	-	-	3
Heidelberg	-	-	-	-	1	-	-	1
Königsberg	-	-	-	-	1	-	-	1
Hungary								
Budapest University	1	-	-	-	-	-	-	1

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS				INTERNS			TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	SPECIAL INTERNS		Rotating	Mixed	Straight	
			Mixed	Straight				
Ireland								
National University of Ireland	2	-	-	-	-	-	-	2
Italy								
Bologna	-	-	-	-	1	-	-	1
Naples	-	-	-	-	7	1	-	8
Padua	-	-	-	-	1	-	-	1
Palermo	1	-	-	-	-	-	-	1
Rome	1	-	-	-	12	-	-	13
Turin	1	-	-	-	-	-	-	1
Scotland								
Aberdeen	-	-	-	-	1	-	-	1
Anderson College	-	-	-	-	1	-	-	1
Glasgow	2	-	-	-	1	-	2	5
Edinburgh	4	-	-	-	6	-	1	11
St. Andrews	5	-	-	-	15	-	-	20

TABLE I (continued)

MEDICAL COLLEGE	RESIDENTS				INTERNS			TOTAL
	AND FELLOWS	PRIVATE ASSISTANTS	SPECIAL INTERNS		Rotating	Mixed	Straight	
			Mixed	Straight				
Switzerland								
University of Bern	2	-	-	-	15	-	-	17
University of Zurich	-	-	-	-	6	-	-	6
University of Geneva	-	-	-	-	2	-	-	2
University of Lausanne	1	-	-	-	-	-	-	1
Syria								
American University of Beirut	1	-	-	-	2	-	-	3
<i>Total Foreign</i>	29	-	-	1	93	3	6	132
<i>Grand Total</i>	520	20	37	67	847	192	96	1,779

TABLE 2. NUMBER OF RESIDENTS AND INTERNS FROM EACH MEDICAL COLLEGE IN FIVE LARGE NEW YORK HOSPITALS, 1935

MEDICAL COLLEGE	BELLE- VUE	KINGS COUNTY	METRO- POLITAN	NEW YORK	PRESBY- TERIAN
University of California	1	—	—	—	—
Stanford University	—	—	—	1	1
University of Colorado	—	—	—	3	1
Yale University	2	6	—	6	5
Georgetown University	2	4	—	—	—
George Washington University	—	3	1	—	—
Emory University	3	—	1	1	—
University of Georgia	—	2	—	—	—
Loyola University	—	1	—	—	—
Northwestern University	—	5	1	1	—
University of Chicago, Rush	1	4	1	—	—
University of Chicago	1	—	1	—	—
University of Illinois	1	—	—	—	—
University of Indiana	1	—	—	—	1
State University of Iowa	—	1	1	—	1
University of Louisville	1	—	—	—	—
Tulane University of Louisiana	—	1	1	2	1
Johns Hopkins University	3	1	—	14	10
University of Maryland	—	3	3	—	—
Boston University	1	1	—	—	—
Harvard University	4	3	—	10	12
Tufts College	2	6	3	—	—
University of Michigan	2	—	2	—	1
University of Minnesota	1	5	—	—	—
St. Louis University	1	2	—	—	—
Washington University	1	—	—	1	—
Creighton University	1	—	1	—	—
University of Nebraska	3	2	—	1	1
Albany Medical College	2	—	—	—	1
University of Buffalo	—	2	—	—	—

TABLE 2 (continued)

MEDICAL COLLEGE	BELLE- VUE	KINGS COUNTY	METRO- POLITAN	NEW YORK	PRESBY- TERIAN
University of Rochester	1	1	—	1	2
Syracuse University	1	2	1	1	1
Columbia University	18	3	—	8	27
Cornell University	18	4	1	18	2
Long Island College	1	25	4	—	—
New York Medical College	—	3	18	—	—
New York University	38	13	3	1	—
Duke University	—	1	—	2	—
University of Cincinnati	—	1	—	3	1
Western Reserve University	1	—	—	1	4
Ohio State University	3	1	2	—	—
University of Oklahoma	1	—	—	—	—
University of Oregon	—	—	—	—	1
Jefferson Medical College	1	3	1	1	1
Temple University	—	—	1	—	—
University of Pennsylvania	1	2	1	1	1
University of Pittsburgh	—	—	—	2	—
Medical College South Carolina	1	—	—	—	1
University of Tennessee	—	1	—	1	—
Vanderbilt University	1	—	—	—	—
Baylor University	2	—	—	—	—
University of Texas	1	4	—	2	—
University of Vermont	—	—	—	—	1
University of Virginia	2	1	—	—	—
Medical College Virginia	2	1	3	—	—
Canada					
Dalhousie University	—	1	1	—	—
Queen's University	—	1	—	1	2
University Western Ontario	—	—	—	1	—
University of Toronto	1	—	1	—	2
McGill University	3	2	—	3	2

Appendix One

TABLE 2 (continued)

MEDICAL COLLEGE	BELLE- VUE	KINGS COUNTY	METRO- POLITAN	NEW YORK	PRESBY- TERIAN
Foreign					
Berlin	—	—	1	—	—
Breslau	—	—	1	—	—
Rostock	—	—	—	1	—
Wurzburg	—	1	—	—	—
Naples	—	1	—	—	—
Glasgow	2	—	1	—	—
Edinburgh	—	1	1	—	—
St. Andrews	—	—	4	—	—
<i>Total</i>	133	125	61	88	83

TABLE 3. THE MEDICAL JOURNALS THAT 211 INTERNS REPORTED THEY FOLLOWED SYSTEMATICALLY

	NUMBER OF INTERNS FOLLOWING JOURNALS IN			
	Teaching hospitals	Affiliated hospitals	Nonteaching hospitals	All hospitals
Journal American Medical Association	41	61	100	202
Surgery, Gynecology & Obstetrics	20	21	47	88
American Journal of the Medical Sciences	9	9	21	39
Archives of Internal Medicine	9	10	7	26
Annals of Surgery	3	9	12	24
Archives of Disease of Childhood	1	3	7	11
New York State Journal of Medicine	—	1	8	9
American Journal of Surgery	1	1	6	8
Medical Clinics of North America	2	3	2	7
New England Journal of Medicine	2	—	3	5
Annals of Internal Medicine	1	1	2	4
Archives of Pediatrics	2	1	1	4
Journal of American Institute of Homeopathy	3	—	1	4
American Heart Journal	1	1	1	3
American Journal of Obstetrics & Gynecology	—	1	2	3
Archives of Pathology	2	1	—	3
Archives of Surgery	1	1	1	3
Archives of Neurology & Psychiatry	—	1	2	3
Journal of Pathology & Bacteriology	1	—	2	3
Journal of Bone & Joint Surgery	—	—	3	3
Journal of Experimental Medicine	—	2	—	2
Journal of Obstetrics & Gynecology of the British Empire	1	—	1	2
Lancet	—	2	—	2
American Review of Tuberculosis	1	—	—	1
Archives of Otolaryngology	—	—	1	1
British Medical Journal	—	—	1	1
Canadian Medical Association Journal	—	1	—	1
Endocrinology	—	1	—	1
International Clinics	—	—	1	1
Journal of Clinical Investigation	—	1	—	1
Journal of Laboratory & Clinical Medicine	—	—	1	1
Journal of Physiology Medicine	—	—	1	1
Medical Economics	—	—	1	1
Medical Record	—	—	1	1

TABLE 4. THE MEDICAL JOURNALS THAT 182 RESIDENTS REPORTED THEY FOLLOWED SYSTEMATICALLY

	NUMBER OF			
	Teaching hospitals	Affiliated hospitals	Nonteaching hospitals	All hospitals
Journal of American Medical Association	55	32	29	116
Surgery, Gynecology & Obstetrics	24	16	21	61
American Journal of Diseases of Children	11	8	6	25
American Journal of the Medical Sciences	10	7	4	21
Archives of Pathology	7	6	6	19
American Journal of Obstetrics & Gynecology	7	3	8	18
Annals of Surgery	7	8	3	18
Archives of Surgery	4	7	4	15
Archives of Internal Medicine	6	4	5	15
American Journal of Surgery	8	2	5	15
Archives of Pediatrics	8	3	3	14
Archives of Otolaryngology	4	4	4	12
American Journal of Roentgenology	6	4	—	10
Journal of Bone & Joint Surgery	3	5	2	10
Archives of Neurology & Psychiatry	6	1	1	8
Archives of Disease of Childhood	4	2	1	7
Archives of Ophthalmology	3	1	3	7
Bulletin American College of Radiology	3	3	1	7
Medicine	3	2	2	7
American Review of Tuberculosis	1	5	—	6
Journal of Urology	3	2	1	6
Journal of Nervous & Mental Disease	3	2	1	6
Brain	4	—	1	5
Laryngoscope	—	1	4	5
Radiology	4	1	—	5
American Heart Journal	4	—	1	5
Journal of Pediatrics	2	2	1	5
Journal of Thoracic Surgery	1	4	—	5
New England Journal of Medicine	2	3	—	5
American Journal of Ophthalmology	2	1	1	4
Archives of Dermatology & Syphilology	1	3	—	4
Annals of Otolaryngology, Rhinology & Laryngology	3	1	—	4
American Journal of Psychiatry	2	1	—	3
Journal of Clinical Investigation	3	—	—	3
Journal of Laboratory & Clinical Medicine	1	2	—	3

TABLE 4 (continued)

	NUMBER OF			
	Teaching hospitals	Affiliated hospitals	Nonteaching hospitals	All hospitals
American Journal of Cancer	1	1	—	2
Annals of Internal Medicine	1	1	—	2
British Medical Journal	2	—	—	2
British Journal of Medical Psychology	1	—	1	2
British Journal of Surgery	1	—	1	2
Journal of American Institute of Homeopathy	2	—	—	2
Journal of Immunology	1	—	1	2
Journal of Laryngology & Otology	2	—	—	2
Lancet	1	—	1	2
Medical Clinics of North America	—	—	2	2
New York State Journal of Medicine	1	—	1	2
American Journal of Pathology	1	—	—	1
American Journal of Clinical Pathology	1	—	—	1
American Medicine	1	—	—	1
American Journal of Physiology	1	—	—	1
British Journal of Radiology	—	1	—	1
British Journal of Tuberculosis	—	1	—	1
Canadian Medical Association Journal	—	1	—	1
International Surgical Digest	1	—	—	1
Journal of Allergy	—	1	—	1
Journal of Experimental Medicine	1	—	—	1
Journal of Obstetrics & Gynecology of the British Empire	1	—	—	1
Journal of Pathology & Bacteriology	1	—	—	1
Ohio State Medical Journal	—	—	1	1
Psychoanalytic Quarterly	1	—	—	1
Tubercle	—	1	—	1
Urologic & Cutaneous Review	—	1	—	1
Acta Radiologica	—	1	—	1
Annales d'Anatomie Pathologique	—	—	1	1
Encephale	—	—	1	1
Presse Medicale	—	—	1	1
Revue Neurologique	—	—	1	1
Zentralblatt für die gesamte Neurologie und Psychiatrie	—	—	1	1

TABLE 5. NUMBER OF BEDS IN SEVENTY-SEVEN HOSPITALS
APPROVED FOR INTERNSHIPS OR RESIDENCIES
IN NEW YORK CITY, 1935

In voluntary hospitals	19,030
In municipal hospitals	13,787
Ward beds	26,792
Semiprivate and private	5,571
Not separated	454
Surgical beds	11,528
Medical beds	15,814
Obstetric beds	2,776
Service not specified	2,699
<i>Total beds</i>	<i>32,817</i>

TABLE 6. DISTRIBUTION BY NUMBER OF BEDS OF SEVENTY-SEVEN
HOSPITALS APPROVED FOR INTERNSHIPS OR RESI-
DENCIES IN NEW YORK CITY, 1935

NUMBER OF BEDS	NUMBER OF HOSPITALS
Under 100	2
100 to 199	18
200 to 299	23
300 to 399	10
400 to 499	8
500 to 599	6
600 to 999	3
1,000 to 1,999	5
2,000 or more	2
<i>Total hospitals</i>	<i>77</i>

NOTE. Bassinets are not included.

TABLE 7. DISTRIBUTION BY NUMBER OF WARD BEDS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS AND RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF WARD BEDS	NUMBER OF HOSPITALS
Under 50	1
50 to 99	8
100 to 149	18
150 to 199	10
200 to 249	5
250 to 299	5
300 to 349	7
350 to 399	2
400 to 449	2
450 to 499	2
500 to 549	2
550 to 599	3
600 to 999	2
1,000 to 1,999	4
2,000 or more	2
Not specified	4
<i>Total hospitals</i>	77

TABLE 8. DISTRIBUTION BY NUMBER OF SEMIPRIVATE AND PRIVATE BEDS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS AND RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF SEMIPRIVATE AND PRIVATE BEDS	NUMBER OF HOSPITALS
None	22
1 to 24	2
25 to 49	7
50 to 74	11
75 to 99	9
100 to 124	8
125 to 149	2
150 to 174	5
175 to 199	2
200 to 299	3
300 to 399	2
Not specified	4
<i>Total hospitals</i>	77

TABLE 9. DISTRIBUTION BY NUMBER OF BASSINETS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF BASSINETS	NUMBER OF HOSPITALS
None	22
1 to 9	2
10 to 19	4
20 to 29	4
30 to 39	15
40 to 49	7
50 to 59	9
60 to 69	3
70 to 79	2
80 to 89	4
90 or more	5
<i>Total hospitals</i>	77

TABLE 10. DISTRIBUTION BY NUMBER OF DELIVERIES OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF DELIVERIES	NUMBER OF HOSPITALS
None	22
Under 100	2*
100 to 199	1
200 to 299	4
300 to 399	1
400 to 499	1
500 to 599	3
600 to 999	17
1,000 to 1,999	21
2,000 or more	5
<i>Total hospitals</i>	77

* These hospitals did not list regular obstetric services; they reported 5 and 3 deliveries.

TABLE I I. DISTRIBUTION BY NUMBER OF NEWBORN OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF NEWBORN	NUMBER OF HOSPITALS
None	22
1 to 249	5
250 to 499	5
500 to 749	9
750 to 999	9
1,000 to 1,249	6
1,250 to 1,499	9
1,500 to 1,749	4
1,750 to 1,999	4
2,000 or more	4
<i>Total hospitals</i>	77

TABLE I 2. DISTRIBUTION BY NUMBER OF ADMISSIONS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF ADMISSIONS	NUMBER OF HOSPITALS
Under 1,000	4
1,000 to 1,999	5
2,000 to 2,999	10
3,000 to 3,999	8
4,000 to 4,999	10
5,000 to 5,999	10
6,000 to 6,999	4
7,000 to 7,999	6
8,000 to 8,999	7
9,000 to 9,999	1
10,000 to 14,999	7
15,000 to 19,999	3
20,000 or more	2
<i>Total hospitals</i>	77

TABLE 13. DISTRIBUTION BY NUMBER OF WARD ADMISSIONS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF WARD ADMISSIONS	NUMBER OF HOSPITALS
Under 1,000	4
1,000 to 1,999	6
2,000 to 2,999	16
3,000 to 3,999	9
4,000 to 4,999	6
5,000 to 5,999	6
6,000 to 6,999	2
7,000 to 7,999	4
8,000 to 8,999	2
9,000 to 9,999	1
10,000 to 12,499	4
12,500 to 19,999	4
20,000 or more	2
Not specified	11
<i>Total hospitals</i>	77

TABLE 14. DISTRIBUTION BY NUMBER OF SEMIPRIVATE AND PRIVATE ADMISSIONS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

NUMBER OF SEMIPRIVATE AND PRIVATE ADMISSIONS	NUMBER OF HOSPITALS
None	22
1 to 499	6
500 to 999	8
1,000 to 1,499	9
1,500 to 1,999	5
2,000 to 2,499	6
2,500 to 2,999	2
3,000 to 3,999	3
4,000 to 4,999	2
5,000 to 5,999	3
Not specified	11
<i>Total hospitals</i>	77

TABLE 15. DISTRIBUTION BY AVERAGE, SMALLEST, AND LARGEST
DAILY CENSUS OF SEVENTY-SEVEN HOSPITALS APPROVED FOR
INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

DAILY CENSUS	NUMBER OF HOSPITALS WITH EACH SPECIFIED DAILY CENSUS		
	Average	Smallest	Largest
Under 100	5	12	1
100 to 149	12	14	7
150 to 199	14	15	9
200 to 249	4	9	13
250 to 299	7	6	10
300 to 349	2	1	5
350 to 399	3	5	5
400 to 449	2	2	4
450 to 499	3	—	3
500 to 999	5	3	9
1,000 to 1,999	3	2	3
2,000 or more	2	2	2
Not specified	15	6	6
<i>Total</i>	77	77	77

TABLE 16. DISTRIBUTION BY PERCENTAGE OCCUPANCY OF SEVENTY-SEVEN HOSPITALS APPROVED FOR INTERNSHIPS OR RESIDENCIES IN NEW YORK CITY, 1935

PER CENT OCCUPANCY	NUMBER OF HOSPITALS
Under 50	2
50 to 54	5
55 to 59	2
60 to 64	8
65 to 69	8
70 to 74	11
75 to 79	8
80 to 84	5
85 to 89	8
90 to 94	4
95 to 99	7
100 or more	6
Not specified	3
<i>Total hospitals</i>	77

TABLE 17. ANALYSIS OF CASE LOAD

SERVICE	HOUSE STAFF		BASIC DATA			RATIO: ONE STAFF MEMBER TO					
	Total	In- terns only	Beds	Average daily census	Annual admis- sions	Beds		Average daily census		Annual admissions	
		Total				In- house staff	Total	In- house staff	Total	In- house staff	
<i>Municipal Hospital with Ambulance Service, Caring for Both Acute and Chronic Cases</i>											
All services	63	46	1,367‡	1,397	11,528	22	30	22	30	183	251
	50*	34†				27	40	28	41	231	339
Surgery: Acute	13	9	165	125	3,865	13	18	10	14	276	386
Surgery: Chronic	1	1	70	75		70	70	75	75		
Medicine: Acute	8	6	105	92	2,682	13	17	11	15	268	335
Medicine: Chronic	2	2	138	173		69	69	86	86		
Pediatrics	6	5	220	143	1,133	37	44	24	29	189	227
Children's Surgery	1	1	22	23	313	22	22	23	23	313	313
Obstetrics and gynecology	6	4	98	73	2,064	16	24	12	18	344	516
Neurology	3	2	178	212	181	59	89	71	106	60	90
Genito-urinary, venereal, and dermatology	3	2	83	76	681	28	41	25	38	227	340
Tuberculosis	7	2	270	405	609	39	135	58	202	87	304

* Excludes one resident on pathology; and 2 interns on pathology, 2 on radiology and anesthesia, 4 on ambulance, and 4 on dispensary.

† Excludes 2 interns on pathology, 2 on radiology and anesthesia, 4 on ambulance, and 4 on dispensary.

‡ Includes 18 admitting beds.

TABLE 17. ANALYSIS OF CASE LOAD (continued)

SERVICE	HOUSE STAFF		BASIC DATA			RATIO: ONE STAFF MEMBER TO					
	Total	In- terns only	Beds	Average daily census	Annual admis- sions	Beds		Average daily census		Annual admissions	
						Total house staff	In- terns only	Total house staff	In- terns only	Total house staff	In- terns only
<i>Voluntary Hospital with Very Active Ambulance Service</i>											
All services	12	8	161†	142	3,511	13	20	12	18	293	439
	10*	6*									
Surgery	4	3	61	70	1,719	15	20	17	23	430	573
Medicine	2	1	23	37	579	11	23	18	37	289	579
Pediatrics	2	1	14	9	291	7	14	4	9	145	291
Obstetrics	2	1	27	26	922	13	27	13	26	461	922
<i>Voluntary Hospital without Ambulance Service</i>											
All services	8	8	425	243	5,063	53	53	30	30	633	633
Medicine	6	6	425	90	1,077	53	53	15	15	179	179
Surgery	2	2									

* Excludes one intern on accident and one on ambulance.

† Includes 36 beds not assigned to services.

TABLE 17. ANALYSIS OF CASE LOAD (*continued*)

SERVICE	HOUSE STAFF		BASIC DATA			RATIO: ONE STAFF MEMBER TO					
	Total	In- terns only	Beds	Average daily census	Annual admis- sions	Beds		Average daily census		Annual admissions	
		house staff		In- terns only	Total house staff	In- terns only	Total house staff	In- terns only	Total house staff	In- terns only	
<i>Municipal Hospital with Ambulance Service</i>											
All services	130 119*	97 89†	3,040	2,872	53,568	{ 23 26	31 34	22 24	30 32	412 450	552 602
Surgery	28	22									
Medicine	34	30	845	870	11,034	25	28	26	29	325	368
Pediatrics	11	7	125	128	2,742	11	18	12	18	249	392
Obstetrics	8	6	120	104	3,474	15	20	13	17	434	579
Gynecology	8	6	150	93	3,750	19	25	12	15	469	625
Neurology	6	4	385	362	4,139	64	96	60	90	690	1,035
Psychiatry	1	-	125	102	4,037	125	-	102	-	4,037	-
Otolaryngology and ophthalmology	5	3	75	70	3,774	15	25	14	23	755	1,258
Urology	8	6	80	69	1,811	10	13	9	11	226	302
Orthopedics	5	3	150	174	1,183	30	50	35	58	237	394
Dermatology and venereal	2	1	130	132	1,633	65	130	66	132	816	1,633
Tuberculosis	3	1	200	192	2,612	67	200	64	192	871	2,612

* Excludes one resident on x-ray, one on emergency and dispensary, and one on chronic services; and 2 interns on x-ray, 3 on anesthesia, and 3 on ambulance.

† Excludes 2 interns on x-ray, 3 on anesthesia, and 3 on ambulance.

TABLE 17. ANALYSIS OF CASE LOAD (*concluded*)

SERVICE	HOUSE STAFF		BASIC DATA			RATIO: ONE STAFF MEMBER TO					
	Total	In- terns only	Beds	Average daily census	Annual admis- sions	Beds		Average daily census		Annual admissions	
						Total house staff	In- terns only	Total house staff	In- terns only	Total house staff	In- terns only
<i>Hospital for Chronic Cases</i>											
All services	31	11	712§	685	1,935	23	65	22	62	62	176
	24*	8†									
Private pavilion	1	—	62	47	553	62	—	47	—	553	—
Surgery	5	2	107	141	429	21	53	28	70	86	214
Medicine	6	2	146	173	402	24	73	29	86	67	201
Neurology	6	2	112	157	152	19	56	26	78	25	76
Tuberculosis	5	2	164	160	367	33	82	32	80	73	183
Dermatology	1	—	10	7	32	10	—	7	—	32	—
<i>Eye and Ear Hospital</i>											
All services	15	—	170	103	5,355	11	—	7	—	357	—
Otolaryngology	8	—	170	48	2,658	11	—	6	—	332	—
Ophthalmology	7	—									
<i>Hospital Not Approved by the American Medical Association</i>											
All services†	4	—	115	100	3,587	29	—	25	—	897	—

* Excludes 2 residents on radiotherapy, one on pathology, one on neuropathology; and 3 interns on pathology.

† Excludes 3 interns on pathology.

‡ All private and semiprivate.

§ Includes 111 beds for custodial cases.

TABLE 18. AMBULANCE SERVICE IN TWO HOSPITALS: CAUSE AND DISPOSITION OF CALLS FOR INJURIES, JULY, 1936

INJURY	MUNICIPAL HOSPITAL		VOLUNTARY HOSPITAL			
	Number Treated	Number Removed to Own Hospital*	Number Treated	Own Hospital	Number Removed to Municipal Hospital	Other Voluntary Hospitals
Abdominal Injury	—	3	—	—	—	—
Bullet Wound	—	1	—	—	—	—
Burns and Scalds	7	1	2	—	1	—
Burns, Electric	—	—	4	—	—	—
Concussion, Cerebral	—	2	1	2	3	—
Contusion	65	13	63	4	4	—
Dislocation						
Upper	2	1	1	—	—	—
Lower	—	5	—	—	—	—
Dog Bite	1	—	1	—	—	—
Fracture						
Skull	2	8	1	3	1	—
Upper Extremity	4	6	4	1	6	—
Lower Extremity	2	8	2	3	11	—
Heat Prostration	22	27	11	—	5	2
Hernia	1	11	1	1	2	—
Laceration	66	32	64	2	8	—
Poisoning						
Gas	—	2	2	—	—	—
Miscellaneous	3	1	1	1	1	1
Shock	—	1	4	—	—	—
Sprain	11	9	20	—	—	—
Wound, Stab	—	1	—	—	—	—
Unclassified	24	7	8	—	—	—

* None removed to other hospitals.

TABLE 19. AMBULANCE SERVICE IN TWO HOSPITALS: CAUSE AND DISPOSITION OF CALLS FOR DISEASES, JULY, 1936

DISEASE	MUNICIPAL HOSPITAL			VOLUNTARY HOSPITAL			
	Number Treated	Number Removed to		Number Treated	Number Removed to		
Own Hos- pital		Other Mu- nicipal Hospital*	Own Hos- pital		Mu- nicipal Hos- pital	Other Volun- tary Hospitals	
Alcohol, Acute	44	99	—	25	—	37	—
Alcohol, D.T.'s	1	5	—	—	—	3	—
Coma	—	2	—	—	—	3	—
Convulsion	—	—	—	1	—	—	—
Diseases							
Chest	15	10	—	56	—	6	—
Heart	42	17	—	24	—	8	—
Intestinal	24	3	—	36	2	19	—
Kidney	1	3	—	3	1	4	—
Genito-urinary	2	1	—	3	1	1	—
Erysipelas	—	1	—	—	—	—	—
Epilepsy	8	7	—	13	—	2	—
Epistaxis	3	—	—	2	1	—	—
Hemorrhage							
Acute	—	—	—	1	—	—	—
Lungs	—	—	—	—	—	—	—
Stomach	—	—	—	—	—	—	—
Cerebral	5	6	—	1	—	5	1
Hysteria	12	1	—	10	—	3	—
Insanity	21	675	511	6	—	31	—
Infection	3	2	—	9	—	8	—
Labor	2	6	—	5	12	28	—
Pneumonia	3	5	—	4	4	14	—
Pulmonary Tu- berculosis	2	2	—	3	—	7	—
Unclassified	437	279	—	303	10	156	4

* None removed to voluntary hospital.

APPENDIX TWO. Internships and Residencies in Hospitals not Approved by the American Medical Association

DURING the course of the survey of the seventy-seven hospitals in New York City approved by the American Medical Association for house-staff training, attention was given the institutions unable to attain such approval. In the latter group, there were found to be 105 hospitals and sanitarium with an aggregate house staff of 240 individuals. While a great many of these institutions were small proprietary hospitals and sanitarium which must have at least one staff member in residence to satisfy the regulations of the Department of Hospitals,* there were also a considerable number of voluntary, municipal, and state-controlled hospitals of considerable size with resident staffs in proportion; most of them were registered by the American Medical Association. As will be shown below, this hospital experience was the only internship obtained by a large number of the men. Hence, some estimate of the educational value of the experience was required. The inability to win the approbation of the Council on Medical Education and Hospitals of the American Medical Association raised serious doubts as to the adequacy of such an introduction to practice.

It was a matter of some difficulty to classify the hospitals in the unapproved group, for they fell into several different classes, according to type of ownership and control—such as corporation, individual, church, non-profit association, city, state, and army. Lists available overlapped and in no instance included all of the institutions. However, those taken into consideration included sixty-five listed as proprietary by the Department of Hospitals and forty more of various types registered but not approved by the American Medical Association. The sixty-five in the proprietary group had a total house staff of

* In proprietary hospitals and sanitarium a resident physician, licensed in New York state, is required to be in full time attendance. However, in institutions whose annual bed occupancy averages less than fifteen patients, the requirement may be waived at the discretion of the Department of Hospitals.

only eighty men; hence, the great majority employed only one man each. In contrast, the forty hospitals of other types reported a total of 160 interns and residents.

While it was not feasible for the Committee to include the entire 105 unapproved institutions in its survey, it was possible to select for study twenty representative ones of larger size. Because of the larger house staffs in the non-proprietary hospitals, more of this type were included in the sample selected, seventeen as compared to three from the proprietary group. The method of study used in the unapproved hospitals was the same as in those on the approved list.

After some consideration, it was discovered that the twenty hospitals selected could be subdivided into three main groups: Group I were those which required their house staff to have served a previous internship approved by the American Medical Association; Group II accepted only graduates of accredited American, Canadian, and European medical schools; in Group III were found interns who had been graduated from unclassified medical schools.

Of course the boundary line between the approved and unapproved hospitals was one subject to change. As a matter of fact, during the course of our survey two hospitals rose to approved status while two others fell from grace.

GROUP I

In five hospitals with a total house staff of forty-two, all members were required to have served previous internships in approved hospitals. Two of these hospitals were private sanitariums with high standards of work; although designated as residents, their staff members were in reality private assistants. Failure of one hospital to secure approval was due to a low autopsy percentage figure. In one other, the patients were largely of the custodial type. Another has merited consideration for approval and has taken steps to secure it.

In three of the five hospitals, there were found to be thirty-two residencies offering experience of definite value, with a duration of one or more years. They covered the fields of psychiatry, obstetrics, ophthalmology, and otolaryngology. One of these hospitals received

approval by the American Medical Association subsequent to the completion of our survey; the other two deserve further consideration.

In the two remaining hospitals of the group, the ten residents listed did not deserve that designation. They were employed primarily to care for private patients and were given negligible ward responsibilities.

GROUP II

A second group of nine hospitals took graduates directly from acceptable American, Canadian, and European medical schools to serve as interns. Certain of this group have maintained medical standards of considerable merit. One hospital had achieved excellent standing and was in the process of revamping its house staff plan in accordance with American Medical Association requirements.* Four others had too low an average census to qualify, two were primarily for private patients, another was reputed to be having difficulties because of non-ethical standards of practice of certain attending staff members, and one was caring for chronic patients without sufficient attention to educational requirements.

The total house staff members for the group was found to be fifty-one individuals. Six of the hospitals reported the presence of thirteen residents, but the majority were of questionable standing. For the most part these positions have been taken frankly for the salary or in an attempt to piece out an unsatisfactory internship.

The situation of the hospitals in Group II is of greatest interest. Failure to qualify has handicapped them seriously in securing the best type of intern. Of necessity they have been forced to accept left-over candidates from American colleges or foreign applicants. There has been quite general agreement among them that the foreign-trained have not compared favorably with interns educated in the United States and Canada. The most frequent complaint was against the didactic nature of European education. Few graduates of this system were able to undertake even such simple laboratory tests as the routine blood count and urinalysis.

* This resulted in recognition in 1937.

The hospitals in Group II, with the one exception above mentioned, were faced with a real dilemma. Should they continue in their endeavor to carry on a medical program while depending on a mediocre intern staff, or should they omit the internship from their plans altogether? The only alternative would appear to be a paid assistant staff who had already had the benefit of acceptable internship training. Since, in some instances, financial resources have been meagre, the funds for salaries have not been forthcoming.

GROUP III

There were six hospitals with a total house staff of twenty-two, whose distinguishing characteristic was the utilization of interns from unaccredited American schools. This marked them immediately as being in the weakest position of all. None of the hospitals in this group had any prospects of attaining American Medical Association approval.

The accompanying table shows the distribution of the house staffs in the three groups of unapproved hospitals by the type of medical school from which they came.

MEDICAL SCHOOL ORIGIN OF HOUSE STAFFS OF THE
UNAPPROVED HOSPITALS, 1935

LOCATION OF MEDICAL SCHOOL	GROUP I	GROUP II	GROUP III	TOTAL
<i>Number of hospitals</i>	5	9	6	20
Approved medical colleges:				
New York City	7	14	1	22
Other United States and Canada	33	9	3	45
Unapproved medical colleges	—	—	12	12
Foreign medical colleges	2	28	6	36
<i>Total house staffs</i>	42	51	22	115

The house staffs in the hospitals in Group I were either private assistants or men taking work in the specialties. With the exception of

two individuals they were graduates of recognized American and Canadian schools, the exceptions being European graduates.

In the other two groups the house staffs can be best classified as interns, although in some cases they were called residents by the hospital itself. Twenty-three of the fifty-one men in Group II came from accredited American and Canadian schools, the remaining twenty-eight from foreign schools. Of the twenty-two interns in Group III, twelve were from unrecognized American schools and six had had foreign training.

It is of interest to note that in Group I, which had the best standing of the three, over 70 per cent of their house staff came from accredited American schools other than those located within New York City, while in Group II over half of the men were graduates of European schools. Graduates of schools in the city were again very much in the minority (23 per cent). In Group III more than three-fourths of the interns were from European and unaccredited American schools.

It would seem that students in local colleges have been more aware of the deficiencies of appointments in the unapproved group of hospitals, while graduates from other parts of the country have been less able to discriminate. Without question, the institutions in Groups II and III have been forced to take a great deal of the least desirable of internship material, namely men from European and unrecognized American schools.

An inquiry is needed to learn why graduates of good schools have accepted unsatisfactory internships. Apparently in some instances the less promising of senior class members have been unable to obtain places in recognized hospitals and have had to turn to Groups II and III of the unapproved institutions. For the less fortunate students to be further handicapped by unapproved internships is a matter of real concern, when they are considered as future practitioners of medicine.

Occasionally a graduate of good standing has taken an unapproved internship from choice. There have been various reasons for doing this, such as the influence of a relative or close friend on the staff of the hospital, the meretricious inducement of a salary, or a desire for

contacts as an aid in establishing a practice. If the man has had a previous good internship in a hospital of approved standing, there can be less objection to his acceptance of an internship, residency, or private assistantcy in one of these hospitals.

Twelve graduates of three unaccredited schools of medicine in the United States were found among the interns in Group III. None of them will be able to secure a license to practice medicine in this state although, through virtue of internships served in New York, they may be able to qualify for state board examinations in other states.

The fact that these inadequately prepared men have been allowed to serve as interns and even to carry the title of resident brings to light factors which are not otherwise readily apparent. While they cannot hope to secure a license to practice medicine in New York state, they are allowed to hold responsible house staff positions in hospitals licensed to give medical service. Furthermore, the so-called residents are in reality paid staff members and play a considerable part in the furnishing of medical service to the public. There has been no provision for termination of such arrangements and they may be continued over a period of years. These residents of necessity must carry a considerable amount of responsibility in both diagnosis and treatment of the sick.

On the ambulance, the interns have taken their regular turn and have been expected to make diagnoses and render first aid therapy. As has been shown in the section devoted to the ambulance service,* the cases treated in the home and on the street have greatly exceeded those brought in for hospitalization.

In view of fundamental changes impending in internship and graduate educational fields, it seems highly desirable that appropriate steps be taken to solve the problem of the second and third groups of unapproved hospitals which now exist outside the pale of recognition.

* See pages 190-196.

APPENDIX THREE. Comments on Their Internships by Practicing Physicians Who Graduated from the Five New York City Medical Colleges

ON THE following pages will be found some representative comments made by the 1,904 graduates of the five medical schools in New York City who answered the questionnaire sent them by the Committee; also, the specific reasons given by some of them for dissatisfaction with their internships. The questionnaire is shown on pages 401-404.

GENERAL COMMENTS

"My internship was satisfactory. The chief defect, I should say, was that we saw fairly advanced cases, not so many incipient ones. Also, I did not learn much about treating the ordinary run-of-the-mill cases one finds to treat when starting in private practice. Also, interpretation of x-ray films would have been beneficial. We leaned too much on a written report." (Two internships: eighteen months of medicine and surgery, and eighteen months of medicine and pediatrics.)

"My internship was satisfactory in part. Most cases were already treated on the outside for several days or weeks and then sent into the hospital. Early acute cases were rarely seen, and when I went into practice I had to dig for myself. I would recommend an internship consisting of medicine, obstetrics, gynecology, contagion, and major surgery in so far as it concerns diagnosis. I firmly believe it is a dangerous practice to give an intern that slight training in major surgery which gives him a false sense of confidence as to his ability to perform such work. I believe such training results many times disastrously for the patient." (Rotating internship, one year.)

"You cannot get enough of pathology, no matter what branch of medicine or surgery you intend to follow." (Mixed internship, two years of medicine and surgery.)

"My internship was not entirely satisfactory. The lack of definite instruction, and a somewhat haphazard sequence of services, was not satisfactory. I would recommend a more 'leisurely' internship, wherein a smaller number of patients could be given much more careful and detailed attention, than in the understaffed city hospital in which I served. More work in pathology." (Mixed internship, sixteen months medicine and surgery.)

"I would recommend a balanced rotating service with an option to spend more time on a specialty that interests you, so that you may receive the 'stimulating impetus' earlier in your professional career." (Rotating internship, sixteen months.)

This man interned in an unapproved hospital; he says: "Such types of internship are of little value and are an imposition and exploitation of the services of an intern. The medical schools are too lax in training or directing their students to proper hospitals where the high intellectual standards, ideals, and altruisms of every student can be maintained. The medical schools should institute an annual get-together where the medical advances of that particular year should be discussed. The type of internship matters little in one's training, the type of institution and the type of men on the staff are the important factors." (Rotating internship, sixteen months.)

"My internship was not satisfactory due to lack of clinical teaching and a dearth of acute illnesses. Knowledge of medicine was obtained by hard work, self-study, and innumerable consultations. Furthermore, there was no attempt to encourage those who were willing to go ahead. Would recommend a longer period of internship in a hospital staffed by men with teaching ability and who take more interest in the task of teaching young men just out of medical school. Then, too, after the internship, some provision should be made for a staff position, if necessary by competitive examination." (Rotating internship, two years.)

"Internship was entirely satisfactory for training in diagnosis. In therapy, however, if the patient did not benefit from the treatment there was something wrong with the patient. There was lack of train-

ing in the common skin diseases. There was little challenge for original work by the attendings or to make the interne think for himself. He followed orders. He heard amusing stories about patients seen by the attending in his private practice but no explanation why they behaved as they did." (Two internships: two years mixed medicine and surgery; six months pediatrics.)

"I would recommend a better organized pathology and bacteriology service, organized teaching of interns, more interns with more time free for organized study and recreation." (Rotating internship, twenty-one months.)

"To my mind, all internships, particularly those taken with the object of supplementing and furthering one's medical training (whether general or special) should be taken only at hospitals associated with teaching institutions. Only at such hospitals can one be more certain that correct and adequate instruction will be given. The men on the hospital staff entrusted with the training of interns should be teachers at medical schools. These men, too, should realize that internship is but a continuation of the medical school training, and should understand their responsibility in furthering the medical education of their house staff." (Two internships: twelve months medicine; eight months pediatrics and contagion.)

"Yes, my internship was very satisfactory. I am in a small country town with a modern hospital, large outlying community. No surgeon, few specialists, fellow practitioners inadequately trained, many never have had internships, none with more than one year. If I had not had a good training in medicine, surgery and obstetrics, I would be doing no better work than the rest." (Rotating internship, two years.)

"The more I see of practice, the more I am convinced that one cannot get enough of general medicine or surgery, and two or three years as interne won't do the trick. The solution for me rests with an ever-changing clinic experience." (Two internships: one year rotating; one year pediatrics.)

"On the whole, yes. My service was satisfactory. The general training has been very valuable. If the four months spent on ambulance

was reduced to two, time could be given to clinics in urology and dermatology. In these two specialties the rich clinic material has not been utilized to the benefit of the house staff." (Rotating internship, two years.)

"It was satisfactory. A cross-section of cases seen and treated during my internship corresponds with a cross-section of cases seen in general practice. Medical and surgical services were not filled with clinical rarities, but with cases similar to those one sees every day—also, with direct supervision of treatment administered by interns, a practical experience was obtained. Because the hospital in which I interned is primarily a teaching hospital, conservation is inbred with, however, enough practical training to meet emergencies demanding radical procedures." (Two internships: six months rotating; two years mixed medicine and surgery.)

"Yes, the rotating service was satisfactory. General character of internship gave some practice in handling the common types of disabilities requiring hospitalization met with in general practice. A rotating internship such as I had with perhaps less accent on major surgery and more intelligent work in the outpatient department is, I believe, the best preparation for a general practice." (Rotating internship, one year.)

"My service was not entirely satisfactory. If some sort of apprenticeship could be served in a physician's office, many of the pitfalls of private practice could be avoided. I am thinking of such matters as correlating the need for laboratory examinations with the patient's financial status, how much information should be given to patients or their families with regard to their condition, and so forth." (Rotating internship, one year.)

"Yes, my internship was satisfactory, however, I would recommend added experience in study and treatment of the infectious contagious diseases, especially childhood diseases, plus some knowledge of diagnosis, treatment, and handling of nervous and psychiatric cases." (Rotating internship, one year.)

"I feel that my internship could have been much better by furnishing

a decent library, some interest in teaching by the attending staff, and more exact standards of diagnosis." (Internship, two years surgery.)

"I would recommend the type of internship in which the pathology of both medicine and surgery were studied in greater detail, and in which there was more correlation between pathology and clinical material." (Mixed internship, two years medicine and surgery.)

"The internship I had was sufficient but I certainly would have appreciated organized intern teaching, especially lectures and demonstrations of office procedures which are never seen in a hospital and which an intern must know when he starts in practice." (Rotating internship, two years.)

COMMENTS GROUPED BY TYPE OF PRACTICE

GENERAL PRACTICE

"I believe I would be much better fitted for general practice and would have a great deal more confidence in myself, if I could have had more thorough instruction by competent men, more supervision of the laboratory work and a longer period of internship, especially in medicine and in minor surgery, and at least six months in pediatrics and contagion." (Rotating internship, one year.)

"It is my feeling that a rotating two-year internship is much more satisfactory for general practice. In a straight medical or surgical service very little instruction is received in the various specialties." (Rotating internship, two years.)

"It was not entirely satisfactory. General practice consists for the most part in the treatment of ambulatory patients. Hospital practice handles patients who are bedridden. What use was major surgery to me, including appendectomies and herniotomies, if I have not done any since in practice? Internships should include regular attendance in outpatient department, examining and prescribing for patients in the different clinics, preferably correlating this with hospital service. All internships should be teaching internships. The knowledge acquired by four years' hard work should be utilized constantly in hospital practice; this

is to be done by systematic discussion among staff and interns." (Rotating internship, twenty months.)

"The type of internship I had could not be improved; twelve months medicine, eighteen months general surgery, and ten months obstetrics and pediatrics was most suitable for starting and maintaining a general practice." (Internship, two and one-half years medicine and surgery plus ten months pediatrics and obstetrics.)

"Internship was very satisfactory. I am engaged in general practice in a suburban community. I am expected to be able to do considerable major surgery, obstetrics, medicine, and pediatrics, which I believe my internship has qualified me for. However, in some of the specialties as skin, nose and throat, and neurology, I sometimes am discouraged that I had not received better training. While I do not propose that any man can do a good job at the specialties in general practice, I still feel that my training along these lines has been sadly neglected by both the medical college and the hospital. I do not say this to condemn either, because I think that I have received good training from both. Rather I offer it as constructive criticism. After all, the only way to correct an evil, if an evil exists, is for us who are in practice to make known the weak points which sometimes escape the eye of the instructor." (Rotating internship, two years.)

"Was my internship satisfactory? Yes and no. Having interned in a small private hospital I learned the proper approach to a private patient. I also was taught the principles of medicine, surgery, gynecology and obstetrics. But I did not have enough of gynecology, abnormal obstetrics, and medicine, and didn't have an opportunity to work as an interne in the outpatient department of gynecology. In the light of my present experience, I would recommend an internship of at least two years, preferably three years, ending up with a residency of one to two years in gynecology and obstetrics. I would choose an institution connected with a teaching school, regardless of the location of that hospital." (Rotating internship, one year.)

"Internship satisfactory? From a medical standpoint, yes. From an economical standpoint, no. Economically I am still two years behind

those in my town who merely took a one-year rotating service in a small-town hospital. They learned their surgery by practicing on their private patients and do more surgery than I do. If I had not taken the additional two years surgical internship I would be doing much more surgery than I am now, but man, what surgery! For a small town I would say that an adequate internship would consist of one year rotating service (including obstetrics) followed by one year of surgery or internal medicine, depending on the leanings of the particular student." (Two internships: seven and one-half months general; two years straight surgery.)

"Service was satisfactory. Thorough training in the fundamentals of medicine, surgery, obstetrics, gynecology, and pediatrics, together with less intensive training in the specialties, prepared me for the type of practice in which I am engaged." (Rotating internship, twenty-eight months.)

"In the main, yes, the service was satisfactory. The main difficulty has been getting on an active surgical service where the knowledge gained during internship could be used and improved upon before too much has been forgotten and skill lost. Private practice for the young man does not yield much work in surgery. I would recommend a residency either in surgery or obstetrics and gynecology which carries with it the assurance of a position on an active hospital service when finished." (Rotating internship, two years.)

"Service was quite satisfactory, but more pathology and x-ray is needed. Out here in the sticks one relies on his own pathological experience in carrying out laboratory work to a large extent. There are laboratories available, but not in the immediate vicinity. Since entering general practice I have all my own x-ray work to do, including attempting at times to diagnose what I have after I have a decent plate. I would recommend more G.U. work, more obstetrics, more skin work. More fluoroscopic and x-ray work should be given, not only diagnostic, but basic technic in x-ray." (Rotating internship, twenty-one months.)

"Internship satisfactory? For surgery and organic diseases—yes. For

functional disorders, so called neurotics—no. In the hospital where I served a twenty-one month rotating service, the patients we saw and treated had, in most cases, demonstrable lesions. We had no experience with that large group of patients who have numerous complaints and with whom you can find very little wrong. This type of patient is much more numerous than the former and is seen only in the outpatient departments, which we did not have. I would add to the service three months in the dispensary to learn how to treat the numerous cases who are not very sick, or have functional disorders. This type of patient makes up the bulk of a doctor's practice, rather than pneumonias and acute appendices. These patients pay the doctors' expenses and a little training with them would save a young doctor a lot of headaches." (Rotating internship, twenty-one months.)

"Yes, my internship was satisfactory. But the time spent as intern could be arranged to give the young physician much more practical experience. I believe that the laboratory work is very important, regardless of the specialty a man later goes into. I believe that *very much* more time should be spent in the outpatient clinics of minor surgery, medicine, pediatrics, neurology, and *dermatology*. The average general practitioner knows little or nothing about dermatology. More time should be spent on obstetrics and pediatrics. The intern should be given definite assignments, that is, case histories to discuss at staff meetings." (Rotating internship, twenty-two months.)

"It was satisfactory. The greatest lack so far has been in handling skin lesions. I have had enough surgery for the present. I would like to have a year in outpatient clinics and in pathology. There was not enough time to be a regular clinic attendant." (Rotating internship, two years.)

"I believe that a good internship is as important as a good medical college, if not more so. By a good internship I mean a service wherein the visiting staff take an interest in the intern. I would recommend a rotating internship wherein more stress is put upon ear, nose, and throat; one in which the intern participates in all the clinics. I feel that at least one hour a day should be used for work in the outpatient

department.” (Internship twenty-two months, on medicine, surgery, obstetrics.)

“Not entirely satisfactory. I thought surgical training was everything; however, I should have had more training in pediatrics, general medicine, and obstetrics. I would recommend more training in pediatrics and obstetrics. More organized teaching of interns in the above and in internal medicine.” (Rotating internship, two years.)

“Satisfactory, but I object to having been taught how to do tonsillectomies (I did over 150 as intern) and then be barred from performing the same operation while in practice. The same holds true for minor and for simple major surgery.” (Rotating internship, three years.)

SURGERY

“Since my practice consists almost entirely of referred surgical cases my surgical internship serves as an excellent background for my private practice. Were I to find it necessary or desirable to treat some medical cases, I would find this most difficult, not having had even the fundamentals of a medical internship. The following type of internship is one which should be superior in my opinion to the one I had: six months of pathology followed by one year of medicine, including pediatrics, followed by two years of surgery, ending as house surgeon.” (Internship, twenty-seven months on surgery.)

“A general surgical service including gynecology, fractures and orthopedics, gave me excellent training, especially six months as surgical house officer when I was allowed to do several hundred major operations. For an intern expecting to do surgery I believe a large general surgical service which includes orthopedics and gynecology and urology is most helpful if as house officer he is allowed to actually direct the service. I believe I miss the lack of obstetrics although I do not expect to practice in this field. I also believe a short period as junior on a medical service would have helped me.” (Internship, two years on surgery.)

“In a straight surgical internship I believe that the interns should de-

vote some time to medical cases—possibly attending ward rounds on the medical wards weekly would give a more balanced training and keep them in touch with the usual medical problems.” (Internship, twenty-two months on surgery plus six months general.)

“Yes, my internships were satisfactory. I had the advantage of a sound medical training before my surgical internship. Though my work is now purely surgical I feel that my medical training is invaluable in that my judgment, diagnostic skill and general approach were greatly broadened. I think that the type of training that I had is ideal. I think it is a mistake to give a young man a training mainly surgical as a preparation for general surgery.” (Two internships: two years mixed medicine and surgery; one year surgery.)

ORTHOPEDIC SURGERY

“The internship I had—twelve months surgery, two months medicine—could have been better suited if it had been two years instead of fourteen months with more work in medicine.” (Mixed internship, fourteen months of medicine and surgery.)

GYNECOLOGY—OBSTETRICS

“It was satisfactory. The surgical training I received was very helpful in my work as a gynecologist. I should have followed my two years internship with at least a one-year residency in obstetrics and another year in gynecology and possibly six months each of pathology and radium.” (Mixed internship, two years of medicine and surgery.)

PULMONARY DISEASE

“Yes, my internship was satisfactory. I have not practiced surgery since interning. I believe more pathology is indicated in hospital instruction. This should be combined with stimulating clinical correlation. Perhaps a relocation of the pathologic part of intern curriculum might be advisable with placement of at least part of the pathology just prior to the houseship—a place where the value of pathology might be more appreciated.” (Mixed internship, one year of medicine and surgery.)

PEDIATRICS

Not entirely satisfactory. "I believe I should have had some surgical pediatrics and a nose and throat service in addition." (Two internships: three months of medicine, three months of surgery, six months of gynecology; and twelve months of pediatrics.)

Not satisfactory. "Received no benefit from internship at the general hospital because the staff were incompetent for teaching purposes and very lax services." (Two internships: one year rotation; one year contagion.)

Not satisfactory. "No teaching. Not enough pediatrics." Recommends "a hospital with a teaching staff." (Rotating internship, one year.)

Satisfactory. "Largely medical work with an insight into surgical conditions, the internship has fulfilled my need for practice. Otolaryngology was quite useful because of its place in pediatric work." (Rotating internship, two years.)

Very satisfactory. "I had a basis of two years' rotating internship in a very practical hospital of high standing combined with one year of specialized internship in a teaching hospital." (Two internships: two years rotating; one year pediatrics.)

Satisfactory. "My internship being specialized in character was most satisfactory for a specialist. I believe, however, that a rotating service best qualifies the man who has not chosen a definite line of professional activity." (Two internships: eighteen months of medicine and pediatrics; one year of pediatrics.)

Satisfactory. "Rotating service has been useful in preparing for pediatric practice. Contagion internship has proved invaluable." (Two internships: twenty-one months rotating; six months contagion.)

Satisfactory. "General rotating internship of almost two years' duration was an indispensable background. Communicable diseases hospital gave excellent general pediatric training as well as essential specialized work so important in pediatrics." Recommends "better teaching supervision." (Two internships: twenty months rotating; three years pediatrics at contagion hospital.)

INTERNAL MEDICINE

Not altogether satisfactory. "No special instruction in pathology, bacteriology, clinical pathology, x-ray, and EK interpretation. Limited experience in children's ward. Number of cases too limited. Too much dispersion of activities. Too little real responsibility." (Internship, sixteen months of medicine, including three months surgery.)

"Fairly satisfactory. Visitings could have organized services so as to give more instruction to the interns. We should have had more autopsies and more instruction in pathology." (Mixed internship, twelve months of medicine, six months of surgery.)

"Satisfactory? In the main, yes—with exceptions. I had practically no experience with contagious diseases. This has been a real handicap in practice. I saw almost no skin conditions after leaving medical school until starting practice. I had no opportunity to treat syphilis as an intern, except about three cases." (Internship, twenty months of medicine, including four months of surgery, two months of pathology.)

"The rotating internship was exactly what I wanted. I now know it was the best available and best for my training. Although I limit my work to internal medicine, I have had a good training to recognize surgical, obstetric, and other conditions that are occasionally encountered. I make no attempt to treat anything but medical conditions although if I were forced to do general practice I know I could do it without any hesitation." (Rotating internship, two years.)

Satisfactory. "Had excellent training in internal medicine due, I think, to contact with high type attending staff. I saw enough surgery to get the point of view. I think that an internship with the major portion in the field of future practice and a short term in the other field is the best." (Internship, fourteen months medicine, including three months surgery.)

Satisfactory. "Training in the fundamental sciences following a house physician internship in which special stress is placed on diseases of metabolism." (Internship, two years of medicine, surgery, and pathology.)

Satisfactory. "My main interest has been internal medicine and the

hospital afforded exceptional opportunity for the work-up and study of such cases under excellent attendings." (Rotating internship, three years.)

Not satisfactory. "Not adequate instruction, except in medicine and this was too short. No pathological work. Study of cases superficial and only occasional advice by specialists on patients with disease which warranted specialized knowledge." (Rotating internship, one year.)

"Type of internship consisting of six months medical pathology, six months surgery, and one year of medicine is good preliminary training for the practice of internal medicine which I am doing. If it were possible to combine part-time work in the fundamental sciences with active internship, I should think that such a combination would be preferable to the common practice of doing postgraduate work in the fundamental sciences after completing an internship, for proper training as a practitioner of internal medicine."

"My internship, consisting of six months medical pathology, six months as junior surgeon, twelve months internal medicine, gave me a background of internal medicine with enough surgical experience to know when surgical experience is needed."

"Fair. Not enough cases—no emphasis on the minor complaints which make up most of private practice and such as could have been obtained in OPD work. Too much stress on rare and theoretical subjects." Recommends "a lot of OPD work—a large part of laboratory work stopped. OPD work, however, should be closely supervised." (Internship, two years of medicine.)

GASTRO-ENTEROLOGY

Satisfactory, but "more direct instruction from members of visiting staffs would have made the internship more valuable." (Rotating internship, eighteen months.)

DERMATOLOGY

Satisfactory. Both medical and surgical internship necessary to specialty of dermatology. (Internship, eighteen months of medicine and surgery.)

Not satisfactory. "Should have had more medicine." (Rotating internship, twelve months.)

Not satisfactory. "Feel that if State Boards require internship and if AMA attempts to 'approve,' then there should be close supervision of the training and experience that intern receives. Believe hospitals should realize responsibility to intern and should make definite effort to teach." (Two internships: eighteen months rotating; twelve months of dermatology.)

NEUROLOGY AND PSYCHIATRY

Satisfactory. "I received instruction and training in anatomy, physiology, pathology and clinical neurology and psychiatry which fitted me for my future practice." (Internship, one year of medicine and eighteen months of medicine, neurology, and psychiatry.)

Satisfactory, but recommends "more adequate methods of handling private patients and more attention to psychiatry." (Rotating internship, eighteen months.)

Satisfactory. "A general survey of practical medicine indispensable to the field of psychiatry where one is constantly dealing with symptoms which may or may not be somatic or psychic. A more one-sided kind of internship would not have provided this indispensable practical background nearly so adequately. I could have had wider experience in the field of dermatology—four to eight months of afternoons in a skin clinic would have been a significant addition to my general training." (Rotating internship, twenty months.)

SURGICAL SPECIALTIES

Satisfactory. "Internship in a teaching hospital. Assistant to leaders in specialties as general and orthopedic surgery. Had opportunity to see what could be done with surgery. Had extensive operating room experience. Prepared to take care of surgical emergencies." (Internship, twenty-seven months of surgery.)

"Satisfactory? Not enough. The average intern is not qualified for private practice but after one year he *thinks* he is. All internships

ought to be general for one year and then special for two more years." (Rotating internship, eighteen months.)

"Not satisfactory. The service was *too* specialized. I had no experience in urology or gynecology and little G.I. surgery. I had little or no experience in Gu or Gyn diagnosis." (Mixed internship, two years, including twelve months of surgery, six months of medicine, six months of pathology.)

CANCER SURGERY

"Satisfactory. A surgical internship is essential to anyone who expects to treat cancer." (Two internships: two years mixed; six months of surgery.)

OPHTHALMOLOGY

Satisfactory. "Practical experience in different fields of medicine secured by rotating internship was most valuable to me. As a specialist a knowledge of various medical fields allows one to recognize various medical conditions that may or may not be related to those in specialist's own field and enables him to guide patients so that they secure the medical care that is indicated." (Rotating internship, nineteen months.)

Satisfactory. "Medical internship with a smattering of the various branches of surgery is the best preparation for ophthalmology." (Mixed internship, sixteen months, including twelve months of medicine, four months of surgery.)

Satisfactory. "A general internship of one or two or even three years and, if possible, one to three years of general practice are fine preparation for special work. No specialty can disassociate itself from general practice entirely. Any specialist should have a working knowledge of general medicine." (One year general internship.)

"Internship inadequate. No instruction of interns—only staff meetings were those where attempts were made to justify demise of patients plus an occasional case report. Ward rounds irregular, staff composed in large part of 'alumni' of that hospital with little other training." (Rotating internship, eighteen months.)

OPHTHALMOLOGY AND OTOTOLOGY

Not satisfactory. Had insufficient training in otolaryngology. I feel I would have obtained very much more out of my internships if there had been organized instruction. (Two internships: one year mixed; eighteen months of ophthalmology.)

Satisfactory. "Busy hospital. Varied type of work. Good teachers and opportunity to do work. Supervised training." (Two internships: fifteen months rotating; eight months of ophthalmology and eight months of otolaryngology.)

"Satisfactory? Yes, except laboratory facilities were so elaborate and convenient one became far too dependent on them." (Two internships: twelve months rotating; two years of ophthalmology and otolaryngology.)

OTOLARYNGOLOGY

"Satisfactory? Yes. The internship gave me a varied experience. I believe that internship should be considered as part of the medical school curriculum and that it should be associated with the knowledge obtained at school. The visiting staff should act as teachers and not merely as visitors who come to make rounds." (Rotating internship, two years.)

ORTHOPEDICS

"Fairly satisfactory. There could have been more general experience—obstetrics, pediatrics, internal medicine." Recommends "a general rotating internship for at least one year, then general surgery internship for two years, then orthopedics internship." (Two internships: twenty-one months mixed; two years of orthopedics.)

"Very satisfactory. Good background in medicine, surgery, pediatrics, pathology, obstetrics and gynecology, and the specialties." (Rotating internship, two years.)

PROCTOLOGY

"Satisfactory. During my entire internship I had no gastro-enterology

or proctology which is my specialty now. However, the general training I received was most valuable in medicine and general surgery." (One year general internship, two years rotating.)

REASONS FOR DISSATISFACTION GROUPED BY TYPE OF PRACTICE

GENERAL PRACTICE, INCLUDING OBSTETRICS, MAJOR SURGERY, AND OTHER SPECIALTIES

Proctology and obstetrics unsatisfactory. (Rotating internship, three years.)

Insufficient experience in pediatrics, gynecology, ear, nose and throat, skin, orthopedics, fractures, minor surgery, x-ray, and general office treatments. (Rotating internship, two and one-half years.)

"Lack of clinical teaching, and a dearth of acute illnesses. Furthermore, there was no attempt to encourage those who were willing to go ahead." (Rotating internship, two years.)

"Small hospital and insufficient number of cases." (Rotating internship, two years.)

Lack of training in the cases of functional difficulty and in the outpatient department. (Rotating internship, two years.)

Training in the minor specialties defective. (Rotating internship, two years.)

Outpatient experience inadequate. (Rotating internship, two years.)

Ear, nose and throat, orthopedics, and dermatology unsatisfactory. (Rotating internship, two years.)

"Insufficient medicine and surplus of surgery." (Rotating internship, two years.)

"Insufficient medicine, obstetrics, dermatology, neurology, ophthalmology, minor surgery, and too much major surgery." (Rotating internship, two years.)

"Insufficient ward material." (Rotating internship, two years.)

Training in pediatrics, neurology, and psychiatry inadequate. (Rotating internship, two years.)

Insufficient experience in obstetrics. (Rotating internship, two and one-half years.)

“Not carried far enough in finer aspects of medicine.” (Rotating internship, one and one-half years.)

“More pathology, x-ray, gynecology, urology, obstetrics, and dermatology needed.” (Rotating internship, twenty-one months.)

“More practical clinical work in the specialties with instruction advisable. Too much time devoted to ambulance service and too little instruction in gynecology of office type.” (Rotating internship, one year.)

“Cases seen only late in their course.” (Rotating internship, one year.)

“Insufficient medicine and obstetrics and diagnostics of surgery.” (Rotating internship, one year.)

“Insufficient opportunity for examination and treatment of chronic ailments, minor diseases, and typical office patients such as arthritis, menopausal disorders, upper respiratory infections, and nervous indigestion.” (Rotating internship, one year.)

Organized instruction lacking. (Rotating internship, one year.)

Medicine and specialties unsatisfactory. (Rotating internship, one year.)

Surgery and teaching in general unsatisfactory. (Rotating internship, one year.)

Teaching and ward material defective. (Rotating internship, one year.)

“Insufficient gynecology, obstetrics, medicine, and outpatient clinics, especially gynecology.” (Rotating internship, one year.)

Not enough experience in obstetrics, neurology, ear, nose and throat, orthopedics, x-ray, and ophthalmology. (Rotating internship, one year.)

“Lack of supervision on all services.” (Rotating internship, one year.)

“Irregularity of experience.” (Rotating internship, one year.)

"Insufficient pathology, psychology of patient and his relatives, organized teaching, and collateral reading." (Rotating internship, one year.)

"Too short." (Rotating internship, one year.)

"More medicine and specialties and systematic teaching of interns." (Rotating internship, one year.)

"Lacking in gynecology, ear, nose and throat, pediatrics, and outpatient department training." (Mixed surgical and obstetric internship, two years.)

Lack of training in obstetrics, gynecology, ophthalmology, skin, and urology. (Mixed surgical internship, two years.)

"Training in specialties hopelessly inadequate." (Mixed surgical internship, two years.)

"Insufficient diagnostics of x-ray and too much routine laboratory work." (Mixed surgical internship, two years.)

Gynecology, urology, anesthesia, obstetrics, pediatrics, and dermatology unsatisfactory. (Mixed surgical internship, two years.)

"Insufficient medicine." (Mixed surgical internship, one and one-half years.)

"No contact with outpatients." (Mixed surgical internship, nineteen months.)

"Did not see the kind of patients to be encountered in practice. Surgical experience forgotten before having chance to use it." (Mixed surgical and rotating internships, thirty-three months.)

"Insufficient gynecology, ear, nose and throat, eye, neurology, and pediatrics." (Mixed medical, surgical, and obstetric internship, two and one-half years.)

Surgery, obstetrics, and dermatology not satisfactory. (Mixed medical internship, two years.)

"Insufficient teaching in surgery, gynecology, and ear, nose, and throat." (Mixed medical internship, two years.)

“No medicine, obstetrics, pediatrics, or specialties.” (Straight surgical internship, two years.)

Not enough training in dermatology and pediatrics. (Straight surgical internship, one and one-half years.)

GENERAL PRACTICE, INCLUDING OBSTETRICS AND OTHER SPECIALTIES BUT NO MAJOR SURGERY

Excessive ambulance and laboratory duties. (Rotating internship, three years.)

More guidance in reading, instruction, and the art of handling private patients needed. (Rotating internship, three years.)

“Insufficient fractures, orthopedics, dermatology, and operative obstetrics, and too much major surgery.” (Rotating internship, thirty months.)

Physical therapy and x-ray lacking. (Rotating internship, twenty-nine months.)

Instruction in otolaryngology, gynecology, urology, and psychiatry not adequate. (Rotating internship, twenty-eight months.)

“Small things in medicine, minor surgery, clinical diagnosis, obstetrics, and specialties.” (Rotating internship, twenty-eight months.)

More instruction needed in chronic disease, prescription writing, and more general instruction in therapy. (Rotating internship, two years.)

“Insufficient follow-up with overcrowded clinic.” (Rotating internship, two years.)

More dermatology, outpatient work, and pathology needed. (Rotating internship, two years.)

“Insufficient gynecology in outpatient department.” (Rotating internships, two years.)

“Insufficient pediatrics and outpatient clinics in specialties.” (Rotating internship, two years.)

“Insufficient stress on diagnosis and treatment of minor ills included in

the specialties. Too much ward work and not enough clinic work." (Rotating internship, two years.)

Pediatrics, medicine, and obstetrics, and organized instruction deficient. (Rotating internship, two years.)

"Insufficient outpatient and library facilities." (Rotating internship, twenty-one months.)

"Insufficient medicine and obstetrics and too much surgery. No teaching." (Rotating internship, twenty-one months.)

Specialty clinic experience inadequate for use in office practice. (Rotating internship, twenty months.)

"Insufficient pediatrics, gynecology, emergency, obstetrics, and otolaryngology. Too much routine work and ambulance duty." (Rotating internship, nineteen months.)

Not enough minor surgery, physical therapy, outpatient, library, and training in office practice in the specialties. (Rotating internship, eighteen months.)

"Insufficient supervision and guidance." (Rotating internship, eighteen months.)

Systematic instruction, therapeutics of common diseases, obstetrics, and outpatient experience deficient. (Rotating internship, sixteen months.)

"Insufficient minor surgery, pediatrics, infant feeding, minor ailments, contagious disease. Too much surgery." (Rotating internship, sixteen months.)

"Insufficient bedside diagnosis and treatment and outpatient training, also insufficient guidance and teaching by attending staff." (Rotating internship, fourteen months.)

Guidance, teaching, outpatient experience, and obstetrics lacking. Excessive ambulance service. (Rotating internship, one year.)

Insufficient medicine, surgery, obstetrics, gynecology, otolaryngology, outpatient, and physical therapy. Excessive ambulance service. (Rotating internship, one year.)

"Insufficient duration of assignment on each service and organized teaching." (Rotating internship, one year.)

Pediatrics, obstetrics, organized teaching, and outpatient experience unsatisfactory. (Rotating internship, one year.)

Organized training in follow-up and outpatient department not adequate. (Rotating internship, one year.)

"Insufficient contact with office procedures." (Rotating internship, one year.)

Insufficient pediatrics, medicine, and contagion. (Rotating internship, one year.)

Surgery, pathology, x-ray, and specialties in outpatient department unsatisfactory. (Rotating internship, one year.)

Pathology and medical specialties unsatisfactory. (Rotating internship, one year.)

Training in specialties and venereal disease inadequate. (Rotating internship, one year.)

Otolaryngology and gynecology lacking. (Rotating internship, one year.)

Pediatrics and otolaryngology unsatisfactory. (Rotating internship, one year.)

Unsatisfactory in surgery, specialties, and office procedures, venereal disease, proctology, otolaryngology, allergy, varicose veins. (Rotating internship, one year.)

Venereal disease unsatisfactory. (Rotating internship, one year.)

"Insufficient pediatrics and otolaryngology. Too much emphasis on major surgery." (Rotating internship, one year.)

Medicine, dermatology, syphilology, x-ray, and physical therapy poor. (Rotating internship, one year.)

"Insufficient urology, otolaryngology, dermatology, and competent instruction." (Rotating internship, one year.)

Dissatisfied with clinical material and pediatrics. (Rotating internship, ten months.)

Inadequate in medical and surgical specialties. (Mixed and rotating internships, thirty months.)

Obstetrics, pediatrics, and pathology poor. (Mixed internship, two years.)

Minor surgery and outpatient experience unsatisfactory. (Mixed internship, two years.)

Poor in obstetrics and training in home and office procedures. (Mixed medical internship, two years.)

"Insufficient surgery and obstetrics." (Mixed internship, eighteen months.)

"Insufficient pediatrics, dermatology, venereal disease, minor surgery, and common everyday diseases." (Mixed internship, eighteen months.)

Insufficient experience in obstetrics and specialties and in prescription writing. (Mixed medical, surgical, and obstetric internship, eighteen months.)

GENERAL PRACTICE, INCLUDING MAJOR SURGERY

"Insufficient traumatic surgery, medicine, pediatrics, and obstetrics, and excessive major surgery." (Rotating internship, thirty months.)

Outpatient experience, minor surgery, medicine, pediatrics, neurology, and dermatology unsatisfactory. (Rotating internship, two years.)

Organized teaching lacking. (Rotating internship, twenty-one months.)

"Insufficient urology and too much surgery." (Rotating internship, eighteen months.)

"Low medical standards and poor supervision." (Rotating internship, fifteen months.)

Inadequate in internal medicine. (Mixed surgical internship, twenty-eight months.)

Medicine, pediatrics, and obstetrics poor. (Mixed surgical internship, two years.)

Inadequate experience in gynecology, obstetrics, otolaryngology, and urology. (Mixed surgical internship, two years.)

"Insufficient general training." (Mixed surgical internship, two years.)

Not enough minor surgery. (Mixed surgical internship, two years.)

GENERAL PRACTICE, INCLUDING OBSTETRICS

"Insufficient training in treatment of home and office patients and in prescription writing, and insufficient outpatient experience." (Rotating internship, two years.)

Not sufficient training in obstetrics, gynecology, and surgery for general practice. (Rotating internship, two years.)

Not enough organized teaching, no responsibility. (Rotating internship, two years.)

Inadequate experience in medicine, laboratory procedures, fluoroscopy, and prescription writing. (Rotating internship, twenty-one months.)

Pathology and didactic teaching unsatisfactory. (Rotating internship, eighteen months.)

"Insufficient surgery, urology, and gynecology in the outpatient clinics." (Rotating internship, eighteen months.)

Insufficient obstetrics and outpatient department experience. (Rotating internship, eighteen months.)

"Insufficient duration." (Rotating internship, fourteen months.)

Internal medicine and outpatient experience poor. (Rotating internship, one year.)

"Insufficient duration. No x-ray, pathology, anesthesia, or organized teaching." (Rotating internship, one year.)

"Insufficient duration." (Rotating internship and pathology, two years.)

"Insufficient general training." (Mixed medical internship, thirty months.)

Gynecology and obstetrics inadequate. (Mixed medical internship, two years.)

GENERAL PRACTICE, NO OBSTETRICS AND NO MAJOR SURGERY

Poor in specialties and organized teaching. (Rotating internship, twenty-eight months.)

Obstetrics, urology, and otolaryngology not satisfactory. (Rotating internship, two years.)

"Insufficient contact with private patients." (Rotating internship, two years.)

"Insufficient in economic and psychologic aspects of practice." (Rotating internship, two years.)

Experience with contagious disease inadequate. (Rotating internship, two years.)

Pediatrics, orthopedics, obstetrics, and outpatient experience unsatisfactory. (Rotating internship, sixteen months.)

Internal medicine and standards of work poor. (Rotating internship, one year.)

"Lack of acute material." (Rotating internship, one year.)

"Insufficient teaching and duration of experience in medicine, minor surgery, pediatrics, and contagion." (Rotating internship, one year.)

Insufficient gynecology and surgical pediatrics. (Mixed medical internship, two years.)

Surgical diagnosis and specialties inadequate. (Mixed medical internship, two years.)

"Insufficient instruction in outpatient clinics in eye, ear, nose and throat, and neurology." (Mixed medical internship, two years.)

Not enough experience in obstetrics, gynecology, pediatrics, and specialties. (Mixed medical internship, eighteen months.)

INTERNAL MEDICINE

Therapy and outpatient department experience poor. (Rotating internship, thirty months.)

Not enough training in ambulatory medicine and specialties. (Rotating internship, thirty months.)

"Insufficient medicine and too much surgery." (Rotating internship, two years.)

"Insufficient outpatient experience." (Rotating internship, two years.)

"Insufficient without a supplementary residency." (Rotating internship, twenty-one months.)

"Insufficient organized instruction and pathology." (Rotating internship, eighteen months.)

"Insufficient introduction to office practice." (Rotating internship, twelve months.)

"Insufficient concentration of experience." (Rotating internship, twelve months.)

Teaching, supervision, and discipline poor. (Rotating and straight internships, twenty-one months.)

Fundamental sciences lacking. (Mixed internship, two years.)

"Insufficient introduction to private practice and psychiatry." (Mixed medical internship, two years.)

Not enough experience in contagious disease, dermatology, and syphilology. (Mixed medical internship, twenty months.)

Pediatrics and surgery unsatisfactory. (Mixed medical internship, eighteen months.)

"Insufficient medicine." (Mixed gynecologic and obstetric internship, eighteen months.)

Poor experience in pathology, bacteriology, x-ray, electrocardiography, and pediatrics. (Mixed medical internship, sixteen months.)

Pathology and minor surgery poor. (Straight medical internship, eighteen months.)

INTERNAL MEDICINE AND MEDICAL SPECIALTIES

"Insufficient surgery, specialties, and obstetrics." (Mixed internship, twenty-four months.)

"Insufficient duration and scope." (Mixed internship, twelve months.)

INTERNAL MEDICINE AND ALLERGY

"Insufficient obstetrics and ear, nose, and throat." (Mixed internship, one year of surgery.)

CARDIOLOGY

"Insufficient pathology and general training." (Rotating internship, one year.)

GASTRO-ENTEROLOGY

"Insufficient medicine, pathology, and gastro-enterology." (Rotating internship, eleven months.)

"Insufficient organized teaching and duration of assignments." (Rotating internship, nine months.)

METABOLISM

"Insufficient medicine." (Mixed internship, twenty-four months.)

DERMATOLOGY

"Insufficient organized training." (Rotating internship, eighteen months.)

"Insufficient scope." (Rotating internship, twelve months.)

"Insufficient medicine." (Rotating internship, twelve months.)

NEUROLOGY AND PSYCHIATRY

"Insufficient obstetrics (for general practice)." (Rotating internship, two years.)

"Insufficient scope." (Rotating internship, one year.)

CHEST DISEASES

"Insufficient medicine." (Rotating internship, two years.)

"Insufficient pathology and clinicopathologic conferences." (Rotating internship, one year.)

PEDIATRICS

Inadequate experience in allergy. (Rotating internship, two years.)

Pediatric training and organized teaching poor. (Rotating internship, fourteen months.)

"Insufficient teaching and supervision." (Rotating internship, one year.)

"Insufficient teaching and supervision." (Rotating internship, one year; straight internship on contagious diseases, one year.)

Not enough outpatient work and preventive pediatrics. (Mixed internship, twenty-seven months.)

Ear, nose and throat, obstetrics, gynecology inadequate. (Mixed internship, twenty-five months.)

"Insufficient scope and outpatient department experience." (Mixed internship, two years.)

"Insufficient scope including pediatric surgery and ear, nose and throat." (Mixed internship, two years.)

Surgical pediatrics and otolaryngology unsatisfactory. (Mixed internship, one year; straight pediatric internship, one year.)

GENERAL SURGERY

Not enough orthopedics and dermatology. (Rotating internship, two years.)

"Lack of stimulation and inspiration." (Rotating internship, twenty-one and one-half months.)

"Insufficient duration." (Rotating internship, one year.)

"Insufficient major surgery." (Rotating internship, seven and one-

half months; mixed internship on gynecology and obstetrics and surgery, 20 months; private residency, twelve months.)

Medical diagnosis, pediatrics, and contagious disease training unsatisfactory. (Mixed surgical internship, three years.)

Not enough pathology and surgery. (Mixed surgical internship, two years.)

"Insufficient general experience." (Mixed surgical internship, eighteen months.)

"Insufficient duration of experience." (Mixed surgical internship, one year.)

GENERAL SURGERY AND SURGICAL SPECIALTIES

"Insufficient clinical x-ray correlation and outpatient experience." (Rotating internship, two years.)

"Insufficient duration." (Rotating internship, eighteen months.)

Urology, gynecology, gastro-enterology poor. (Mixed surgical internship, two years.)

"Insufficient outpatient, pre-operative and post-operative training, anatomy, physiotherapy, physiology, and applied mechanics." (Straight surgical internship, twenty-seven months.)

OPHTHALMOLOGY

Unsatisfactory in gynecology, obstetrics, and pediatrics. (Rotating internship, three years.)

"Insufficient instruction, staff meetings, rounds, and medical standards." (Rotating internship, eighteen months.)

Insufficient minor surgery, obstetrics, and organized teaching. (Rotating internship, one year.)

Organized teaching poor. (Rotating internship, one year.)

Obstetrics, gynecology, pediatrics, urology, and anesthesia unsatisfactory. (Mixed surgical internship, two years.)

OPHTHALMOLOGY AND OTOLARYNGOLOGY

"Insufficient clinical training and overemphasis on laboratory procedures." (Rotating internship, one year.)

Not enough organized instruction and otolaryngology. (Rotating internship, one year.)

"Insufficient duration and organized instruction." (Rotating internship, one year.)

OTOLARYNGOLOGY

"Insufficient responsibility." (Rotating internship, twenty-two months.)

"Insufficient correlation with private practice." (Rotating internship, sixteen months.)

"Insufficient duration." (Rotating internship, one year.)

Supervision and teaching poor. (Rotating internship, one year.)

Insufficient duration and otolaryngology. (Rotating internship, one year.)

"Insufficient duration." (Rotating internship, nine months.)

"Insufficient duration, teaching, and supervision." (Rotating internship, six months.)

Allergy unsatisfactory. (Mixed surgical internship, two years.)

Training in pediatrics poor. (Mixed surgical internship, eighteen months.)

Not enough surgery and neurology. (Mixed medical internship, one year.)

Medicine inadequate. (Straight surgical internship, one year.)

ORTHOPEDICS

"Insufficient attention to minor details of practice." (Rotating internship, two years.)

Not enough medicine. (Rotating internship, one year.)

Training in specialties not satisfactory. (Rotating internship, one year.)

Obstetrics, pediatrics, and medicine poor. (Mixed surgical internship, twenty-one months.)

UROLOGY

Surgery and pathology inadequate. (Rotating internship, eighteen months.)

Not enough ward material and urology. (Rotating internship, eighteen months.)

Outpatient experience poor. (Rotating internship, sixteen months.)

"Insufficient ward cases, supervision, teaching. Medicine poor." (Rotating internship, twelve months.)

"Insufficient medicine and obstetrics, and too much ambulance." (Rotating internship, twelve months.)

INDUSTRIAL SURGERY

Surgery and specialties not adequate. (Rotating internship, fifteen months.)

"Insufficient duration." (Rotating internship, twelve months.)

PROCTOLOGY

"Insufficient systematized instruction." (Rotating internship, eighteen months.)

"Insufficient medicine and obstetrics." (Straight surgical internship, two years.)

OBSTETRICS, SURGERY, AND GYNECOLOGY

"Insufficient operative surgery." (Straight medical and straight surgical internships, thirty-three months.)

OBSTETRICS AND GYNECOLOGY

Gynecology unsatisfactory. (Rotating internship, two years.)

Not enough major surgery. (Rotating internship, two years.)

“Insufficient preparation for residency.” (Rotating internship, seventeen months.)

“Insufficient special training.” (Mixed surgical internship, thirty-four months.)

Training in specialties and contagious disease unsatisfactory. (Mixed internship, two years.)

Gynecology unsatisfactory. (Straight surgical internship, two years.)

NEW YORK COMMITTEE ON THE STUDY OF HOSPITAL INTERNSHIPS AND RESIDENCIES

2 East 103rd Street, New York City

QUESTIONNAIRE TO GRADUATES OF NEW YORK CITY MEDICAL COLLEGES

Name Medical School
Year of graduation

I. Type of practice:

1. Which one or more of the following have you done and in what order?

General practice, including obstetrics, major surgery and other specialties

General practice, including obstetrics, and other specialties but no major surgery

General practice, including major surgery only

General practice, including obstetrics only

General practice, but no obstetrics and no major surgery

Special practice, limited to internal medicine

Special practice, limited to general surgery

Special practice, limited to what other field or fields

2. If in special practice, how many years did you spend in general practice?

3. Are you serving as assistant or associate to an older physician or surgeon in his private practice?

.....

4. Have you engaged in institutional or other salaried positions?

a. For how long a period

b. Full-time c. Part-time

d. Type of position

e. Type of institution

II. Location of practice:

1. Please indicate the order of previous changes in location:

City	Town	Country
------	------	---------

2. In what way did your internship influence the selection of your location?

III. Hospital connections at present:

Names of each:

Rank in each:

.....
.....
.....
.....

IV. Your intern experience: (Does not include resident experience, see item V.)

Please list below all the hospitals in which you have had an internship (including substituting) in the order served. An accurate report of the different types of experience will be much appreciated.

Internship 1. Hospital Dates

Approximate number of months spent on: Length of service...

- | | | |
|---------------------|--------------------------|---------------------------|
| 1. Medicine | 7. Psychiatry | 13. Urology |
| 2. Surgery | 8. Pathological lab. ... | 14. Orthopedics |
| 3. Pediatrics | 9. X-ray | 15. Dermatology |
| 4. Obstetrics | 10. Ambulance | 16. Anesthesia |
| 5. Gynecology | 11. Ophthalmology | 17. Unclassified above .. |
| 6. Neurology | 12. Oto-laryngology ... | |

Internship 2. Hospital Dates

Approximate number of months spent on: Length of service...

- | | | |
|---------------------|--------------------------|---------------------------|
| 1. Medicine | 7. Psychiatry | 13. Urology |
| 2. Surgery | 8. Pathological lab. ... | 14. Orthopedics |
| 3. Pediatrics | 9. X-ray | 15. Dermatology |
| 4. Obstetrics | 10. Ambulance | 16. Anesthesia |
| 5. Gynecology | 11. Ophthalmology | 17. Unclassified above .. |
| 6. Neurology | 12. Oto-laryngology ... | |

Questionnaire

Internship 3. Hospital Dates

Approximate number of monthsspent on: Length of service . . .

- | | | |
|---------------------|--------------------------|----------------------------|
| 1. Medicine | 7. Psychiatry | 13. Urology |
| 2. Surgery | 8. Pathological lab. ... | 14. Orthopedics |
| 3. Pediatrics | 9. X-ray | 15. Dermatology |
| 4. Obstetrics | 10. Ambulance | 16. Anesthesia |
| 5. Gynecology | 11. Ophthalmology | 17. Unclassified above . . |
| 6. Neurology | 12. Oto-laryngology ... | |

Note: If you have served an internship in additional hospitals record below.

1. Was there any organized teaching of interns?
2. If not, could this have been done?
3. Did you graduate as house physician? . . Or as house surgeon? . .
4. What other responsible positions did you hold *during your internship?*
5. Any special course in obstetrics before or subsequent to the internship?
6. Did you have any experience in the Out-Patient Dept. during your internship? Which clinics?

V. *Special training since internship:

1. Residency:

	Hospital	Dates of each
Medicine
Surgery
Obstetrics
Others

* If you have a record of your training and posts it may be substituted as an answer.

V. Special training since internship (continued):

2. Other graduate study—year and place. Please describe.

3. Have you had any out-patient experience since your internship?

Type of clinic

Duration

VI. Correlation of internship with practice:

1. Was it satisfactory for your type of practice?

Please explain.

2. In light of your present experience what type of internship would you recommend as better fitting the needs of your practice?

VII. Correlation of residency with practice:

If you had a residency, please use a separate sheet for giving the information asked for under items 1 and 2 of question VI.

APPENDIX FOUR. Forms for Recording Interns' Services and Rating

THE following are forms designed for recording the extent and quality of interns' service.

The first has been used in one of the hospitals and is designed to give an opportunity to the director of each service to render a systematic report of the progress of his interns. It is filled out at the end of the period of service and returned to the superintendent's office, where it is kept in a confidential file. If the forms are conscientiously filled out, the superintendent has a valuable source of information as to the progress of each of the interns—which, in the end, gives a composite of the interns' record on all services.

The second form was suggested by the American Medical Association to furnish information as to what the internship actually does. It records the extent of the intern's educational experience and is filled out by the intern himself. Since it must be checked by the resident, and finally by the chief of staff, it emphasizes their responsibility for the intern's training.

FORM I

Dear Doctor:

Kindly return this report with full notation as soon as possible.

Superintendent.

To the Superintendent:

Dr. has served as
 on the Service from
 and I am rendering the following report concerning his services:

PERSONAL CHARACTERISTICS	RATING	REMARKS
Personal appearance	_____	_____
Manner with associates	_____	_____
Initiative	_____	_____
Manner with patients	_____	_____
Conscientiousness	_____	_____
GENERAL PREPARATION		
Medical training	_____	_____
Knowledge of medical ethics	_____	_____
DIAGNOSTIC		
Skill in history taking and recording	_____	_____
Skill in physical examination	_____	_____
Judgment in interpreting results	_____	_____
OPERATIVE		
Quickness and manual dexterity	_____	_____
Ability to meet emergencies	_____	_____
Care of postoperative cases	_____	_____

Note: Grading on each point which it is possible to estimate.

"A" represents the highest possible grade and "E" the lowest, short of complete failure which is "F". Remarks column to be used for stating facts which have direct bearing on estimate of the work and which are not covered by numbered points.

Date.....

Signed.....M.D.

FORM II

.....Hospital

RECORD OF INTERNSHIP SERVICES Date

Service Began Ended

Admissions to service Outpatients Transfers

Deaths Autopsies obtained Witnessed ... Performed ...

List all clinical meetings attended

.....
.....

Histories written Physicals Laboratory examinations

List procedures (not standing orders) which you have had demonstrated, assisted in or individually performed (e.g. anesthetics, deliveries, spinal punctures, etc.):

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

I believe that greater emphasis on the following points would improve this service:

.....

Signed Intern

Checked Resident

Quality of service: Professional ability

Remarks:

Date Signed

Chief of Staff

APPENDIX FIVE. Conditions and Procedures To Be Considered in Intern Training

THE following lists were prepared at the suggestion of a leading figure in intern education. It was felt that an outline depicting the possible range of intern experience would be helpful in visualizing the hospital's task. No attempt has been made to cover the whole range of medicine, although as many as possible of the commoner conditions were included. If a check could be made of a number of representative hospitals as to how many of these conditions an intern encountered during his service, the comprehensiveness of his introduction to practice could be determined.

Attention is drawn to the diagnostic and therapeutic technics which were considered to be within the purview of the intern's training.

MEDICAL CONDITIONS

- I Respiratory infections
 - A Common cold
 - B Influenza
 - C Pneumonia
 - 1 Lobar
 - 2 Broncho
 - 3 Other
 - D Tonsillitis

- II Acute infectious diseases
 - A Erysipelas
 - B Septicemia
 - C Rheumatic fever
 - D Tetanus
 - E Cerebrospinal fever
 - F Typhoid fever
 - G Colon bacillus infection
 - H The dysenteries

- I Epidemic encephalitis
- J Poliomyelitis
- K Acute mononucleosis
- L Malaria

- III Venereal diseases
 - A Syphilis
 - B Chancroid
 - C Gonococcus infection

- IV Contagious diseases

- V Chest diseases
 - A Lungs
 - 1 Tuberculosis
 - 2 Bronchiectasis
 - 3 Emphysema
 - 4 Abscess
 - 5 Gangrene
 - 6 Tumors
 - 7 Industrial diseases
 - B Pleura
 - 1 Tuberculosis
 - 2 Empyema
 - 3 Serafibrinous pleuritis
 - 4 Malignancy

- VI Tuberculosis (general)
 - A Miliary
 - B Meningeal
 - C Peritoneal
 - D Osseous
 - E Glandular

- VII Allergic diseases
 - A Serum sickness
 - B Hay fever
 - C Asthma
 - D Digestive disorders

- VIII Heat exhaustion
- IX Poisoning
- X Deficiency diseases
- XI Diseases of metabolism
 - A Diabetes mellitus
 - B Obesity
 - C Gout
- XII Diseases of digestive tract
 - A Stomatitis
 - B Peptic ulcer
 - C Diseases of liver, gall bladder, and bile passages
 - D Pancreatic diseases
 - E Neoplasms
 - F Diverticulitis
 - G Diarrheas
 - H Constipation
 - I Colitis
 - J Appendicitis
- XIII Kidney diseases
 - A Nephritis
 - B Pyelitis
 - C Uremia
 - D Infections
 - E Nephrolithiasis
 - F Tumors
 - G Tuberculosis
- XIV Blood dyscrasias
 - A Anemias
 - B Leukemias
 - C Purpura
 - D Granulopenia
- XV Diseases of circulation
 - A Heart diseases
 - 1 Rheumatic

- 2 Arteriosclerotic
- 3 Luetic
- 4 Hypertensive
- 5 Congenital
- 6 Endocarditis
 - a Bacterial
 - b Others
- 7 Myocardial diseases and coronary occlusions
- 8 Cardiac arrhythmias
- 9 Diseases of the pericardium
- B General
 - 1 Atheroma and arteriosclerosis
 - 2 Thromboangiitis obliterans
 - 3 Raynaud's disease
 - 4 Syphilis
- XVI Diseases of ductless glands
 - A Diseases of thyroid
 - B Diseases of pituitary
 - C Diseases of suprarenal system
 - D Diseases of parathyroids
 - E Diseases of gonads
 - F Diseases of spleen
- XVII Diseases of locomotor system
 - A Diseases of muscles
 - B Diseases of joints
 - C Diseases of bones

}	Arthritis
}	Paget's disease
}	Tuberculosis
- XVIII Diseases of nervous system
 - A Syphilis
 - B Diseases of motor tracts
 - C Hereditary and familial diseases
 - D Myasthenia gravis
 - E Combined and multiple sclerosis
 - F Tumors
 - G Diffuse and focal disease of the brain
 - H Diseases of the peripheral nerves

- I General and functional diseases
- J Vasomotor and trophic diseases
- K Mental disorders
- L Vascular accidents, apoplexy, etc.

XIX Diseases of the skin

DIAGNOSTIC AND THERAPEUTIC PROCEDURES

- I Diagnostic procedures
 - A Ophthalmoscopy
 - B Otoscopy
 - C Transillumination of sinuses
 - D Pharyngoscopy and laryngoscopy
 - E Fluoroscopy of chest
 - F Fluoroscopy of gastro-intestinal tract
 - G Gastric analysis
 - H Insertion of duodenal tube
 - I Rectal examination and proctoscopy
 - J Vaginal examination
 - K Measurement of circulation
 - a Venous pressure
 - b Circulation time
 - c Oscillometry
 - L Determination of skin temperature
 - M Determination of vibratory sensation
 - N Paracentesis
 - a Thoracic
 - b Abdominal
 - O Lumbar puncture
 - P Electrocardiography
 - Q Tourniquet test
 - R Frei test
 - S Pirquet and Mantoux tests
 - T Schick and Dick tests
- II Therapeutic procedures
 - A Scrubbing of hands

- B Sterilization of patient's skin
- C Local anesthesia
- D Subcutaneous clisis
- E Intravenous clisis and injection of serum
- F Intramuscular injections
- G Induction of pneumothorax
- H Catheterization and bladder irrigation
- I Cystography
- J Intravenous urography
- K Intraspinal injection of serum
- L Blood transfusion and blood matching
- M Gastric lavage
- N Duodenal and biliary drainage
- O Oxygen administration
 - a Nasal catheters
 - b Oxygen tent
 - c Tests for oxygen percentage
- P Drinker respirator
- Q Administration of enemas
 - a Routine
 - b Preoperative
 - c Postoperative

SURGICAL CONDITIONS

- I Special medical problems complicating surgical procedure
 - A Upper respiratory infections
 - B Pneumonia
 - C Tuberculosis
 - D Diabetes
 - E Heart disease
 - F Nephritis
 - G Hypertension
 - H Syphilis
 - I Arteriosclerosis
 - J Thromboangiitis obliterans
 - K Hyperthyroidism

- L Senility
- M Adiposity
- N Pregnancy
- II Surgical conditions
 - A Head
 - 1 Eyes
 - a Glaucoma
 - b Infections
 - c Neoplasms (constricted visual fields, etc.)
 - d Choked disc (cerebral pressure)
 - 2 Nose
 - a Sinusitis
 - b Polyps
 - c Ulceration and epistaxis
 - d Abnormalities of smell (brain neoplasm)
 - e Deviation of septum
 - 3 Ears
 - a Otitis media
 - b Furunculosis
 - c Mastoiditis
 - d Petrositis
 - e Abnormalities of hearing (neoplasms, syphilis, etc.)
 - 4 Mouth
 - a Alveolar abscess
 - b Pyorrhea, caries
 - c Epulis
 - d Neoplasms of tongue, lips, etc.
 - e Congenital defects
 - B Neck
 - 1 Thyroid struma
 - 2 Adenopathy (primary and metastatic)
 - 3 Abscess (superficial and deep cervical)
 - 4 Branchial cleft tumors
 - C Chest
 - 1 Lipoma
 - 2 Carcinoma of breast vs. benign neoplasm

Diagnostic and Therapeutic Technics 415

- 3 Lung abscess and neoplasm
- 4 Empyema
- 5 Fractures of spine
- 6 Fractures of ribs
- 7 Pulmonary collapse
- 8 Osteomyelitis (clavicle, ribs, etc.)
- 9 Punctured wounds (hemothorax, pneumothorax)
- 10 Adhesive pericarditis

D Abdomen

- 1 Gastric ulcer and carcinoma
- 2 Pyloric stenosis
- 3 Gastric hemorrhage
- 4 Duodenal ulcer
- 5 Appendicitis
- 6 Cholecystitis and cholelithiasis
- 7 Pancreatitis
- 8 Diverticulitis
- 9 Liver abscess
- 10 Peritonitis
- 11 Ileus
- 12 Mesenteric embolism and thrombosis
- 13 Neoplasms
- 14 Renal stone
- 15 Renal carbuncle
- 16 Perirenal abscess
- 17 Bladder stone
- 18 Perforation of hollow viscus: stomach, bladder, intestine

E Extremities

F Osseous system

G Dermatologic system

- 1 Furuncle
- 2 Carbuncle
- 3 Erysipelas

III Care of emergencies and minor surgical conditions

A Fractures

- 1 Handling

- 2 First aid splinting
- 3 Measures in compound fracture
- 4 X-ray utilization (legal aspect)
- B Hemorrhage
 - 1 Pressure control
 - 2 Tourniquet use and dangers
 - 3 Ligation and suture
 - 4 Care of shock
 - 5 Blood transfusion
- C Asphyxiation
- D Lacerations and puncture wounds
 - 1 Cleansing and suturing
 - 2 Use of tetanus antitoxin
 - 3 Drains
- E Incision and drainage of
 - 1 Furuncle
 - 2 Abscess
- F Foreign bodies
 - 1 Eye
 - 2 Nose
 - 3 Ear
 - 4 Air passage
 - 5 Rectum
 - 6 Urethra
 - 7 Under the skin
- G Simple operative procedures
 - 1 Excision sebaceous cysts
 - 2 Excision verruca
 - 3 Corns
 - 4 Ingrowing nails
 - 5 Injection of varicose veins
 - 6 Simple herniae (under supervision)
 - 7 Simple hemorrhoidal conditions (under supervision)
- IV Preoperative care of patients
 - A Estimation of operative risk
 - B Selection of anesthesia

- C Preparation
 - 1 Fluid intake
 - 2 Preparation of skin
 - 3 Preparation of patient mentally
 - 4 Preoperative drugs
 - 5 Gastric lavage
 - 6 Preparation of bowels
- D Responsibilities as to records, laboratory reports, and physical examinations

- V Preparation on part of intern
 - A Study of anatomy of the operative area
 - B Study of operative technics
 - C Study of pathology of condition
 - D Practice of simple technics, as tying of ligatures and sutures, handling of instruments, etc.
 - E Familiarization with operating room teamwork and aseptic procedures

- VI Duties in operating room
 - A Technic in scrub-up, putting on of gown and gloves
 - B Preparation and draping of patient
 - C Assisting with operation
 - D Subcutaneous and intravenous clyses

- VII Postoperative duties
 - A Care during recovery from anesthetic and shock of operation
 - B Preparation of ether bed
 - C Dressings, removal of drains, sutures, etc.
 - D Diets
 - E Possible complications
 - F Care of the bowels
 - G Daily visit
 - H Administration of sedatives

OBSTETRIC CONDITIONS

- I Diagnosis of pregnancy
 - A Subjective manifestations

- B Objective manifestations
- C Laboratory tests
 - 1 Aschheim-Zondek
 - 2 Friedman
 - 3 X-ray findings

- II Antepartum care of patients
 - A Management of pregnancy
 - 1 Routine observations: measurement of pelvis, urinalysis, blood pressure, physical examination, and Wassermann
 - 2 Diet
 - 3 Care of bowels
 - 4 Clothing
 - 5 Exercise and rest
 - 6 Care of breasts
 - 7 Sexual intercourse
 - 8 Return visits
 - 9 Danger symptoms and signs
 - B Diagnosis of presentation, position, and posture
 - C Complications
 - 1 Toxemia
 - 2 Nephritis
 - 3 Anemia
 - 4 Tuberculosis
 - 5 Heart disease
 - 6 Vomiting
 - 7 Placenta previa
 - 8 Extra-uterine pregnancy
 - 9 Abnormalities of uterus or bony pelvis
 - 10 Endocrine dysfunctions
 - 11 Abortion
 - 12 Prolonged pregnancy or missed labor
 - D Selection of type of delivery

- III Management of delivery in hospital or home
 - A Preparation of sterile supplies and instruments

- B Aseptic technic
- C Nursing assistance
- D Preparation of patient
- E Management of normal labor
 - 1 Re-check of measurements
 - 2 Vaginal examination
 - 3 Rectal examination
 - 4 Auscultation of fetal heart sounds
 - 5 Management of second stage
 - 6 Management of third stage
 - 7 Analgesia and anesthesia
- F Management of abnormalities of labor
 - 1 Malpositions
 - 2 Hemorrhage
 - 3 Prolapsed cord
- G Multiple pregnancy
- H Operative delivery
 - 1 Forceps application and use (supervised intern training)
 - 2 Version
 - 3 Limitations of general practitioner
 - 4 Conditions requiring services of a specialist
- IV Postpartum care
 - A Immediate
 - B Detection and repair of lacerations
 - C Puerperal infection
 - D Subsequent examinations
 - 1 Pelvic floor and perineum
 - 2 Cervix
 - 3 Uterine position
 - 4 Urinalysis
 - E Care of breasts
- V Care of the baby
 - A Newborn
 - B Neonatal complications
 - C Well-baby and feeding clinics

PEDIATRIC CONDITIONS

- I General consideration
 - A Hygiene and general care of infants and children
 - B Care of premature and delicate infants
 - C Growth and development
 - D Peculiarities of disease in children
- II Newborn
 - A Asphyxia
 - B Hemorrhage
 - C Congenital defects
 - D Acute infections
 - E Birth injuries
- III Nutrition
 - A Infant feeding
 - B Childhood feeding
 - C Complications
 - 1 Vomiting
 - 2 Diarrhea
 - 3 Constipation
 - 4 Colic and flatulence
- IV Deficiency diseases
 - A Scurvy
 - B Rickets
 - C Tetany
 - D Beriberi
- V Diseases of the alimentary tract
 - A Pyloric stenosis
 - B Recurrent vomiting, etc.
- VI Diseases of mouth, nose, throat, ears, eyes
- VII Diseases of the lungs
 - A Atelectasis
 - B Pneumonia
- VIII Diseases of the circulatory system
 - A Functional

- B Congenital
 - C Pericardium
 - D Endocardium
 - E Myocardium
- IX Diseases of the hemopoietic system
- X Diseases of the spleen and lymph nodes
- XI Diseases of the bones and joints
- XII Diseases of the ductless glands
- XIII Diseases of the urogenital tract
- A Pyelitis
- XIV Diseases of the genital organs
- A Adherent prepuce
 - B Phimosis
 - C Hydrocele
 - D Undescended testicle
 - E Vulvo vaginitis
- XV Diseases of the skin
- XVI Diseases of allergy
- XVII Functional nervous disorders
- XVIII Organic nervous disorders
- XIX Diseases of the muscles
- XX Specific infections
- | | |
|---------------|----------------------|
| Scarlet fever | Erysipelas |
| Measles | Typhoid fever |
| Rubella | Paratyphoid fever |
| Varicella | Dysentery, bacillary |
| Pertussis | Dysentery, amebic |
| Poliomyelitis | Malaria |
| Influenza | Typhus fever |
| Mumps | Spotted fever |
| Rabies | Glandular fever |
| Diphtheria | Tuberculosis |

Tetanus	Rheumatic fever
Syphilis	Meningococcus meningitis
Chorea	Other forms of meningitis

DIAGNOSTIC AND THERAPEUTIC PROCEDURES IN PEDIATRICS

- I Diagnostic procedures
 - A Measurements of infant
 - B Rectal temperature
 - C Ophthalmoscopy, pharyngoscopy, otoscopy, laryngoscopy
 - D Collection of urine
 - E Blood specimens for
 - 1 Hemoglobin and blood count
 - 2 Wassermann
 - 3 Chemistry
 - F Spinal puncture
 - G Cistern puncture
 - H Abdominal paracentesis
 - I Thoracentesis
 - J Skin tests
 - 1 Schick test
 - 2 Dick test
 - 3 Tuberculin test
 - 4 Schultz-Charlton test
 - K Laboratory tests
 - Special procedures such as coagulation time, fragility tests, and determinations of calcium, phosphorus, and phosphatase
- II Therapeutic procedures
 - A Use of premature bed or incubator
 - B Rest
 - C Diet
 - 1 Infant feeding
 - 2 Feeding of children
 - D Administration of fluids
 - 1 Oral
 - 2 Nasal drip

- 3 Rectal
 - 4 Hypodermoclysis
 - 5 Intraperitoneal clysis
 - 6 Intravenous clysis
 - E Transfusion
 - F Hydrotherapy
 - 1 Cold sponge
 - 2 Cold pack
 - 3 Cold bath
 - 4 Hot bath
 - G Mustard bath and pack
 - H Ice cap and collar
 - I Local heat application
 - 1 Types
 - 2 Dangers
 - J Application to ear, nose, and throat
 - 1 Intubation
 - 2 Extubation
 - K Inhalation
 - L Oxygen administration
 - 1 Methods
 - M Gastric lavage
 - N Gavage
 - O Enemata and intestinal irrigation
 - P Injection of serums
 - 1 Technics
 - 2 Dangers
 - Q Anesthetics
 - R Massage
 - S Drinker respirator
 - T Artificial respiration
- III Prophylaxis
- A Smallpox vaccination
 - B Diphtheria toxoid
 - C Whooping cough vaccine
 - D Dick vaccine

DIAGNOSTIC LABORATORY TESTS

- I Urinalysis
 - A Qualitative
 - B Quantitative
 - C pH concentration of urine
 - D Microscopic
 - E Addis count

- II Kidney function tests
 - A Concentration
 - B P.S.P. test
 - C Urea determination
 - D Urea clearance

- III Hematologic examination
 - A Hemoglobin
 - B Cell count, red and white
 - C Schillings count and reticulocyte count
 - D Color index
 - E Volume index
 - F Platelet count
 - G Blood pathology, malaria, etc.
 - H Staining methods and morphology
 - I Coagulation time
 - J Clot retraction
 - K Bleeding time
 - L Sedimentation rate

- IV Bacteriologic preparations
 - A Gram and methylene blue stains
 - B Stains for tubercle bacilli
 - C *Trichomonas vaginalis*

- V Gastro-intestinal examinations
 - A Vomitus
 - B Gastric contents
 - C Biliary drainage, pancreatic ferment

} routine, chemical,
} microscopic

- D Stools
 - 1 Gross characteristics, microscopic
 - 2 Ova and parasites
- VI Pleural and peritoneal fluids (transudates and exudates)
- VII Liver function tests
 - A Galactose tolerance
 - B Icterus index
 - C Van den Bergh
 - D Takata-Ava test
- VIII Blood chemistry and culture
- IX Blood grouping and matching
- X Spinal fluid examination, including colloidal gold
- XI Serologic and complement fixation tests
- XII Physiologic tests
 - A Aschheim-Zondek
 - B Friedman
- XIII Animal inoculation
 - A Guinea pig
 - B Mouse
- XIV Sputum examination
 - A Typing in pneumonia
 - B Gross and microscopic
 - C Tubercle bacillus concentration
- XV Technic for collection of laboratory specimens
- XVI Gross and microscopic examination and staining of tissues

APPENDIX SIX. Opinions of Directors of Service and Attending Staff Members Regarding the Value of Residencies

SURGICAL SERVICES WITH RESIDENTS

GYNECOLOGY

"Residents are essential; they teach interns their duties and the technics of examination."

OBSTETRICS AND GYNECOLOGY

"For training as a specialist, the residency is absolutely essential."

"The three-year residency here is adequate as a preparation for specializing. The vast majority of men doing obstetrics and gynecology are inadequately prepared."

OTOLARYNGOLOGY

"If they stay on two or more years, they become very efficient otolaryngologists. They are well trained in basic problems and are ready for further development as assistant adjuncts and then members of the regular attending staff."

OPHTHALMOLOGY

"After their residency the men are able to carry out independent eye practice, including surgery."

OPHTHALMOLOGY AND OTOLARYNGOLOGY COMBINED

"After three years, they are qualified to practice general eye, ear, nose, and throat work, but the training is not complete—it cannot be in both fields. The ideal would be to separate the services, but the material would not warrant it."

ORTHOPEDICS

"The residency affords an excellent opportunity for these men to thoroughly study many cases of all types."

"Residents are not turned out as finished specialists. All should go into general practice with emphasis on orthopedics. After additional years in the clinic and hospital under guidance, they are competent to limit their practice to this field."

"A resident is essential on my service. It is the only real method of training specialists. I do not favor a period of practice first."

UROLOGY

"Urologists should have a surgical internship for two years and then three years in urology."

SURGERY

"Excellent to have a resident on the service. One of the best stepping stones to a specialty."

"Having a resident is a great improvement on this service. It is an excellent method of training a specialist. He is turned out as a capable surgeon."

"A resident is essential on this service. He should have three years training for specialization. A period of two to three years in practice between the internship and residency is considered desirable."

"I do not believe a resident is desirable. He interferes with the intern's development. The residency is unnecessary for the training of specialists."

"I am not sure having a resident makes much difference in the care of patients. Probably the interns are better trained. I believe the residency is the only avenue for training specialists."

"It is my belief that after five years of training, the resident is fully competent to do any type of general surgery."

"There must be more fellowship opportunities to develop material for the specialties, as otolaryngology, ophthalmology, urology, oral surgery, etc."

ORAL SURGERY

"A three-year service properly set up would be ideal. The residency is necessary for specialization. The ideal content would be study of

anatomy of the face, jaw, and neck with dissection, pathology, bacteriology, with regular services in the hospital and in the outpatient department. The problem is the separation of the dental and surgical fields."

NEUROSURGERY

"A resident is absolutely essential on my service and serves an important function. He will learn much about handling patients if he works in an O.P.D. as an intern for six months before becoming a resident."

SURGICAL SERVICES WITHOUT RESIDENTS

GENERAL SURGERY

"If a residency could be installed, the intern's training could be designed to give him the experience he really needs. After two years it should be comparatively easy to pick the right material for residents."

"Assistant adjuncts are used as substitutes for a resident. The training given the interns is excellent, but it puts a strain on the attending staff because of having to break in new men. Residents would be a great help to the attendings, but the material is insufficient."

"I am not in favor of a residency, for it interferes with the training of the interns and the adjunct staff. A half-time postgraduate plan is more satisfactory."

"In general I do not think it would be desirable to have a resident on my service. The residency is no doubt an excellent way to train specialists, and for a field such as neurosurgery, a fairly prolonged residency would be essential. I am not convinced, however, that the greatest good for the greatest number is served by the surgical resident system, as it is now in vogue in some large teaching centers, from the standpoint of general surgery."

"We do not have a large enough service to give a resident much work, without interfering with the training of assistants and interns. I think the interns get better training from the attending staff than they would from a resident."

"A resident is desirable from the point of view of care of patients,

and is essential for training of specialists. The plan in mind is as follows: First year, surgical pathology; second year, assistant resident; third year, resident."

"The specialist of the future must have training through the residency. The day of the specialist trained after ten years in general practice is gone forever."

"Training in surgery, by means of the residency, is the ideal method, but it is impractical at this hospital because of its small size and the limited amount of clinical material."

"A resident would give enormous improvement. There is a vast amount of untouched material here. It is the basic essential for furnishing a higher grade of service, and would add necessary additional instruction to carry out a uniform plan. Modern surgery makes a residency essential for training as a specialist. The amount of material here would obviate any conflict with the junior attendings. It would enhance the training."

ORTHOPEDICS

"Not enough work to justify a resident, but desirable from my point of view."

UROLOGY

"The service is not sufficiently large to warrant a resident. I believe the residency is desirable for training of specialists."

"A resident will be desirable when the service is better organized."

"A residency would be desirable from the point of view of care of patients, but would probably detract from the training interns receive on a small service. It would be all right on a larger service. The residency is one of the definitely excellent methods of training specialists."

"It would be excellent to have residents, and very desirable for training of specialists."

"The residency is a valuable means of training specialists. With interns only, the emphasis is too much an operative technic, while surgical pathology is neglected and surgical follow-up is not participated in."

OPHTHALMOLOGY

"I would approve of having a resident. It would be necessary to have a department equipped with modern facilities, beds for eye cases, and an adequate number of nurses."

GYNECOLOGY

"The resident insures better care for the patients, and better training of the interns."

For the most part, there was general approval of residencies among attending surgeons in the surgical specialties. The only drawback was the limited size of the special service in the average hospital. As evidenced by the comments listed, the chief objections have been voiced by men in general surgery.

MEDICAL SERVICES WITH RESIDENTS

INTERNAL MEDICINE

"A resident insures better care of patients, and furnishes invaluable additional instruction to interns. The residency starts the assistant attending staff at a more satisfactory level."

"I believe the residency gives a better introduction to internal medicine."

"It is a step in the right direction to take an intern who has served a year in a rotating service and have him serve as a resident for one or two years."

"The training here is for specialization. All are headed for internal medicine. Several men now prominent in this field were former residents."

"The preparation is designed for men desiring to specialize in internal medicine, particularly in teaching institutions. I lean toward a more mixed type of service as a preparation for internists specializing in this field alone."

"The resident here must have had four years previous experience. The men who have had five years training have been turned out as outstanding men."

PEDIATRICS

"Having residents works out very well on my service. The residency is good training for specialists, while a one-year special internship fits men for general practice with emphasis on pediatrics."

"I couldn't consider this service without a resident. It is essential for intern supervision. It is the best road toward training specialists."

- "1. Essential for training of specialists.
- "2. Essential for good quality of service.
- "3. Best previous preparation—internal medicine, pediatrics, and otolaryngology."

"I believe home visits should be made during the residency. Former residents going into practice don't know how to improvise and utilize home facilities. Promising residents have been sent to other centers for one to two years, after which they return to serve on my staff."

"It is very essential to have residents on my service. The residency is one of the best avenues of approach to a career in academic pediatrics."

NEUROLOGY

"Residents are essential on my service. Residencies are absolutely necessary for training specialists. Best preparation for residency—rotating internship, as a rule. The present resident had been in practice and has been an exceptionally successful man in every way."

"Residency very necessary for continuation of postgraduate training."

NEUROPSYCHIATRY

"Heartily in favor of a resident on the service."

CHEST DISEASES

"There is no better method of acquiring a specialty than through a residency."

"Our service provides an excellent system for modern care of chest conditions, giving the interns and one resident very good opportunity for chest training."

“Residents insure better care for the patients. Essential for proper training of the interns, since they are only on service three months, and need someone to furnish continuity of high standards. In learning the ‘ins and outs’ of chest conditions, a prolonged period in residency is essential for sufficient grounding.”

MEDICAL SERVICES WITHOUT RESIDENTS

INTERNAL MEDICINE

“The question of residency does not apply.”

“The general trend of the house staff is against the development of residencies, for the reason that they interfere with their experience.”

“It would not be possible to have a resident here at present, because of the limited number of beds. However, I believe it would be of material benefit for the man wishing to specialize, and also from the point of view of patient care.”

“I do not think it would be an advantage to have a resident on my service from any point of view—care of patients, training of interns or junior attending staff, and no advantage for training specialists.”

“Not essential for care of patients. Would take responsibility away from the house physician. As for the training of specialists, believe it narrows them too early.”

“My service is not large, and it would not work out very well to have a resident. I believe, however, that a residency is desirable form of training for specialists.”

“With a properly qualified resident, the whole level of the service is elevated and unified. Residency is essential to the training of a specialist.”

“After finishing the internship here, the men should have the equivalent of a one-year residency at another institution to get a different point of view.”

“Would be desirable to have a resident, and a great aid in providing the best care in a city hospital, especially one in a relatively inaccessible location. It should improve the quality of intern instruction and supervision. Excellent basis for medical practice.”

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"A resident would insure better continuity of service and higher standards. Should furnish invaluable extra training to the interns."

"I am opposed to medical residencies. After the internship, the man should begin contact with practice and conditions outside the hospital."

PEDIATRICS

"Decent care cannot be given to the children until a resident is provided. Residency is the only way for a man to begin special training. The junior attending staff would welcome a resident."

"A resident has been applied for, but not granted yet. It is the best means of training a specialist."

"An adequate internship cannot be given until a resident is installed. With thirty beds I can easily use one resident and one intern."

"No place for a resident here. Not desirable for training of specialists."

"A residency, after a well rounded internship, gives a man by far the best fundamental training in this subject."

"Residents, while desirable, are not feasible at this hospital. With only twenty-five beds, and lacking research facilities, a good quality of resident could not be obtained. In the larger teaching hospitals a residency system must be used and is admirable basic training."

DERMATOLOGY

"Dermatologists should be trained through a residency instead of the present generally used plan of half-time in a dermatologist's office and half-time in a clinic."

"Not necessary."

ANCILLARY SPECIALTIES

PATHOLOGY

"For an intern, one year in pathology is a desirable minimum. If he enters pathology as a profession, he may take one to two years in residency status, and then be appointed an instructor."

"A one-year pathological internship would be ideal, but it is not financially feasible."

"At least six months on pathology is a desirable minimum for all."

"At least one year should be spent in tissue pathology, bacteriology, and chemistry. After this, if he is deserving, a residency or fellowship of two years more should be arranged."

RADIOLOGY AND ROENTGENOLOGY

"I have had no experience with residents, but would be glad to have one."

"An ideal plan would be a one-year preliminary x-ray internship followed by a two-year residency."

"Roentgenology is somewhat different from other specialties, in that it can be taught partly in the private office of a practicing specialist."

PHYSICAL THERAPY

"Hardly feasible."

"I feel keenly that this should be a part of training toward general practice."

ANESTHESIA

"I am not in favor of residents. Intensive training of the interns, as we have been doing, has given very satisfactory results."

"A competent anesthetist should be able to give any of the inhalation, rectal, intravenous, and spinal anesthetics. The best system now is a proper use of combinations, and it needs a doctor specialized in anesthesia to decide."

"I favor a residency from the point of view of better experience, stimulation of scientific work, collection of data, and keeping of records."

"A residency is desirable, but not essential."

APPENDIX SEVEN. Descriptions of Internships and Residencies in Selected Hospital Situations

FOR the purpose of evaluation, the analyses of internships and residencies in the body of the report were necessarily topical in nature. However, it occurred to the Committee that the reader might be able to visualize more clearly some of the problems of the study if typical hospital situations were presented. The following descriptions in no instance fit any given hospital exactly; but each description includes only facts actually observed in the hospitals during the course of the study.

Hospital A

This hospital was of considerable size, with ample space for every form of medical activity. There were large general wards organized into separate highly developed services, as well as semiprivate and private pavilions for the accommodation of all classes of patients. The buildings were well constructed, modern, clean, well maintained, with seemingly every provision for sustaining the best standards of medical care.

One could not help but be impressed with a fine administrative organization, the program being clearly defined and carried out with precision. As an evidence of a fine working arrangement with the attending and house staffs, it was worth noting that when the desirability of discontinuing a one-year internship was apparent, the superintendent appointed a joint attending staff-intern committee to draft the new two-year plan. After being promulgated, it was adopted without modification in the hospital. There were three intern committees: one in charge of examinations, the second in charge of intern problems, and the third the intern council elected from among the interns themselves. At the end of each intern service, each member of the attending staff on duty was required to send a written report to the superintendent as to the record of the interns under his care. At the

request of the intern group, a system of routine health examinations had been instituted and the records kept in a confidential file. Ample out-of-door recreation facilities were of great value in keeping the house staff at maximum physical efficiency.

Interviews with members of the attending staff and observations made at the time of conferences and at daily rounds in the operating rooms and in the laboratories left the impression of a well qualified group of physicians with a high level of scientific spirit and interest.

On the surgical service, for example, the interns received a considerable amount of bedside and operating-room teaching, with adequate opportunity to participate in the discussion of cases. One attending surgeon was of the opinion that there was not enough supervision given to determine intern deficiencies. It was his belief that approximately 90 per cent of the interns had been very satisfactory. He voiced the opinion that a senior service of only four months on surgery was definitely inadequate, and that as a preparation for a surgical career a two-year general internship with emphasis on internal medicine should be followed by two years more of surgical residency.

The attending physicians in the medical service were men of outstanding scientific attainments and a genuine interest in internship and residency education. The active supervision given a highly organized program and the quality of bedside teaching were impressive. The senior intern accompanied his chief for an hour each day on consultations. He was stimulated to publish one case each year, fully worked up, with a review of the literature. He received individual instruction and oversight in hospital routines.

In the heavy schedule of this service, no time was left for house staff experience in the outpatient clinics. It was maintained that if the ward possibilities were fully utilized, there could be no time for the O. P. D. There were no residents on either of the above services.

Pediatrics also had a notable staff, but its members were far from satisfied with the training given their interns. This is but one example of a widespread deficiency of pediatric training in the average rotating internship. In this instance, only two months of the junior service

had been allocated, and the net educational gain had been negligible. Until assignment of four to six months, with ample outpatient participation, could be provided, the staff felt that the arrangement was woefully inadequate. The main need was for fundamental training in the physiology and normal development of the child.

The neurologists reported a great improvement in the preparation of medical students not only in the fundamentals of this field but in a better appreciation of patients as personalities. The teaching given was well organized, and the opportunities of the interns had been recently extended by increasing their assignment from one to three months. Great care was taken to protect the interns from exploitation by the attending staff, who were prone to draft them to assist with special problems and research. Their time was too short for anything but the fundamentals of the field.

A notable provision was the insistence that the interns and residents be on the wards during visiting hours to talk with the families of patients, in order to acquire personal knowledge of each patient's situation. It was felt that the success of the service and the house staff's development was directly predicated on the example set by their superiors on the visiting staff. The ideal clinician was considered to be one who learns to think for himself, and who will work out the problem of each patient before trying any laboratory short cuts to diagnosis.

There were residents on both pediatrics and neurology, and they contributed materially to the teaching. They were given unusual facilities for cognate basic science studies and were considered to be in preparation for careers as specialists. Each man was encouraged to work on a research *Arbeit*.

Obstetrics was omitted from the rotating internship; and it would seem a fair assumption that unless special internships in this field could be obtained elsewhere, such cases should be excluded from the practice of men coming from this hospital.

However, there was ample teaching given in gynecology, to both interns and residents, in both its hospital and office-practice aspects. The residents worked regularly in the outpatient clinic and learned

the medical aspects of their craft. The director made daily rounds, saw each new case, discussed the diagnostic problem with his entire staff, and carried through therapeutic procedures with them.

On otolaryngology also were found inadequacies of intern education. Furthermore, the attending staff reported evidences of poor medical school preparation for the internship. The average man seemed entirely "green" when confronted with an abnormality of the ear, nose, or throat. This deficiency was not made good by the one month of juniorship. Until a new system could be instituted giving the seniors an additional two months with opportunity to attend outpatient and follow-up clinics and to study the anatomy, physiology, and pathology of these special areas, the experience was not a desirable introduction to the needs of every-day practice.

With the residents, the situation was much better. They were given a graded experience, with increasing responsibility and with provision for six months of laboratory studies. However, more opportunities for anatomy and pathology were urgently needed.

On this service, there was need of a better investigative spirit among the residents. Few of them worked on special problems or produced papers, and reading interests were decidedly desultory. Perhaps otolaryngological services tend to draw candidates with a mechanical turn of mind and overemphasize diagnostic and therapeutic technics.

Ophthalmology was not included in the internship, either as a separate service or by organized teaching. The only exception was ophthalmoscopic examination of cases on the wards. This is but another example of the widespread deficiency of preparation for the future general practice needs of the average intern.

While time was provided for dermatology, it was merely a minor portion of a specialty service devoted to seeing incidental ward cases. Dermatological courses taken during medical school did not appear to be of much value, and the hospital experience gave very little additional competence. Unless the interns did active studying—which was seldom the case—there was little real development.

It was the conviction of the visiting staff that interns interested in properly preparing themselves should spend a minimum of three

months' full time in dermatology and syphilology. During this time, they should have charge of ward cases, work in the outpatient department three times a week, present thoroughly worked-up cases at conferences, prepare a paper on some particular phase of the subject, have some contact with histopathology, and be present at all consultations. There appeared to be a definite lack of appreciation on the part of the interns of their opportunities in this field and of its value in future practice.

In pathology, the work was beautifully organized with a highly developed *esprit de corps* on the part of interns and residents. They benefited by the influence of inspiring teachers. As a consequence, the house staff were applying themselves enthusiastically. All work was done under careful supervision, and their training in gross pathology, clinical microscopy, hematology, chemistry, and bacteriology was excellent. Unfortunately, the time in the regular internship was too brief. Only those obtaining extra assignments of six to twelve months really obtained a grasp of the pathology of disease.

A similarly high degree of organization and teaching spirit was found in the roentgenology department, where the interns were welcomed for both formal and informal instruction. A weekly clinico-roentgenologic conference for the house staff was of especial value.

Again it was noted that the training received by the average intern during his student days was of little apparent value. There was need for a much better arrangement for correlating it with the basic courses of anatomy and physiology, as well as with those in clinical medicine.

The residency was composed of systematic instruction and experience in the diagnostic and therapeutic procedures included in radiology. While of excellent quality, it could have been extended in duration with benefit.

In physical therapy, there was little interest or contact on the part of the interns. The opportunity was present but little utilized.

The residencies have already been mentioned under the separate services. In addition, mention should be made of appointments made to the private pavilions, which were also erroneously called residen-

cies. These men were paid good-sized salaries to look after the private patients but had little responsibility for their care. Those on surgery had an opportunity to see excellent technic and were useful to their chiefs in furnishing skilled assistance. However, the stimulus of participation in the diagnostic studies of interesting cases was absent, and the meagre case records were in sharp contrast to those kept on the ward services. Private patients had had their studies completed before entering the hospital and so added little to the education of the house staff. These men should not be listed as residents but as private assistants.

The interns as a group made a good impression. They had been selected from a large number of applicants and almost without exception had been outstanding medical students. There was obviously great respect for the institution and for the visiting staff. One could not help but be impressed with their earnestness, hard work and capacity for study. Toward their patients, there was a commendable spirit in always being available during visiting hours in order to get acquainted with the relatives. This required an up-to-the-minute knowledge of each case, and knowing the patient's name—which is a small but immensely important matter. An exceptional social service has contributed much to this attitude.

All the interns appeared to be working very hard, and this was especially true of the house physicians and house surgeons. There seemed a need for installation of residencies on medicine and surgery.

The reading habits of these men were in marked contrast to those of the majority of interns. Fully half of them were to be found in the library daily, including their evenings off ward duty. Others were to be found in the record room, studying groups of cases for conference presentation or for publication. So well have they been trained in case presentation that their work in this respect compares very favorably with that of visiting staff members on the same program.

Precedent books have been compiled and have given valuable guidance to the interns during the introductory period of their training. To illustrate, there were explicit directions as to the collection of laboratory specimens and the details of technic. One page was devoted to

the function of social service and an entire chapter to matters of house staff-nursing staff cooperation. Care was taken to outline the order of record keeping, details of hematological examinations, intravenous medication, oscillometry, and similar duties expected of the interns. Laboratory guides in mimeographed form were presented to every intern.

The case records were worthy of especial comment and praise, for they were typed according to a definite outline and carefully checked by responsible members of the attending staff. One intern was seen at work one evening in the record room, studying all empyemas in children over a ten-year period. He was asked how many charts were defective or revealed the absence of essential items. His answer, "Not a single one," was significant of the quality of the system.

Considerable formal teaching for the interns was provided, there being over a hundred seminars or lectures during the course of a year.

In summary, the conclusion seemed warranted that this internship had many very commendable features. Its chief difficulty was a too comprehensive rotating internship with inadequacy of some of the short assignments. The heavy demands of such an exacting ward service schedule prevented the allowance of time for outpatient experience. Solution of the problem required only rearrangement of the general plan. All the fundamental requirements of an internship of first rank were already satisfied.

Hospital B

In this institution, the internship situation was so different as to be almost antithetical. The building was poorly constructed and poorly kept up. Internal arrangements were not of the best, and there was lack of sufficient space, with resultant crowding. One was not impressed with either efficiency of system or of organization.

A one-year internship has been in use, but its inadequacy was recognized and steps have been taken to institute a two-year rotation. Another difficulty had been the inability to secure good intern material, with resultant use of undesirable foreign graduates. No attempt had been made to introduce health examinations, and there were no

recreational facilities. One of the interns had been off duty for prolonged periods because of gastric ulcers which had been present since student days. The condition had not been revealed to the hospital authorities; and without necessary dietary attention, there had been a breakdown in health. The house staff quarters were decidedly crowded and untidy in appearance.

The plan of medical service and intern training had many objectionable features. For one thing, there was frequent change of both attending and intern personnel due to a rotating system of assignment, and little attention had been given to formulation of precedents to ensure continuity of program or maintenance of desirable standards. The attending physicians complained of the poor preparation of the graduates of foreign medical schools. Their education seemed to be all theory, which left them helpless when confronted with practical problems.

On both the surgical and medical services, the training given the interns was of mediocre quality. A better showing was made by obstetrics, with careful supervision of the delivery room, the provision of a series of introductory lectures to the interns, and faithful attendance on the part of the interns at the antepartum clinic. In pediatrics, the inadequacy was further complicated by limitation of clinical material and frequent interruption of work by calls to the delivery room, the emergency ward, and the outpatient department to substitute for absent members of the clinic staff.

Medical and surgical specialties including neurology, psychiatry, gynecology, urology, otolaryngology, ophthalmology, orthopedics, and dermatology were but a negligible portion of the interns' experience. Due to the interest of the attending anesthetist, unusual training was given in the study of the patient, selection of agent, technic of administration, and aftercare.

The pathology laboratory was in a cramped location on the top floor of the hospital. Until recently, it was quite deficient but it has been improved by adding new equipment and by the appointment of an intern in pathology for a period of one year, who expressed himself as well pleased with the experience obtained. He had been care-

fully trained in gross pathology and had gained considerable competence in recognizing microscopic abnormalities. An active part had been taken in preparation of material for clinicopathological conferences.

Excellent teaching was given in roentgenology through the organization of weekly conferences and the giving of monthly lectures. All interns were given considerable participation in the routine reading of diagnostic films and in fluoroscopy.

The general situation in this hospital with regard to the house staff is illustrative of hospitals in the lower fringes of those on the approved list. Not being able to attract candidates on an equal footing with institutions offering good internships, the hospital has been forced to take men left over in the annual scramble for places. A large proportion of those taken have been products of medical schools abroad, such as those located in Germany, France, Switzerland, and Austria. Many of these men represent that class of students who did not have qualifications sufficient to enable them to compete successfully with the students admitted to American medical colleges. Instead of accepting the verdict, they have gone abroad and added an indifferent education to uncertain qualifications. There is no implication intended that all of the foreign schools attended were inferior; but it must be remembered that an American student studying in a foreign country is handicapped by instruction given in an unfamiliar tongue and by other obstacles incidental to his being a foreigner. While graduate or post-graduate studies abroad may be of great value and may be encouraged, there seems little excuse for any student going to a European school for his undergraduate work. In this particular hospital, at least, foreign-trained physicians have for the most part been a liability and a necessary evil.

The educational progression of the house staff in this hospital followed more or less conventional lines as they participated in the diagnostic studies of patients and their treatment. As senior interns, they were allowed to deliver normal obstetric cases without immediate supervision.

Unfortunately, no effort had been made to outline acceptable modes

of procedure and each patient was handled according to the ideas of the attending surgeon, physician, obstetrician, or pediatrician who happened to be on service. The records revealed only too clearly the lack of standards. Histories and physical examinations were written without system or outline. The only provisional and final diagnosis on the chart was that written by the intern. If notes by the attending staff were made, they were not signed! Nurses' notes and charting were crude, and laboratory reports were scrawled so hastily as to be barely legible. Exceptions were the x-ray and electrocardiographic reports, which were complete and neatly written.

Almost unbelievably, there was no verification of the charts by either the attending staff or by a record librarian. On discharge of the patient, the chart was sent to an untrained clerk, who merely noted the presence of a diagnosis, a history, a physical examination, and laboratory data. There was no attempt to follow a nomenclature or to keep a card index file. The charts were numbered in serial fashion, tied in bundles, and stacked in a closet. The task of finding the record of a previous admission can be easily imagined. Naturally, such records were utterly useless for study.

The library had been placed in a small room on one of the upper floors and contained two book cases and a small reading table. Books and journals had been donated from time to time, and one of the interns was appointed librarian. The intern in charge during the previous six months had failed to take his responsibilities seriously, and only a few books were left of the entire library. The rest had been borrowed by staff members, and no record was kept of their whereabouts.

Formal instruction of the interns consisted of a surprising number of lectures and seminars. Curiously, the educational value of an internship may be inversely proportional to the number of these exercises. In other words, the poorer the medical program, the more the tendency to cloak the situation by a course of lectures.

Another indication of weakness was the amount of outpatient work carried on by the house staff. This was partly due to the fact that the dispensary staff were remiss in their attendance at the outpatient

clinics. Consequently, too many of these cases were cared for by the intern without adequate supervision.

Hospital C

In the hospital designated as C, a series of reorganizations and the completion of a new building had finally put the medical service and the house staff situation on a much better footing. Although in a poor section of the city, the location was not unattractive.

The new building satisfactorily provided for well equipped wards, operating suites, quarters for nurses, and a recreation pavilion but made poor provision for outpatients, for a record room, for a library, and for intern and resident housing. The latter deficiencies have been besetting sins of hospital architects, few having any concept of the needs of a modern record system or library, or the necessity for providing a house staff suite of adequate size and comfort. House staffs have been growing rapidly in numbers, but builders have been at least twenty years behind the times and unless coached by hospital administrators have been lamentably shortsighted.

The modern spirit in Hospital C resulted in special attention to intern education. When they began service, the interns were given lectures on rules and regulations, on ambulance duties, on first aid, on the utilization of nursing procedures, and on the proper method of securing permissions for autopsies. However, an attempt to institute health examinations under the direction of the residents had not succeeded.

On the main services, namely medicine, surgery, obstetrics, and pediatrics, there were residencies of acceptable quality which contributed materially to the success of the educational program. These super-interns have received the backing of an outstanding group of men in the attending staff and have been the deciding factor in lifting the hospital from mediocrity to the position of a worthwhile institution.

Brief mention may be made of the medical and surgical specialties; as far as intern education was concerned, with the possible exception of otolaryngology, they may be dismissed with one word—inadequate, both in the wards and in the outpatient department. Anesthesia in-

struction was given by nurse technicians and was faithfully carried out. Roentgenologic and pathologic correlation at conferences and informally seemed satisfactory.

The interns all had come from grade A American medical colleges and seemed well prepared for their work. Care was taken by the attending staff to include them in every phase of hospital activity, recognizing the value of their diagnostic studies and encouraging them to study groups of patients as to their follow-up course after leaving the hospital. Evidence of appreciation of this interest was shown by the loyalty of the interns to their chiefs—in marked contrast to the spirit of revolt seen in the poorer hospitals.

One of the most impressive features was the monthly conference. In preparation for it, the residents trained their interns in the best standards of case presentation and encouraged them to prepare group studies of patients, with follow-up reports. Active cooperation was given by social service workers. The result was an exercise of very high educational value. Considerable studying was done in the preparation of these papers, and an efficient little library was in constant use during daylight hours and in the evenings. The residents were stimulated to prepare articles for publication.

Other aspects of house staff training worthy of comment were antepartum and postpartum obstetric clinics, pediatric outpatient clinics, unusual experience in the recording and interpretation of electrocardiograms, and successful seminars held bi-monthly throughout the year.

The record system deserved praise. A unit system had been installed and careful and complete case notes were insisted upon. A report of the work of each intern was sent each month by the record librarian. At the end of the month, representatives of all services met with the librarian and systematically criticized all defective charts and devised modes of remedy. As might be expected, the records of this hospital were among the best in the city. By the investigative work carried on by the interns and residents, there was instituted a genuine appreciation of the value of complete and accurate case reports.

On the liability side of the ledger, the following defects were found:

poor teaching in surgical outpatient department, remissness on the part of the attending staff in writing or dictating personal notes at the time of daily rounds, lack of assistant residencies, impersonal attitude toward patients by the interns, and hurried teaching at the bedside.

Fundamentally, of course, the situation was healthy, and there was good reason to expect steady progress of medical education as interns and residents were graduated and could be added to the junior ranks of the attending staff.

Hospital D

In this instance, the hospital was old and had an unprepossessing exterior, but splendid work had been done in adapting the interior to the needs of modern medicine. No deterioration had been permitted, and housekeeping was meticulous. The hand of an enterprising and efficient superintendent was in evidence in every part of the hospital, and his ability had won the respect and full cooperation of the professional staff. Serious thought had been given to the needs of the interns, including a well integrated curriculum to ensure comprehensive medical education. The attending staff members on duty were required to give a report of the qualification of their interns at the end of each six-month period. The intern schedule had been planned to allow for selection of not more than three main services, with the entire last year spent in the field of the intern's choice. The previously employed rotating internship had been abandoned because of difficulties inherent in short blocks of assignment.

In surgery, the training was considered very valuable but still short of the preparation needed to qualify the individual for a surgical practice. At least one more year of residency was considered essential. Interns not emphasizing surgery were given three months on the service, and it was felt that this was sufficient to qualify them in the ordinary aspects of surgical diagnosis.

Medicine was exceptionally well organized, with a director who was an active participant in the affairs of his service throughout the year. Daily rounds were made in rotation with subordinates in charge of special groups of medical problems. In all these rounds, the interns

were regularly present. The director concentrated his teaching on the senior intern, in order to prepare him for his responsibilities as house physician. Moreover, he worked systematically with his house staff in the outpatient clinics. The atmosphere approximated closely that of office practice. After an intern had reached his conclusions as to the nature of his patient's difficulty, he was required to review his findings with one of his preceptors and with him to work out the indicated therapy. On this service also, the interns were carefully trained to present special case problems at the weekly staff conference.

On pediatrics, a similarly comprehensive plan of intern education was in force. All members of the staff, including interns, functioned both in the wards and in the dispensary. One of the attending pediatricians, his assistants, adjuncts, and an intern formed a "team" in charge of one clinic a week. Care was taken to see that the intern had contact with the well baby, cardiac, allergy, skin and syphilis, tuberculosis, diabetic, orthopedic, and physiotherapy clinics. All children admitted to the hospital received a general pediatric study before being referred to special groups or to surgery. Coordination of work was provided by means of a manual of procedures.

In obstetrics, gynecology, urology, and otolaryngology, the same well rounded basic training of interns was given, but some dissatisfaction with the plan was expressed by members of the attending group. There was a desire for the introduction either of residents or of a three-year internship. Anesthesia instruction was unusually good.

Curiously, the laboratory service was not satisfactory. Few of the interns could perform an accurate urinalysis or blood count without supervision. In most instances, the difficulty was lack of interest. Even if technicians were introduced, the interns were reluctant to work with them. There seemed to be an absence of appreciation of laboratory methods and their limitations, with consequent lack of discrimination in the ordering of tests. Too frequently, "shot-gun" prescription was substituted for real thought.

Initiative for self-development on the part of the house staff has not been conspicuous in the past, but it has definitely improved since the creation of a hospital library under a full-time librarian. The ideal

of the new library has been to make it a center for reference work of all the doctors in the neighborhood.

Ambulance duties have been sufficiently heavy to cut materially into the interns' time during the first year, but the clinical material obtained has been more than a compensation.

The record system was progressive in plan. The *Standard Nomenclature** had been put in use, and there was partial unit filing. All charts were checked carefully by the attending physician on service but lacked a sufficient number of consultation notes by the same individuals. There was need for a better outline for the routine history and physical examination.

While considerable strides have been made in improving the internship, its status was admittedly transitional, and additional changes were in immediate prospect.

Hospital E

The buildings were old and showed signs of wear and tear. Because of financial difficulties there had not been sufficient funds to prevent deterioration of structure. Since scarcity of funds might presumably have an effect upon the quality of medical service, it was of considerable interest to see to what extent the first unfavorable impression was confirmed by a detailed study of the situation.

It soon came out that there had been considerable friction among the staff, based partly on resentment at the economies which curtailed medical work, reduced the quality of food served by the hospital kitchens, and limited the advantages available to the interns.

Nonetheless, there was a favorable side to the picture. A great many surgical patients were cared for in the hospital, the emergency room, and on the ambulance. During such portions of the interns' assignment, they entered very actively into all these phases of surgical work. During the second year, they were allowed to perform appendectomies, hernioplasties, and even cholecystectomies under supervision. Naturally, some question may be raised as to the justification for

* *Standard Classified Nomenclature of Disease*, New York, The Commonwealth Fund, 1935. Now published by the American Medical Association.

allowing an intern during a short assignment to attempt such procedures even with a surgeon standing at his elbow. However, there was a great deal of opportunity to care for minor surgical problems in the emergency room and outpatient clinic, with a chance to ask for instruction from one of the clinical assistants. This training could be applied directly to ordinary general practice.

Obstetrics made an even better showing, with regular participation by the interns in the antepartum and postpartum clinics and an active experience in the delivery rooms. Actually, there was participation in all phases of usual hospital medical practice in an institution with a rapid turnover of material and a variety of interesting clinical problems. There was progression of responsibility from junior to senior intern.

Anesthesia training was given by a technician. Arrangements were made for attendance at the special medical and surgical clinics. At the staff conferences, the interns were expected to present cases which they had studied. An attempt had been made to conduct an intern seminar, care being taken to consult the interns as to choice of topics.

Unfortunately, it was found on probing beneath the surface that there were fundamental weaknesses in the hospital program. Here and there, attending staff members were striving toward better standards of work, but the majority were thoroughly enmeshed by the demands of general practice. Little or no time was left for study or cooperative effort so necessary for the development of hospital services or educational ideals. For the most part, the instruction given the interns was quite casual. Too often the mere opportunity for them to take part in the care of patients was considered the equivalent of education.

The ratio of daily census to interns was too high to permit thorough study of the patients. This was immediately apparent when the clinical records were examined. They were poorly written and frequently incomplete. Furthermore, only rarely did the physician on service take the trouble to add confirmatory notes or observations as to the progress of the case. Inpatient and outpatient charts were filed separately with little opportunity for transfer of information from one

clinic to another. No attempt was made to follow a nomenclature of disease. It was readily apparent that there was failure on the part of responsible members of the professional staff properly to supervise and record the studies carried out on patients. A record committee operating under such conditions faced an impossible task.

A curious practice among some of the weaker hospitals has been to appoint prominent physicians from outstanding institutions as directors of the services, even though they can give little time to these places of secondary interest. In one instance, one of these figure-head directors had not visited his service once over a period of months. When the disorganization of the service was pointed out to him, he hotly replied that he had devised an excellent plan of organization, and it was not his fault if the staff did not carry it out! This happens to be an extreme case. A more usual practice was for the director to conduct "grand" rounds once a week. The spectacle was designed to give an educational stimulus to the staff and at the same time add prestige to the institution. While it cannot be denied that some value accrues to all parties concerned, the whole procedure operates behind a false façade. The so-called director is little more than an official consultant. He has insufficient time really to learn the status of the patients paraded before him, and he makes no pretense to actively direct the work of his subordinates. In reality, the latter resent the arrangement and are prone to internecine strife.

In contrast to well kept-up operating and delivery rooms, the laboratories made a poor impression. Tables were cluttered, and instruments were standing about in urgent need of cleansing. An intern was assigned to pathology, but his time was largely taken up with extraneous duties and could have been used to better advantage elsewhere.

In keeping with the low level of interest, there was an inadequate library and little spirit or stimulus for reading. Attempts at intern seminars above mentioned were compromised by frequent interruptions by calls from the emergency room and for ambulance duty.

The low morale consequent to these conditions had discouraged the best type of applicant for intern service. The men secured were ripe

for discontent. It was easy to rationalize the really fundamental difficulties in terms of food, housing, recreation, and salaries. While such conditions were found in only the minority of hospitals, they have dramatized the inadequacies of intern training and fostered movements to abandon the internship as a legitimate part of medical education.

APPENDIX EIGHT. An Intern's Day

IN the literature concerning internships, one of the most fascinating articles encountered was that written by Dr. St. John Roosa in which he described the details of an intern's life in the middle of the nineteenth century.* It seemed desirable to add similar records of interns' experiences in the 1930's, hence the following sketches. They were intentionally drawn from very active services, in order to give as comprehensive an account as possible. In one instance, at least, there was an obvious need for increase in the number of interns to reduce the case load to more workable proportions.

There can be no pretense that these accounts give the whole picture of an intern's life, for his schedule varies from day to day. All of the educational features of his experience cannot be included. To be truly representative, more reports would have to be given than could find a place within the necessarily limited compass of this report.

In a City Hospital

At 7:15 the night watchman turned on my radio, and I awoke with a start to the tune of WOR's morning calisthenics program. The radio is far superior to an alarm for keeping one awake in the morning, for it will not run down no matter how long you lie in bed.

After a walk from the staff quarters to the hospital, I am fully awake and hurriedly eat a light breakfast. I am no longer able to eat eggs in the morning as I did for the first few months here. The breakfast menu is so monotonous that I am forced to do a bit of dieting, which is probably all for the best.

The surgical dressings on the ward today are few. However, I must spend a few minutes with some of the patients explaining different conditions. One, who is nearly stone deaf, has an incisional hernia

* D. B. St. John Roosa, M.D., The Old Hospital, *Putnam's Magazine*, September 1869. Reprinted in *Medical Register New York and Vicinity*, 1870-1871, pages 91-107.

at his former cecostomy site and must be assured daily that it is not serious. I am never sure that he hears though I shout reassurances till I'm hoarse. Another patient has a dry gangrenous toe which will not stop paining until he has a little alcohol rubbed on it. The fact that no nerve impulses could be present is a little hard for him to understand, so it is easier to dress him daily than to try to educate him. Since there is no infection, bi-weekly dressings would be sufficient.

At 8:30 a.m. the operating schedule begins, and there are some very interesting and instructive cases this morning. The first was a gall-bladder filled with stones which came out without mishap. This patient was a Philipino who was afraid of the operation in spite of his braggadocio. I must remember to save him one of the stones as I promised. The next case was a carcinoma of the sigmoid, which was resected following the principles of the Von Mikulicz procedure. The following case was a cancer of the breast. Ten days previous to operation a small tumor of the breast had been removed which proved to be malignant from microscopic study. Like most women, she parted with her breast very reluctantly. The next case was a tumor of the neck. This finished the morning schedule. There was much speculation as to the diagnosis in this case. Opinion was divided between an aberrant thyroid tissue and branchiogenetic cyst. Everyone was made modest as it proved to be nothing more than a dermoid cyst. This morning's schedule was one in which I only held retractors. So far I am permitted to do only the small surgical procedures such as hemorrhoids, pilonidal cysts, biopsies, incisions and drainages, etc., of which I have done many, with also an occasional simple hernia or appendix.

Lunch at 12:30 was very appetizing to my way of thinking, but as always there were a few who grumbled. The dietitians must be hearty souls, for pleasing a family of 150 three times a day is no small task. After lunch I had to hurry in order to give infusions to post-operative cases before the visitors arrived. As usual when one is hurrying, I met with difficulties. One patient had not completely reacted from his anesthesia, and in thrashing about had pulled the needle out twice.

I had just got a good start on my rounds and progress note writing,

and then the visitors with their annoying and unceasing questions began to arrive. For the third time I explained to one mother that a herniorrhaphy in her young son will not be a serious operation. She believes me, but somehow feels better when she is told the same thing several times. Another patient's relatives can't see why we cannot cure his cancer which has already metastasized. They seem to think "there must be some medicine," and ask me on every visiting day what we plan to do, though they have been told on numerous occasions that there is nothing anyone can do.

At 3:15 I am called to the admitting room. Another case of acute appendicitis treated with a laxative on the advice of the corner druggist. Fortunately it seems not to have ruptured. His operation goes off smoothly and takes only a few minutes. I am impressed by the fact that other things being equal, the patient who spends a few minutes on the operating room table gets along much better than the one who spends an hour or so. Again I held retractors, as there was some question as to the simplicity of the case.

A thirty-minute siesta "picks me up" for our evening rounds; this includes the resident, assistant resident, interns and students. Rounds, which to many interns is a useless routine, are very profitable on this service. I am often amused and sometimes chagrined by the uncanny manner in which the resident discovers the one urinalysis which has been neglected, and that without checking every chart.

During dinner a discussion of politics is begun, but in a few minutes the topic has shifted back to Medicine. It seems that we become very narrow in a very short time within the hospital. One spends so much time working that one scarcely knows there is anything occurring outside the four walls of the hospital.

After dinner we go to the x-ray room and examine the x-ray plates taken on the service today. This is a profitable experience, and one is surprised at the skill which he can develop along this line in a few months by simply spending a few minutes each day in studying films.

I return to the ward to finish writing progress notes and to give post-operative treatments. I am then called to the admitting room to admit a strangulated hernia. The patient has delayed operation for

thirty years, and now even we would prefer to delay his operation. However, there is no question of the diagnosis, so we must give him a chance, though it is admittedly a slim one.

After doing the history and physical and the laboratory work on this patient, I go across the street to spend a few minutes at the Coffee Shop while waiting for the operating room to make preparations for the operation. The herniorrhaphy proves very interesting. The loop of strangulated bowel shows definite signs of circulatory embarrassment, but there was improvement in the color of the bowel after the application of warm lap sponges, and on account of the patient's age and generally poor condition, the surgeon who did the operation decided to take a chance on its coming back rather than subject him to the resection.

While in the operating room I am informed that I have another admission in the receiving ward. This proves to be a fractured ankle. After taking the history, doing the physical examination, and writing the case up, I send the patient to the x-ray department; after the plates have been reviewed, he is taken to the operating room. I reduce the fracture and apply a cast.

It is now about 10:30, the time for midnight lunch. This is the lunch which ruins one's waistline, but a little nourishment seems necessary when one is so busy.

I then go back to the wards, and examine the charts of the patients who were operated upon today. Harris drips have been ordered, and it is necessary to examine the first one as the orderly is new and he may fail to get results if his technic is not good.

At 12:10 I crawl into bed after informing the operator that I am sleeping in the emergency room for the night. I try to read a surgical journal but I fall asleep in a few minutes with the light on and the journal on my chest, and awake the next morning to congratulate myself that I was not awakened during the night, for usually about 4:30 a.m. I would get another admission.

The following day is similar to the one just described, except that I will be off at 7 o'clock in the evening, as I have every other night off.

A Senior Intern in a Private Hospital

Our daily routine gets under way at the breakfast table where the events of the previous night are discussed. Rounds begin at 8 a.m. and are usually made on the more seriously ill patients first. Charts are studied, patients examined, and routine treatments carried out. The latter consist, for the most part, in intravenous medications, stomach lavage, chest "taps," spinal "taps," etc.

Rounds on the tuberculous patients, who are, of course, on an isolated ward, are made in the company of the visiting staff later in the morning. In the treatment of certain types of this disease, one of the more useful instruments is one allowing the introduction of a known volume of air by gravity into the pleural cavity. This causes collapse of the affected lung and promotes the healing of its cavities. The procedure is fairly simple but must be repeated frequently to maintain collapse. One morning of each week is devoted to these "pneumothorax refills."

In the latter part of the morning, attention is paid to the new admissions and to further study of the more interesting cases.

After lunch, an attending reads the electrocardiographic tracings taken that day. The electrocardiograph machine "taps" the electrical impulses as they pass through the heart and records them on a photographic plate. In this way, information is obtained regarding the condition of the heart muscle, its rhythms, etc.

The greater part of the afternoon is spent in making rounds on the general medical wards. New cases are presented and old ones reviewed. The criticism of our management of these patients by the attending staff is of immeasurable value. It is bedside teaching at its best.

Late afternoon may find us at any one of several tasks or possibly engaged in some form of recreation.

Evening rounds are much the same as those made earlier in the day, except that fewer treatments are done. Not the least important part of our visits is the effort to encourage and to raise the hopes of these sick people.

And so to bed—but probably not to stay there long, at least not when the house is busy.

Senior Surgical Service

The day's routine begins about 7 to 7:30 a.m. when ward rounds are made. We then stop down for breakfast. Frequently there are intravenous medications, gastric lavages to be done before operations, which usually begin at 8 or 9 a.m.

The remainder of the morning is spent in the operating room and in giving postoperative supportive treatments and making rounds with the attending surgeons. Consultations to the other services are reviewed at this time. In the operating room we act as first or second assistant on private cases, depending on the magnitude of the procedure. This also applies to the ward major cases; however, we frequently do appendices, hernias, hydroceles, incisions and drainage, etc., but always under the attending surgeon's guidance.

In the afternoon our work varies. The surgical service is divided into two divisions, one for emergency cases and the other for non-emergency admissions on the general surgical and rectal services. An attempt is made to dictate operative procedures and write summaries on case histories during the afternoon when the service is slow. General surgical rounds are made in the afternoon, and dressings, medication, and special tests are administered.

After dinner, we contact our attendings as to the operative schedule for the coming day, leave the orders, and post the cases. Then we make evening rounds on both the ward and private services. When on call at night, we cover the emergency ward, which means we are called to the admitting ward on numerous occasions to go over cases with the admitting intern. There are frequently one or more emergency operations during the night and numerous calls from the night supervisors.

Of course there are numerous miscellaneous duties which enter into the day's routine—such as talking with relatives, grand rounds, conferences, x-ray and fluoroscopic studies, autopsies, checking nurses' notes and the junior interns' dressings. We try to find an hour or two

from time to time to read Dean Lewis' *Surgery* and the current journals—which I believe is a very essential part of an intern's training and one which is greatly neglected at the present time.

One phase of the surgical service which I believe deserves further mentioning is the weekly surgical conference. At these meetings death reports, errors in diagnosis and technic, and complications are discussed. Errors in judgment on the part of the attending are assessed by the group. Curiously enough, the attending responsible for the case frequently assesses himself with an error greater than the one accorded him by the group. This is a most unusual procedure yet a very profitable one. With this open-minded attitude and a desire to profit by one's mistakes, the conference serves a very useful and illuminating purpose. Would that all conferences were conducted with the desire for the truth and knowledge rather than a routine procedure where the errors are eased over with very little discussion to consider matters of much less significance!

All in all, the senior surgical service is excellent. We see a good, varied selection of cases, assist at all operations, and have an opportunity to do sound surgery on our own.

My only regret is that the service is only for three months, which means we must move on to another service just when we become deeply engrossed in surgery.

A Junior Intern's Day

To the surgical junior are relegated those tasks which, although not spectacular, are nevertheless very important cogs in the hospital routine. It is his duty to carry out preoperative and postoperative orders, do the laboratory work, consisting of blood counts, urinalyses, sedimentation rates, and so forth, assist at operations, perform blood transfusions, reassure relatives, and perform numerous other duties which serve to make him one of the busiest people in the hospital. In doing this work, he comes into close contact with the patient, thereby affording himself an excellent opportunity for knowing the patient and following the case. In this way, he gains experience and forms in his own mind ideas concerning the efficacy of the treatment. Perhaps

the most valuable lesson learned is the preoperative and postoperative care which is so essential to successful surgery. There are many times when he will feel the work to be more or less a drudgery, in that it is routine and uninteresting. It does not exactly fill one with clinical enthusiasm to be routed out of bed about 3 a.m. to do a preoperative urine on an emergency appendix case.

Our day usually starts with the jangle of the telephone at 7:30 and we sleepily hear a nurse remind us that a patient is going to the operating room at 8:30 and that preoperative intravenous medication must be given. This, together with taking blood samples for the laboratory, is usually done before breakfast. Immediately after breakfast, we pay a visit to the laboratory to do preoperative urines and those blood counts which are done that morning. Then the work begins to pile up. Perhaps it is a busy day in the operating room, and it will be necessary to assist at an operation. Most of the time, there is at least one blood transfusion to be given, so another intern is summoned and the procedure carried out. As the operations are completed, we are bombarded with calls from the ward, informing us that postoperative routines await us in the nature of clyses (the subcutaneous injection of large amounts of saline solution) and infusions (the administration of saline and glucose intravenously). These are important procedures in that they prevent shock and serve to make up for blood loss as far as total fluids in the circulation are concerned. Then there is the usual blood count which must be done. If the morning is not a busy one, we may get a chance to do surgical dressings, preferably as early as possible, doing the clean dressings first and the contaminated ones later so as to avoid the risk of carrying infection from the septic cases to those with clean wounds. Sometimes we attend a postmortem examination and see the result of disease processes in the body.

Lunch at 12:30 provides a welcome interlude which does not last long, for visiting hours bring the anxious relatives who must be reassured. The hours from 1 to 4 are usually occupied with dressings that were not done in the morning, cleaning up the remaining routine laboratory work, and making rounds informally with some of the attending surgeons. From 4 to 6, there is usually a lull in activity and per-

haps in good weather a set of tennis may be played or the time spent in some other form of relaxation. After dinner at 6 evening rounds, usually in the company of the senior intern, are made on the ward patients and their condition ascertained. Many need sedatives and analgesics, and these are duly prescribed. After this, there may be more urinalyses or blood counts to be done on patients admitted during the afternoon who will go to the operating room the next morning. Preoperative orders must be written for patients. About 9:30 the work is completed and we repair to our rooms to read or talk, only to be interrupted by the telephone. A nurse is on the wire to report that one patient can't sleep, another is having some pain, or perhaps one has not responded favorably. This requires a trip down to the ward to see the patient. Soon it is 10:30, one of those pleasant hours in the hospital when we gather in the dining rooms for a snack before bedtime and discuss the incidents of the day—usually the humorous ones. We turn in between 11 and 12, praying that an emergency appendix or some similar acute condition does not come in, for the evenings are few and far between that there is not at least one call.

No two days are alike. However, some are easier than others. Friday is always an interesting day, for at 10 a.m. there are grand rounds by the entire surgical staff, followed by a short x-ray conference and a staff conference every other week when cases are presented and, if results are not good, reasons are advanced which lead to constructive criticism. Sundays are usually quiet. Every other evening and night it is the surgical junior's duty to cover the emergency room and either admit cases to the hospital or give first aid treatment and refer them to their own doctor or to the clinic. Some days we get a chance to attend the follow-up clinic and see the cases which have been discharged, which is a most valuable experience. One can hardly say that the surgical junior gets much time to loaf, for there are certainly not many dull moments.

APPENDIX NINE. Bibliography

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