

THE SPECIALIST AND THE GENERAL PRACTITIONER

IN RELATION TO TEAM-WORK IN MEDICAL
PRACTICE *

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A striking feature of contemporary medicine is the effort everywhere becoming manifest to correlate the activities of physicians, surgeons, and medical and surgical specialists for the purpose of securing comprehensive diagnostic surveys and more efficient treatment of single patients. As a result of this effort, so-called group practice in a variety of forms is emerging. New modes of association of clinical men have been suggested and new methods for the conjoint communication of experience have been devised, which are believed by many to be full of promise both for public welfare and for medical advance. If this new institution of group practice, which is based on new forms of cooperation and coordination, is to evolve in the best way, those who encourage it must give careful thought to the principles that should underlie it, to the advantages that may be derivable from it, and to the dangers that may beset it. It has occurred to me that, in this connection, some discussion of medical specialization in its relation to team-work in practice might be both timely and profitable; for to the growth of the medical specialties more than to any other factor must, in my opinion, be attributed the origin of the feeling that practice by means of team-work is an urgent need.

MEDICAL MEN AS PRODUCERS OF SERVICES

Viewed from the standpoint of economics, medical practitioners are a part of the great want-gratifying mechanism of society, for they produce desired non-

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material "goods" that are called "medical services." Through the ages, society has seen fit especially to reward certain of its groups that produce only non-material services; physicians, teachers, lawyers and amusers are examples of such groups. The production and distribution of nonmaterial goods (or services) are fully as important for social welfare as are the production and distribution of material goods (or wealth).

Medical services directly gratify certain human wants; for human beings want health. When they have lost it, they want to know the reason why (diagnosis); they want to have it restored (therapy); and some persons are far-sighted enough to employ physicians to help them to retain health when they have it, to guide their conduct so as to prevent the development of disease (prophylaxis). The people encourage, therefore, the practice of medicine and reward its practitioners in various ways in the hope that their own wants as regards diagnosis, therapy and disease prevention will be satisfied by means of the medical services rendered.

THE EVER-INCREASING VARIETY AND COMPLEXITY OF MEDICAL SERVICES

In a society that is progressing, human wants are constantly changing; and the desires of a people for medical services form no exception to this general rule. As professional knowledge and skill grow, laymen gradually become aware of new possibilities of diagnosis, of treatment and of prevention. People have, accordingly, come to demand, today, a variety and complexity of medical and surgical services entirely unknown to, and largely unforeseen by, their forerunners. To fulfil these demands, work in medicine has had to be divided into a series of special tasks.

A glance at Chart 1, which contains a list that is by no means complete, will give some idea of the extent to which the field of medical practice has already undergone subdivision.

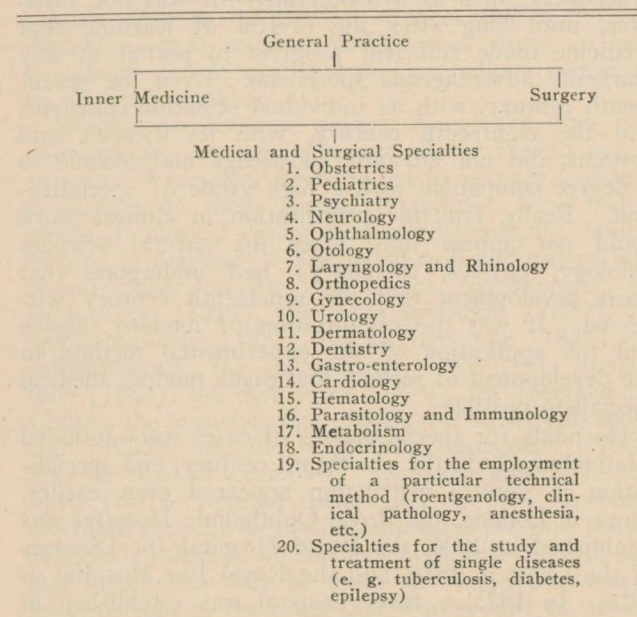
This subdivision of the field of medical practice has, as every one knows, necessitated a functional differentiation among the clinical workers. In the future, certain parts of the field will, doubtless, be still further divided, and, along with this cleavage, there will be a still further concentration of interests and restriction

of activities of special workers. And as specialization becomes ever more pronounced, new knowledge will be acquired and new technical methods will be developed. These will, in turn, create among the people new wants, as well as the means for their gratification.

THE EVOLUTION OF MEDICAL SPECIALISM

Medical specialism could not extensively and fruitfully develop before the advent of modern scientific

CHART 1.—DIVISION OF CLINICAL MEDICINE INTO
SPECIAL BRANCHES



medicine. Primitive medicine (folklore medicine) needed no specialization, for it knew nothing of diagnosis, and therapy consisted of driving out demons or of applying "white magic" to counteract the effects of "black magic." Certain gross symptomatic pictures of disease were, it is true, recognized relatively early, and, at times, there was a special physician for the treatment of each one of these diseases. But such pseudospecialism stood in no connection with the specialism by experts that we now know. As empiric

medicine gradually developed, a certain division of labor among practitioners became manifest. Thus, surgeons, midwives and specialists on eye diseases early emerged. In Galen's time (second century A. D.), in addition to the general practitioner, there were already many men who devoted themselves to special branches. Thus, besides eye doctors, ear doctors and tooth doctors, there were general surgeons, surgeons who specialized in the treatment of single disorders such as fistula, hernia and stone, and physicians who made preferential use of single therapeutic procedures, such as hydrotherapy. It was not, however, until long after the revival of learning that medicine made sufficient progress to permit of any markedly advantageous specialism. Even the seventeenth century, with its individual scientific endeavor, and the eighteenth century, with its theories and systems, did not advance knowledge and technic to a degree compatible with a high grade of specialization. Really fruitful specialization in clinical work could not appear until after the natural sciences (biology, physics, chemistry) had undergone that great development that the nineteenth century witnessed. It was the organization of modern science and the application of the experimental method to the development of technic that made modern medical specialism possible.

Hospitals for special classes of cases were founded relatively early in the nineteenth century, and specialization in clinical instruction appeared even earlier. Thus, in London, the Royal Ophthalmic Hospital was established in 1804, the Royal Hospital for Diseases of the Chest in 1814, and the Royal Ear Hospital in 1816. In 1825, a fever hospital was established in New York City. In 1832, the Lying-in-Hospital of Boston was founded, and in 1838 a Royal Orthopedic Hospital in England. Since then, an enormous number of hospitals for special groups of diseases, or for single diseases, have been built. It should not be forgotten that the foundation of such special hospitals lagged, however, almost a century behind the reform of clinical instruction by the universities of Edinburgh and Vienna. In these universities many of the special subjects were represented by clinical professors who taught them to the exclusion of other branches.

Physical methods of examining patients were much improved during the nineteenth century. General medicine had received a great impetus through the introduction of percussion by Auenbrugger (1761) and of auscultation by Laënnec (1815). These two fundamental methods represent notable applications of the science of physics to medical practice. They began the era of careful physical examination of all patients by physicians. There soon followed a great series of other applications of physics and of applications of biology, chemistry, anatomy, physiology and pathology to both general and special practice, for the advances rapidly made in the natural sciences and in the pre-clinical medical sciences yielded vast stores of new knowledge and of new technical procedures that could be clinically applied.

Medical practitioners quickly recognized their new opportunities, and intensive work in the various special domains of medicine speedily led to an unprecedented promotion of these special branches. New instruments of clinical exploration were gradually devised as aids to diagnosis. The compound microscope with its oil immersion lens, the clinical thermometer, the stethoscope (1819), the Sims speculum (1849), the ophthalmoscope (1851), the laryngoscope (1855), the sphygmograph, the spectroscope (1859), the stomach tube (1867), the cystoscope (1879), the roentgen ray (1893), the bronchoscope (1898), the string galvanometer (1903), and the respiration calorimeter (1904) may be cited as examples. Such instruments require some skill to operate them; they are not automatic machines that can be used by unskilled persons, though as technic comes to be further developed, thought, skill and intelligence may be more and more transferable from persons to machines that require only an attendant to start and stop them. The way roentgenology has developed would give color to this view. Bacteriology, parasitology and immunology also developed, illuminated etiology, and gave us staining methods, cultural methods, agglutinin tests, complement fixation tests, tuberculin tests, and the Schick test, as well as a large series of vaccines and antitoxins. Biochemistry provided elaborate analytic methods, and made clinical studies of the chemistry of metabolism practicable. Ehrlich's application of the staining methods of histology to the study of the blood was the starting point

of modern hematology. Gas anesthesia (1800), ether anesthesia (1842, 1846), chloroform anesthesia (1847), cocain anesthesia (1884), and infiltration anesthesia (1894) made it possible to perform operations without pain. Lister's antiseptic methods (1867) and, later, the introduction of aseptic methods, made feasible by steam sterilization (1886) and by the application of bacteriologic technic, abolished most of the dangers of infection of surgical wounds. The manufacturers of surgical instruments, trained nurses, organized operating rooms and operating staffs, and experimental researches in animal surgery enabled surgeons to become ever more daring in exploring the interior of the body, and modern surgery sprang upward under our eyes like the magic tree of the Hindus. Medicine, surgery and the specialties thrived as never before.

So great has been the growth of theory and methods in medicine that the medical schools can no longer attempt to teach all to the students. All that can be done in the undergraduate years is to teach the main facts and principles and the more important practical technical methods of the preclinical medical sciences and of general medicine, general surgery and obstetrics; only a bird's-eye view of the subject matter and practical procedure of the special clinical branches can be given in the undergraduate medical school. The foundations for medical specialism the student gets, it is true, in this school, but the superstructure must be erected after his graduation. At least two or more years of postgraduate work are requisite for the acquisition of additional knowledge and of special skill in any medical or surgical specialty before the aspirant dare consider himself proficient. Intensive study of the anatomy, physiology, pathology and etiology in a special field, together with unremitting practice of the technical methods applicable to that field, are necessary for the preparation of the true specialist.

Pseudospecialism and inefficient specialism are all too prevalent and do much to discredit legitimate specialism. Despite this drawback, however, the genuine expert is finding his place. The public demands him and the profession needs him in addition to, and as an aid to, the indispensable general practitioner. The

medical profession and the laity are both learning to frown upon the false and the insufficiently trained specialist.

Modern specialism in medicine is, then, the result of a long evolution, from the time of folklore medicine to that of modern science. The steps toward it were at first slowly and falteringly made. Since 1850, gigantic strides have characterized its progress.

HOW DIAGNOSIS AND THERAPY BENEFIT BY SPECIALIZATION

Medical and surgical specialties are capable of contributing significantly to the performance of the great task of satisfying the wants of the public for diagnostic and therapeutic services. They can do this in several different ways, and to some of these we may now conveniently turn.

1. *Specialization Increases Productivity.*—Specialization in medicine, as in other domains, is an effective means by which the results of a given amount of work can be increased. By subdivision of tasks, operations that are easier in themselves result; by repetition of tasks, operations come to be performed with greater ease.¹ The profession of medicine as a whole is complex; its subdivisions represent simpler units that in turn are further subdivisible into certain processes that can be finally resolved into still simpler constituent operations. Specialization is the most fruitful device for the increase of the productivity of workers and for the improvement of skill and judgment among workers that society has found it possible to contrive. This device can be made to be almost as valuable for medicine and surgery as it has proved to be for commerce and industry.²

2. *Specialization Facilitates the Acquisition of Accuracy, Speed and Skill.*—Modern medical and surgical technic is full of difficult and delicate tasks, and diagnostic and therapeutic methods require long practice in their application before accuracy and speed can be attained. The mere learning of how to apply a method will not suffice. The method must be applied often enough to become a habit. Even after becoming expert

1. Clay, H.: *Economics: An Introduction for the General Reader*, New York, 1919, pp. 21-45.

2. Marshall, L. C., and Lyon, L. S.: *Our Economic Organization*, New York, 1921, pp. 192-203.

in applying a method, one must keep constantly at work at it if he is to continue to be expert. The beginner in ophthalmoscopy, in laryngoscopy or in cystoscopy works slowly, clumsily and with effort; only gradually do hand, eye and brain become better coordinated, until, finally, as William James puts it, the performance is handed over "to the effortless custody of automatism." How many general practitioners are prepared to make accurately, quickly, skilfully and without strain a neurologic examination, a psychiatric examination, an orthopedic examination, or an examination of the urinary tract from urethra to kidneys? How many of them are masters of the technic of the Wassermann reaction, of blood culture methods, of blood sugar determinations, of basal metabolism measurements, of roentgenoscopy or of electrocardiography? How many of them are really expert in hydrotherapy, in radiotherapy or in psychotherapy? The general practitioner is, it is true, as necessary as ever; he plays a most important and indispensable rôle. But what loss would the medical profession and the public not suffer if all medical practitioners were to strive for equal skill in the application of all the various diagnostic and therapeutic procedures. If we are to supply the public with the medical and surgical services that modern science has made available, we must, in addition to the work of the general practitioner, have the cooperation of experts in more limited fields, men who have gradually built up through restricted practice the specialized experience that permits of achievements impossible without it. Thus, and thus only, can the difficult and delicate tasks of present day diagnosis and therapy be satisfactorily performed.

3. *Specialization Provides for a Better Distribution of Tasks.*—A further advantage for diagnosis and therapy derivable from specialization is the opportunity given for the distribution of tasks in such a way that each physician may do the kind of work for which he is best fitted. Differences in natural endowments and differences in opportunities of training can thus be utilized to the best advantage of the workers themselves and of the people for whom they work. When the square peg is placed in the square hole and the round peg in the round hole, society is the gainer.

When no provision is made for physicians to concentrate on what they can do best, the public is the loser and the progress of medicine is retarded.

4. *Specialization Economizes Material Equipment and Mental Energy.*—Think of the unnecessary multiplication of professional equipment and the wastage incident to unused equipment in the absence of medical specialization. When, however, physicians restrict their activities to particular tasks, material equipment is reduced to a minimum, and productive resources are not wasted through idleness of armamentarium. Mental friction, also, is greatly reduced when professional activities are not too multifarious. Nothing is more fatiguing and time-robbing than passing rapidly from one task to another; the loss of time and energy involved in the change of direction and content of thought when medical men are compelled to engage in too great a variety of activities should not be overlooked.

5. *Specialization Accelerates Discovery and Invention.*—New knowledge is more rapidly acquired and new practical technical procedures are more swiftly devised and in greater numbers when medical men specialize in particular branches. Here we have to deal with a virtuous circle, for, on the one hand, specialism increases knowledge and skill and, on the other, the growth of knowledge and of technic creates new specialties. Human wants grow as knowledge and skill increase; and ever new types of medical men must emerge to supply the services that will adequately satisfy these wants.

CERTAIN DISADVANTAGES OF MEDICAL SPECIALIZATION

It must be admitted that certain possible disadvantages and dangers pertain to specialization in medical practice. For specialization, if not properly controlled, may be harmful to patients, to general practitioners, or to the specialists themselves. To some of the objections that may be raised to medical specialism I shall now take occasion to refer.

1. *Patients Who Independently Seek the Aid of Specialists Often Make a Mistake.*—Patients may, through their own initiative, seek out specialists who

are not needed by them at all or who are in a position to satisfy only a part of their medical needs, and that often the least important part. This tendency of patients independently to resort to specialists is to be deprecated. When there is need for consultation with specialists, or for a general diagnostic study by a team, the patient should be guided in his selection of specialist or team by his family physician. Unfortunately, the general practitioner has, in the past, sometimes been to blame in not recognizing early enough the need of special examinations or of team diagnosis in certain of his cases, and this has contributed to the tendency to self-direction among patients. The remedy lies in education of both the general practitioner and the public.

2. *General Practitioners and Specialists Sometimes Fail Satisfactorily to Cooperate.*—General practitioners often assert that they suffer as a result of the vogue of specialism, and they fear that the competition of private groups and especially of the so-called "pay clinics," which are semicharitable institutions, may prove to be detrimental to their interests. They complain that the all-around practitioners are no longer respected as formerly, and that the "specialists swoop down upon their patients and capture them from them." They think that general practice is looked upon "as the recourse of the mediocre and unambitious" or "as a sort of purgatory for the abandoned in medicine." They ask, "Is the general practitioner doomed to disappear?" or "Is the drudgery and labor of a general practice worth bothering with?"³ In my opinion, their fears are not well founded. The good general practitioner is needed more now than ever before. It is he who must care for the bulk of patients suffering from acute diseases, and for a large proportion of the chronic disorders. Even in the obscure and difficult cases in which specialists and teams are desirable, the general practitioner should be associated with the specialist or the team in the care of the patients.

Specialists have doubtless sometimes been to blame in their treatment of general practitioners, ignoring them, failing to report to them, not insisting on

3. Billings, Frank: *The Future of Private Medical Practice*, J. A. M. A. **76**: 349 (Feb. 5) 1921. Wynn, F. B.: *The Triumphs and Dangers of Specialism*, J. Indiana State M. A. **13**: 338-343 (Oct.) 1920; *The General Practitioner*, *ibid.* **13**: 365-371 (Nov.) 1920. Noble, R. P.: *The Present Day Status of the General Practitioner*, Canad. J. M. & S. **50**: 113-118, 1921.

patients continuing in proper relationships with them, or being negligent in lending support to patients' faith in them. Nothing could be more reprehensible; such conduct is harmful to the patients, to the general practitioners and, in the end, to the specialists themselves.

3. *Peculiar Dangers Beset Specialism.*—Specialists, as a class, are exposed to a particular set of dangers, including those of the narrowness and the monotony of the "piece worker," those of loss of adaptability, those of objectionable aggressiveness, those of stubborn opinionatedness, those of boastful self-sufficiency, those of selfish materialism, and those of vanity and arrogance. Special practitioners should be cognizant of these manifold dangers and should be sedulously on guard against them; all special workers should take pains to neutralize as far as possible the evils that tend to accompany concentrated interests and narrow ranges of operation.

4. *The Limits to Desirable Specialism May Not Be Recognized.*—Another disadvantage to which medical specialization is liable is the failure to recognize that there are limits to its beneficial cultivation. In general, the good that results from division of medical tasks and from differentiation of professional functions far outweighs the evil. Modern medicine is inconceivable without specialism, which promises in the future to increase, I believe, rather than to diminish. Abolition of specialism would compel a return to a darker age of medical practice. But recognition of the dangers of specialization and of the limits beyond which it should not be carried is very necessary if it is to be made ever more useful to society. Regarding the limits set to specialization, though in all probability there will be a still greater extension of specialized clinical technic as physics, chemistry, biology and psychology continue to be applied to the solution of our diagnostic and therapeutic problems, it will be found that certain kinds of medical practice are, less than other kinds, susceptible of task-division. And besides the limits to be set to specialization on the analytic side, those on the synthetic side are worthy of careful consideration. There can be no advantage for practice in an analysis that outruns synthesis. Proper provision must be made for correlation of the activities of general practitioners and specialists, and for the integration of their results

into unified services. There is much so-called group practice today that is not team-work in practice, for it consists merely of accumulating facts without subsequent coordination and integration of the facts. It is in "the knitting together of specialists" into a well-coordinated producing mechanism that group practice of the better sort or team-work in practice has to find its place (see below). And what that place is to be will depend to a large extent on (1) the administrative ability and administrative technic that the practicing teams can develop, and (2) the number of patients who will, through the advice of their family physicians, come to desire the services of such cooperating groups. The length, then, to which subdivision of medical tasks can advantageously be carried will depend partly on the nature of the tasks themselves, partly on the progress made in acquiring knowledge and improving technic, and partly on the management of, and the appeal made by, the correlating and integrating agencies that can be devised.

GROUP ORGANIZATION FOR THE CORRELATION AND INTEGRATION OF MEDICAL SERVICES

The conception of a general diagnostic survey of a patient as a whole (with full consideration of all the somatic, psychic and social elements concerned), though relatively new, is rapidly growing in appreciation in the minds of patients as well as in those of the producers of medical services. All are coming to recognize the dangers of an ever-increasing medical specialization that does not provide for proper coordination of the activities of the specialists and the suitable integration of the results of their work; only through such coordination and integration can unified diagnostic conclusions be safely arrived at, conclusions on which a comprehensive therapeutic regimen dare be based and executed. Thorough analysis of the bodily, mental and social conditions of the patient, adequate synthesis of the facts elicited, and determination as far as possible of etiology and pathogenesis, are the aims of the clinical diagnosis of today. To deprive a patient suffering from an obscure malady of the aid that experts can give, to remain satisfied with the findings of a skilful examiner in a single domain while running the risk of overlooking something vastly more important in another, or to collect the findings of a whole series

of specialists in a patient without considering carefully the relative importance of the various abnormalities found and without integrating the isolated data as far as possible into diagnostic wholes, are evils from which clinicians are trying to find ways of escape.⁴

The conversion of the conception of the thorough and well-proportioned general diagnostic survey into fact is the new problem that clinical workers have recently set out to solve. The problem is one of organization, of cooperation, of coordination and of integration; and its satisfactory solution calls, as I have said, for a high order of executive ability and of administrative technic. Specialization, it is asserted, has resulted in conditions in which, before very obscure and complex cases, at least, the special workers may be relatively helpless by themselves and in which they may be comparatively useless, or even harmful, to their patients unless they can be linked up into organizations that will produce complete services adequately controlled, instead of partial services indiscriminately rendered. These difficulties have long been recognized by our more conscientious practitioners. The method, more or less desultory, of occasional consultations was made use of with the object of overcoming them. But this "consultation method" was, and still is, very disconnectedly and unmethodically employed. It may be compared with the consultation method of the generals of the allied armies on the western front before the supreme command was given to General Foch. What is needed, it is urged, is the transformation of the *mobs* of medical and surgical specialists into *teams* of systematically arranged cooperatives, in order that their special activities may be organically united in the interests of the patients to be served. In response to this need, the new institutions of group diagnosis and group therapy, in which general practitioners, internists, surgeons and other specialists combine to perform team-work are, as a logical sequence, now being established.

Strange as it may seem, this remedy for the evils of an increasingly incoherent specialization has involved the development of new kinds of specialists, namely,

4. The Rationale of Clinical Diagnosis, in Christian and Mackenzie: Oxford Medicine 1: 619-684, 1920; The General Diagnostic Study by the Internist Cooperating with Groups of Medical and Surgical Specialists, New York M. J. 108: 489-493, 538-542, 577-582, 1918; Group Diagnosis and Group Therapy, J. Iowa M. S. 11: 113-121, 1921.

(1) specialists in team organization, (2) specialists in team management and, by far the most important, (3) specialists in the integration of the collected results of diagnostic studies made by members of the teams. Compact groups are not essential; overlapping groups are often preferable. The principle of specialization is thus further applied by assigning to certain men especially adapted to their performance the tasks of linking the specialists together into a working organization, and of integrating the results of their activities.

The general plan for team practice will be clear from Chart 2, indicating the route followed by a patient referred for study.

Unless the work of organization, management and integration are efficiently performed, that of the cooperating specialists will not be effective. Organizers, managers and integrators of the type desirable for team-work in practice are as yet not easy to find, though they will doubtless appear if the demand for them grows more importunate. For the post of "group organizer" and for that of "group manager," persons of special administrative ability should be sought; for the post of "diagnostic integrator," men with more than ordinary endowment in what is called "common sense," with encyclopedic knowledge of the medical sciences, and with clinical experience extensive enough to permit them to estimate with accuracy the significance of symptoms and signs and to recognize their juxtaposition in clinical syndromes, should be chosen. These organizing, managing and synthesizing specialists, cooperating with the general practitioners and the analyzing specialists, will then constitute efficient differentiated-united teams for the conduct of group practice.

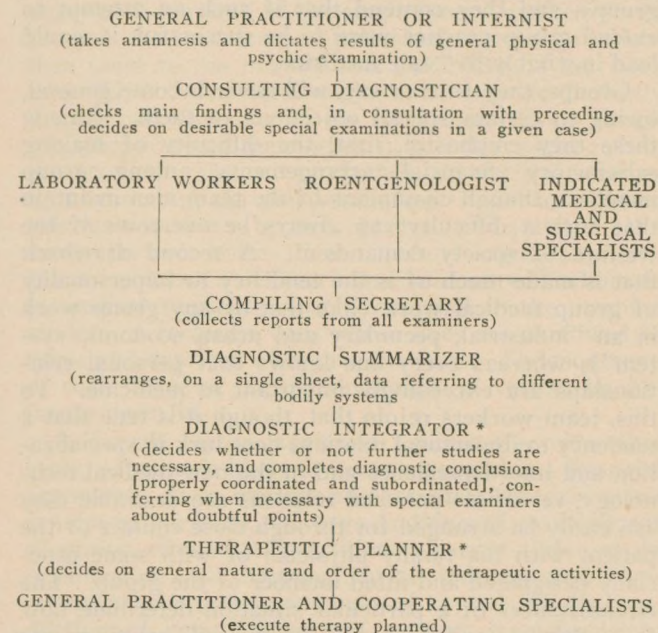
THE FUTURE OF GROUP PRACTICE

Contemporary opinion is divided concerning the future of team-work in practice.

Some enthusiasts go so far as to say that they believe that the time is not so very far distant when medical practice as a whole will be organized on the team system. They think that groups of increasing size for the "large-scale production" of medical services will gradually be formed through private initiative, and that, even in the rural districts, groups will be established, with or without local government aid, perhaps as county or

township units. They think that the medical schools and their teaching hospitals need to be organized for team diagnosis and for team therapy, such reorganization to supplement (if not to displace) the unit system of departments now prevalent—a system that they hold to be responsible, in part at least, for the failure of medical students to realize the importance of the "knitting together" of specialists into diagnostic teams that

CHART 2.—ROUTE FOLLOWED BY PATIENT REFERRED FOR STUDY



* The diagnostic integrator and the therapeutic planner will often be one and the same person.

will insure complete general diagnostic studies of each patient.

The more moderate supporter of the team-work idea believes that the bulk of clinical work will continue to be done by general practitioners and independent specialists, but that the team or group will always be turned to for aid in obscure and complex cases, especially of chronic disease.

Others, still less sanguine regarding the future of group practice, think that the phenomenon of the diagnostic group represents only a temporary phase, necessary, it is admitted, at this stage of medicine, but destined to be replaced by something entirely different later on.

There are many physicians, however, who see insuperable barriers to any great prevalence of group practice, now or in the future. For them, it seems preposterous to assume that the bulk of medical practice will, even in the distant future, be performed by groups, and they contend that if such an attempt to extend group practice were to be successful, it would lead inevitably to "state medicine."

Groups, they further say, will never become general, owing to certain special objections to them. Among these they emphasize, first, the difficulty of making satisfactory financial arrangements among group members, though champions of the team idea maintain that such a difficulty can always be overcome if the welfare of society demands it. A second drawback that is made much of is the tendency to impersonality of group medical work (like that of any group work in an "industrial, pecuniary and urban economic system"), whereas every one knows that personal relationships are exceedingly important in medicine. To this, team workers rejoin that, though it is true that a tendency to impersonal relations does lurk in specialization and interdependence and in the new medical technology, yet where personal relations are desirable they can easily be arranged for through close contact of the patient with his family physician or with some especially designated and fitted member of the group. The circumstances of a particular situation determine how far personal, and how far impersonal, relations are desirable. Though the number of impersonal relations may increase, team workers are not likely to undervalue the importance of individual human personality and will see to it that it functions in the new environment.⁵

A third objection urged is that it has never been possible to organize the production of personal services in the same way that the production of material goods

5. Consult chapter on Impersonal Relations in Marshall's Readings in Industrial Society, Chicago, 1920, pp. 782-823.

or wealth has been organized in our industrial systems. Anything like the factory system of organization is, it is asserted, inapplicable to medicine, because the services to be produced differ much among individual patients; though standardization of parts of the diagnostic process may be feasible, there can be no such extension of standardization as is characteristic of mechanical industries organized for the production of a single article. Furthermore, since group practice tends to extend rather than to limit specialization, conditions might develop in which the variety of skill and experience required of the single special worker would become too restricted. Individual specialists might then cease to see the end and the utility of the work they did, and the effect might be to degrade distinctly the life and character of the specialists. Even though specialization and team-work in practice might reduce the economic cost of production of medical services to a minimum, the real human cost might actually be enhanced so that it became oppressive of society.⁶ We surely do not desire, these objectors argue, any such excessive division of labor in medicine as will culminate in medical specialists that correspond to the machine tenders of factories, men whose lives are narrowed in scope and deprived of human interests. The monotony of such forms of occupation would, of course, be distinctly harmful.

A fourth reason advanced against the view that group practice is likely to become general is a financial argument. It is maintained that since the gain spirit is tabu in medicine, the organization and management of groups of medical practitioners cannot thrive as do organization and management in industry and commerce, where the employment of capital for the production of commodities and services is unabashedly animated by the gain spirit. Even if the organization of team-work in practice were to be inspired, not by hope of financial gain, but entirely by the desire to produce services of higher value at lower cost for patients, it would not be possible, these objectors say, to secure the cooperation of the more independent natures among practitioners; nor would the rewards for the enterprisers be sufficient to induce physicians to elaborate and execute plans for the combined production of ser-

6. Hobson, J. A.: *The Social Problem*, 1901, pp. 226-230.

vices. The medical profession, they assert, contains but little organizing talent. Men in whose minds such plans could originate, and men with the intellect and will power to make them successful, are likely, they think, to turn to enterprise in fields other than that of medical practice, where conditions are more favorable, where the rewards are greater, and where the risks taken are less.

Finally, still other objectors hold that medical education is improving so rapidly that in a few years from now the graduate of the better medical school, with a little hospital experience afterward, will be so well trained in diagnosis and therapy that he will be able to do by himself alone what only an organized team can now do in the production of medical services. Much of the special technic now thought desirable will, they assert, disappear as experience accumulates and short cuts to diagnosis are discovered. Thus, a man who has worked with the electrocardiograph quickly learns how to do without it in ordinary practice. One who has become familiar with the relation of basal metabolism studies to practical medicine can get along very well without a calorimeter simply by weighing the patient regularly while his diet is controlled. The specialist is, they tell us, a pioneer who develops new methods, which, however, general practitioners can soon learn to do without. But do not those who advance this argument forget that there will be ever new crops of technical methods under test to replace those that are abandoned? Will not the well trained graduate of the future have, in turn, his own particular problems of specialism to deal with?

But all such discussions of the probable future of group practice are more or less academic in nature. Team-work in practice seems, at present, to be performing a useful function and to be extending. It would seem sensible, then, to avail ourselves of it so far as it is advantageous, avoiding so far as we can its evils, and to leave the distant future to look out for itself. In any case, if group practice is to survive, it must benefit the public and it must be made helpful rather than harmful to the general practitioner. If team-work in practice should prove to be essential to public welfare, medical men must and will devise ways and means through which general practitioners, special-

ists and teams can all do their work satisfactorily; for the public, to be well served medically, must be cared for by a harmonious rather than by a discordant profession.

SUMMARY

In this address I have endeavored to throw light on some of the problems that confront the practicing profession today. I have referred to the ever increasing variety and complexity of the services that medical men produce in their efforts to satisfy the diagnostic, therapeutic and prophylactic wants of the people. I have called attention to the steadily increasing necessity of division of labor and of differentiation of function among medical practitioners, and have shown how the evolution of medical specialism has more or less corresponded to the growing need. I have tried to show how diagnosis and therapy benefit by specialization, which increases productivity, facilitates the acquisition of accuracy, speed and skill, provides for a better distribution of tasks among practitioners, economizes material equipment and mental energy, and accelerates discovery and invention. Though it yields these benefits, specialism, as I have indicated, is beset by its own special dangers; and it should be kept within certain desirable limits. I have dwelt at some length on the present day requirements for the correlation and integration of the services of general practitioners, internists, surgeons and specialists in the making of general diagnostic surveys and in the execution of comprehensive plans of therapy based on such general surveys. I have commented on the groups and teams that are being organized to meet this need, and on the emergence of new kinds of specialists—especially the diagnostic integrator—necessitated by team-work. Finally, I have detailed some of the conflicting views regarding the proper field of team practice at present and in the future. I shall be glad if my remarks have been of interest, and I hope that they will provoke a lively discussion.

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