OPPORTUNITIES
FOR WOMEN IN THE MEDICAL PROFESSION
AND
THE SELECTION OF MEDICAL STUDENTS
REPORT

OF A

CONFERENCE

ON

Opportunities for Women in the Medical Profession

AND

The Selection of Medical Students

This record of the addresses delivered at an informal Conference held at the Woman's Medical College of Pennsylvania, on February 26th, 1938, is printed in order that the facts and opinions expressed may be made available to those who are interested in the subject.

Copies of the report will be sent on request.

Address:
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East Falls, Philadelphia, Penna.
It is with the greatest pleasure that I welcome, this afternoon, you who have come to discuss with us the subject announced for this informal conference: "Opportunities for Women in Medical Service Fields, and the Selection of Medical Students."

We have asked you to come because we need your understanding and your help, and it is very gratifying that so many have found it possible to pause on their way home from the greater conventions at Atlantic City to consider this our mutual problem.

When this institution was chartered eighty-eight years ago the purpose of its founders, as stated in the first announcement of the college issued in 1850, was "to instruct respectable and intelligent females in the various branches of the medical science." That objective has been the goal ever since of those who have followed the pioneers, and it is the objective toward which our current program is directed.

It is evident from the records and newspaper clippings of that day, that in 1850 and the years immediately following, the instruction of the intelligent females was less difficult of accomplishment than the conversion to such an inappropriate undertaking of the contemporary medical brethren and of the lay public.

But those times are gone and today, theoretically at least, women may freely study and engage in the practice of medicine in its ever-widening scope.

I say, theoretically, for in our day of economic and social complexity and perplexity there is felt in the medical field as in other professional and industrial fields of activity a pressure to dissuade and bar women from free vocational choice.

You, and we, cannot fail to be cognizant of this attitude; and clear as we are in our convictions that the attitude is unsound, it behooves us nevertheless to be the more thoughtful and more wise in our teaching and our steering of young women in the direction of professional training. We must, if possible, make fewer mistakes in our judgments, and continue to strengthen medical service by the contribution which women can make to it.

There are those in the medical profession who believe that too many doctors are graduating from our medical schools, but there are also those who take quite an opposite view, who say on the contrary that medical service is inadequate; that more as well as better doctors are needed, and that they must be more successfully distributed to render the service for which they are trained.

I take my stand with this latter group, and you with whom it has been my privilege to meet annually now for some twenty years know how insistently I plead for better teaching of health facts and health maintenance motivations throughout our schools and colleges.

I wonder if you know that the applicants for admission to the first year classes of our medical schools in September, 1937, numbered 12,207, and that, limited by the capacity of the schools, the acceptances for admission were 6,410, or 52.2%, and the actual enrolment 5,623 or 46% of all applicants. Of the total applicants 649 were women, and of these 341, or 52.4% were accepted.

This school enrolls with remarkable regularity approximately 10% of the women studying medicine in the United States.

An enormous effort went into preparing the unaccepted 6,000 odd pre-medical students, and great and unnecessary disappointment confronted those young people who by scholastic achievement and evaluation
of personality qualities were found to be not qualified to undertake the career which they had selected for themselves, and in many instances toward which they had been encouraged by advisers.

In addition to this misdirection of effort we should note further that of those students who do win admission to the medical schools, approximately 25% fail to graduate. This has been true over a period of many years. It is not always a question of scholastic failure which thus terminates a medical student's course, though this is true in perhaps 50% of the cases. Our best mutual judgment is therefore at times faulty.

The medical course today is difficult and costly; the advance in medical science has made it so; but as never before that service is needed, and must be provided by men and women qualified to render it.

We in the medical schools, eager for students of high caliber, ask your understanding of the aptitudes, character and fundamental training which will prepare students capable of qualifying for this greatest of all human services. We urge that counselors acquaint themselves more fully with the requirements of the medical schools, and that they put the student in touch very early in the arts college course, with the medical school she seeks to enter, in order that the preparation may be in most complete accord with the professional school's expectations. We are here to talk about these things.

We have asked our speakers today to limit their remarks to ten minutes, and to present briefly facts and opinions upon three aspects of this subject.

1. The opportunities that exist today for women in the medical fields, and on this topic Dr. Potter and Mrs. Woodhouse will speak.

2. The qualities, intellectual, emotional, physical, and the background of training which seem to give most promise of success in the medical school and in later practice. Dr. Fay and Dr. Bacon will speak on this phase of the subject.

3. The usefulness of the Scholastic Aptitude Test for Medical Students, as one of the criteria which is being used to aid in determining a student's fitness for the medical school course of study. Dr. Thorpe will report some of the findings revealed by this test.

But we do not wish to spend the afternoon telling you things. We are eager that you should tell us. We are confronted by difficulties and we need your sympathetic help. Therefore after these introductory discussions I hope that everyone here will feel free to question, to correct, to contribute in some way to our understanding of our common problem.

OPPORTUNITIES FOR WOMEN IN THE MEDICAL PROFESSION

ELLEN C. POTTER, M.D.
Director of Medicine for Institutions and Agencies
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In the minds of some of you there may lurk the idea that the field of medicine for women is a relatively new area of activity for them, and that the opportunities for women in the field are not so numerous as to warrant your directing any substantial number of young women into this field as their probable future career.

Because I think that it will be useful to you in any discussions with your students in the future, and to give you a background that they will need in order to develop a perspective and an understanding of the scope of the field of medicine, may I refer you to "A History of Women in Medicine," which is just off the press, written by one of the alumnae of this school, Dr. Kate Hurd-Mead, published by the Haddam Press, Haddam, Connecticut. I believe you will find it a very valuable addition to your library.
You will learn from a perusal of that book that the foundations for women in medicine were embedded in human society deep in the primitive past, when women were among those conspicuously successful in the practice of the art of healing. Later the record of their skill is found in Italy, Egypt, Greece and other lands.

A few days ago I was conversing with a physician practicing in one of the most rural counties in New Jersey. He was telling me of the tragic cases, brought to him in that county, which he was called upon to remedy as a surgeon, the results of inadequate obstetrical practice in that territory. He himself is a graduate of one of the medical colleges in New England, and he said to me, "Whatever else New England may not have in the way of medical service, in the smallest town they always have a good obstetrician, and the obstetrical practice in New England is far and away better than that of most other parts of the country."

That standard of practice undoubtedly goes back to colonial times when women were the obstetricians in that territory. They were the midwives. They knew as much or more than the men and in those early days there was little professional training. These women were called upon to serve their sisters in child birth, and we have the fact recorded on tombstones and monuments going back into the 1600's and 1700's. One Ann Eliot, for example, the wife of the missionary to the Indians, was said to have been "as good a doctor as any man in the colonies" and a monument was erected to her memory in Roxbury, Massachusetts, in 1687.

Then there was a Mrs. Wiat, who died in Dorchester, Massachusetts, in 1705, at the age of 94. She is immortalized on her tombstone by a statement saying: "She assisted at ye birth of 1000 and 100 and odd children." Of Mrs. Whitmore, of Marlboro, Vermont, it is graven on her tombstone that she officiated at more than 2,000 births and never lost a patient—a record modern obstetricians might well envy. It is, therefore, no new idea that is presented when we say that the career of medicine for women opens today tremendous opportunities.

You who are the deans of institutions training women in the academic field, probably realize that the establishment of Mt. Holyoke Seminary in the 1840's served as a spur to the women of that day to undertake professional study and this institution established in 1850, the Woman's Medical College of Pennsylvania, provided the opportunity for women to again assume responsibility for the care of the sick, a privilege which in the progress of centuries had been lost to them because of their inability to secure professional training.

Substantial arguments can be presented to you as to the need for women in medicine throughout the United States and for men as well. The studies made on the cost of medical care, and the distribution of medical practitioners, give ample evidence of the fact that there is great opportunity for both men and women in the various fields of medical service and that there is also need of more equitable distribution of practitioners throughout the country.

The individual, who is considering the possibility of entering the field of medicine in its various branches needs to have, in addition to any educational equipment in the professional field, certain personality qualifications which will enable her to adjust herself to the specific requirements of that special field in which she hopes to function, if she is to win success and satisfaction.

I suspect that everyone acting as an adviser to undergraduates in our colleges and universities, gives advice in the hope that it may result in the successful adjustment of the individual to a career suited to her individual ability. From my point of view this meeting today is of exceeding importance if we shall arrive at an understanding as to the type of person who is really needed in the field of medicine, and also an understanding of the opportunities that are available to that person.

What, then, shall we say are the personality qualifications which a woman should have, and the same would hold for men, qualifications over
and above the professional discipline and body of knowledge in the field of medicine, if she is to succeed? When I speak of the field of medicine in the broadest sense, I am including in it the health and social services which are so intimately tied together in the life of the individual.

The qualifications as I see them are: intellectual capacity, good health, emotional balance, industry, tact, tolerance, and a social point of view. One of the things which is so often overlooked, apparently, in the basic preparation of persons who enter the medical school and then go out into practice, is that they have not been given sufficient groundwork in the social sciences and social relationships, and their responsibility to the community as a whole. They are drawn into the practice of medicine as individualists, accustomed to stand alone and on their own feet. It is, sometimes, a long and painful experience for them to adjust themselves to the social relationships and responsibilities that they encounter in the community after they leave the medical school.

You may say these qualities that I have enumerated as necessary in a candidate for the medical degree are essential to success in any field in life, and that is true. The point I wish to make with you, Deans of Women, is that the best of your flock of undergraduates are none too good to be guided into the profession of medicine. I would appeal to you that you think of this field of medicine as the first field of opportunity rather than as the last in your vocational conferences with young people who are trying to find their way by clear thinking as to where they are going to make their contribution to life.

May I enumerate—with very little amplification—the variety of service, within the general scope of a medical preparation, which opens up to the person who has the medical degree and who has displayed the personal qualities necessary if one is to travel that long, hard road to a medical degree.

The individual who likes people, who enjoys mingling with them, has open to her the practice of general medicine; the field of medical and surgical gynecology; obstetrics and pediatrics, and the various specialty fields of eye, ear, nose and throat. Any one of those fields gives ample opportunity for a great variety of services and skills. Particularly does the surgical field give great opportunity to the manually-minded individual who is skillful in the use of her hands, as well as in the use of her brain. The opportunity in the field of general surgery is sharply limited for women, although many distinguished women have overcome the barriers.

For the person who does not mingle easily with other human beings, there are the laboratory phases of medical practice, the clinical laboratory, the x-ray laboratory, the pathological laboratory, etc., in which fields great contribution can be made to human welfare in health and disease.

There are those who have a basic interest in the welfare of human beings in their trade and industrial relationships. If they choose to go into that great field of industrial medicine, there is here a great opportunity. It is here that women may make a real contribution, and Dr. Alice Hamilton is outstanding in that field. In most of our large and many of our smaller cities the opportunities are presented as medical officers in the great department stores, where large numbers of women are employed; in such industries as the American Telephone and Telegraph Co., and in the various state telephone offices where there are many women, there is the need not only of medical service but of the development of a positive health maintenance program for the staff, and medical women find in this a real opportunity.

The work of the insurance examiner, which nobody really thought a woman could do when I came out of college, has now definitely been recognized as a field of service for women.

Of equal importance to all the above is the field of public health. The public has begun to realize that it is not enough to be able to cure the sick, that it is infinitely more important to maintain the health of
the mass of our population. It seems to me that the opportunity for women is unlimited in this field and here the ability to "get on with people" is a great asset.

Here you enter the field of maternal and child welfare, venereal disease control, tuberculosis, and school health, and a great variety of services of that sort, full time or part time as the case may be. In most cities of the United States such opportunities are available, plus the laboratory divisions of health departments.

There is work to be done in the abstract field of medical science; research without end is needed; and many women have special skill to contribute if, in addition to the research type of mind, they add medical knowledge.

Again, the undergraduate student who is educationally minded, who is not interested primarily in the practice of medicine but is interested in the education of girls and boys of the high school group, or girls in the college group, you have for that individual a vast opportunity in the field of education, and which correlates and uses all the skills and arts acquired in the study of medicine.

There are other fields of opportunity for the practice of medicine within institutions in the field of public welfare, in mental hospitals, sanitoria for the tuberculous, for the feebleminded, and the correctional institutions. It is too often true that we who look for people to fill these positions, both men and women, have to take the second or third best, because there are not enough with adequate poise and balance, holding medical degrees, who are ready to go into that type of institutional service.

Then we come to the great field of social welfare, into which I stepped out of the field of public health, and which has a great claim on women who have a medical background and the will to enter that phase of the public service.

It should be noted that all the medical skills which are implied in the above listing of opportunities can and are transplanted successfully by medical women to the mountains of the south and the mission fields in foreign lands. Graduates of this college were the first to enter these fields and are still represented on the firing line.

It may possibly be true that it takes a longer time to "arrive" after graduation from the medical school, than in some other professional fields, but I can assure you that the woman who is willing to "put out her shingle" in towns and cities throughout the United States, with populations from 20,000 to 100,000, will in a brief period of time be recognized as among the leading citizens of that community. She will have an opportunity not only for service in the health and sickness field, but will have a chance to enter into what Dr. Tracy calls the "extra-curricular activities" of that community to the greatest possible advantage to the community and herself.

Figures made available by Dr. Susan Kingsbury indicate that the financial return to the woman M.D. exceeds substantially the returns to the Ph.D., the M.A., or the A.B. of the same sex. The study made for the American Association of University Women indicates that of the women M.D.s reporting, 47% had incomes of $3000 or less and 39% more than $4000. The Ph.D.s reported 46% with incomes of $3000 or less and 19% more than $4000. Those with an M.A. reported 57% less than $2000; 33% reported $2-3000; and 10% $3000 or more. Those with an A.B. reported 73% income of less than $2000; 21% from $2-3000; 6% $3-4000.

May I say one last word to you who are responsible for preparing young women to enter this field—that anything you can do to stimulate the aspiring pre-medical student to acquire facility in the use of English well spoken and written, will add greatly to the possibility of success for that person.
OPPORTUNITIES FOR WOMEN IN THE MEDICAL PROFESSION

CHASE GOING WOODHOUSE
Professor of Economics, Connecticut College
Director, Institute of Women's Professional Relations

I am here to ask for help rather than to give it. The Institute of Women's Professional Relations realizes very keenly the need for exact and detailed vocational information on this whole field of medical service. I think it is fair to say that today we have less factual up-to-date information on occupations based on training in science than on any other field of interest to the college woman. The available studies were all made some years ago and with the rapid changes in our economic organization during the last decade they are no longer of use.

For this reason all of us in college personnel work welcome this meeting and hope it will be the forerunner of others.

In the colleges we have full information on pre-medical course requirements. We know quite a bit about the type of person that the deans wish would attend medical school. However, we cannot answer very fully the questions which the students ask us concerning the various branches of work open to them after completion of their medical training. The sort of information Dr. Potter has just given us is what we need and must have more of.

I should like to discuss with you certain objections which are offered when it is suggested that promising young women choose medicine as their life work. It is pointed out that the number of women in medicine in proportion to the number in all professional work has fallen off quite decidedly. In 1910, for example, there were 12 medical women to every 1000 women in all professional work; in 1930 this ratio had changed to 5 in every 1000. These figures are interpreted as indicating that women have less opportunity in medicine today than formerly.

But what is their real meaning? The census lists under professions many occupations that you and I would not call "professional." There has been an enormous increase in the number of women in these semi-professional services, such as attendants and assistants. Thus the basic figure of all women in professional work in 1930 is not comparable for the purpose of such comparisons as proportion of women in medicine with the same census category for 1910. What should be done is to eliminate all semi-professional occupations for each year and then make the comparison. I do not want to bore you with a lot of figures but am sure you will see the fallacy in the uncorrected comparison.

Another comparison frequently used to show the declining importance of women in medicine is that of the number of men and of women doctors. In both 1910 and 1920 there were 59 women doctors for every 1000 men doctors. In 1930 this ratio had dropped to 52. How can this be explained?

The decade 1920 to 1930 is a very interesting one in the history of women's work. The Great War opened opportunities for women in practically every field of work. The number of choices open to women from 1918 on were much larger than in previous years. Younger women, of the type who in 1912 might have entered medicine, in 1922 had so many choices that it was only natural for some of them to be directed into other fields. Since there was no comparable factor affecting occupational opportunities for men, the ratio of women doctors to men doctors might well have been expected to fall between 1920 and 1930 as it did.

In other words we must remember what has almost become a slogan of mine, "jobs do not grow in a vacuum." Jobs grow in communities. We must cease to talk of a job as if it were a separate thing in itself and realize that it is closely tied into every phase of our social and economic life. In interpreting figures of change in the number or proportion of women in medicine we must take into consideration the entire community picture before concluding that these changes mean that opportunities for women in the medical field have been decreasing.
One argument against the entrance of women into medicine appeared in an article in a recent number of one of the medical journals. After discussing opportunities in medicine for men the author dismissed women with the sentence—"Medicine does not offer them much because of their sex and physical inadequacy." Apparently he had not seen the sturdy looking women on this program!

Shortly after reading this article I saw in the New York Times, November 20, a report of the 77th birthday celebration of Dr. Mary M. Platt in a small town in Vermont. Dr. Platt had been in active practice for 30 years. For many years she got around the countryside in a horse and buggy. Then she learned to drive an automobile. It was not until she was 73 years old that she decided to retire. Meanwhile she had earned enough to build a town library as a memorial to her husband.

One instance does not prove a case. I cite these two articles merely as an illustration of the fact that there is still traditional opposition to women and that we still have to work and insist that women be treated as individuals differing one from another, and not as a class, all alike and each a complete example of all feminine weaknesses.

There is another factor, however, which has not been falsely interpreted. There can be no question as to the expense of medical education and of the scarcity of fellowship aid for women medical students. This would seem to be a problem with which our women's organizations might well be concerned. It is a real task for all interested in the advancement of women—to make possible the provision of adequate financial assistance to women of outstanding promise in the medical field. This aid is needed at both the undergraduate and post-graduate levels.

There is one subject connected with women in medicine concerning which I am not sure I should speak, as so many people insist upon taking an unreal altruistic attitude toward this subject. However, Dr. Esther Loring Richards at the Atlantic City meetings from which many of us have just come, spoke in no uncertain terms in criticism of women who were willing to work for very little, who felt they must think only in terms of opportunity for service and so lower the prestige of their work. Now women in practically every line of work earn less than do men in the same type of job. Time may change this. However, granting the present situation, you might be interested to know that in the studies which have been made of earnings of a large group of women, medical women are found very near the top. For example, take two studies representing two very different groups. The American Woman's Association made a study in 1931 of the earnings of its members—a well-paid New York City group. Taking all women on salaries who reported for the study it was found that at the very top of the list were the women with physician's training. Taking the average salary of all the women reporting as 100, the comparative figure for the physicians was 231.2.

Much the same results came out of a study made by the Institute of Women's Professional Relations in co-operation with the United States Office of Education of 6665 graduates of land grant colleges. In the entire group those with medical training were second from the top in total earnings classified by occupation.

Further, as shown especially in the New York study, the medical women are not at the will of the ups and downs of economic crises as much as are women in other occupations.

There is very little which I can add to what Dr. Potter has said on openings for women with medical training. There are, however, a few observations which I should like to pass on to you. They fall under the head of opinion rather than fact because as noted above, there is no recent study in this field. The Institute is now formulating plans and hopes to have funds to make a detailed survey of opportunities for women in the whole field of science.

There seem to be certain indications that the services of women doctors will be more in demand. Take the field of private practice. More
and more families are getting the idea of preventive medicine. A growing number of people are looking upon their physician as a private health officer. The child care and development study groups have done much to bring this about. Women physicians have been interested in preventive medicine and are the natural ones to fill this new demand.

Dr. Potter mentioned institutional practice. We have been checking the requirements in state laws and local regulations concerning the medical staff of public correctional and health institutions. It is becoming more and more usual for legislation to require that there be one or more women physicians on the staff of such institutions.

Personnel work in colleges has been a factor in emphasizing the need of high-quality health service including psychiatric service. Good health, mental and physical, is a prime occupational requirement. For this same reason there is a growing interest in health services in industry. For women students and women workers such service must be in the hands of women physicians.

Another indication of new demands for women physicians may be seen in the growing interest in "marriage clinics." There are laws in certain states requiring pre-marital examination and a physician's certificate before a marriage license may be issued. In such communities people are asking for women doctors who can not only make such examinations but who are prepared to give advice on problems of family adjustment, to act as marriage counselors.

Again in the government service merit requirements for the public health officer are in many communities better worked out than are the qualifications for other officers. In such salaried jobs women are doing excellent work.

So one can say that there are indications of new opportunities for women in medicine due to better information on how to bring up children and to a very real interest in developing a better type of family life and more satisfactory marriages. Institutions are being organized along better lines. Public health work and preventive medicine are more appreciated. For all these reasons there would seem to be a demand for the woman physician and medicine should offer real opportunities for the finest type of college girl. The girls want work that is satisfying in itself and that also will enable them to make a little dent in the economic and social world, make their communities fitter places for happy living. And this opportunity medicine would seem to offer.

SELECTION OF MEDICAL STUDENTS

Marion Fay, Ph.D.
Professor of Physiological Chemistry
Woman's Medical College of Pennsylvania

In reading over the study made by the Association of American Medical Colleges of applicants to 79 medical schools, one has much the feeling expressed by one of our medical students the other day. She could not understand how anyone could fail in medical school, for she felt that applicants so rigidly investigated simply could not fail.

The large number of applications received by some of our medical schools make it possible for them to accept only about ten per cent of those applying, which should give opportunity to weed out weak students. Yet we find that the failures to graduate from all causes average about 22 to 25 per cent in most of our schools, the larger part of the failures coming in the first year. I am interested in finding out why and have thought the matter over with some concern in the years since I have been teaching first year medical students.

Why do they fail? In the first year of the medical course, Anatomy, Histology, Physiological Chemistry and perhaps some Physiology or Bacteriology are given. Certain biology, physics and chemistry courses are
required for entrance. Are these requirements adequate and are these subjects adequately taught? To answer the first question think with me what intellectual training a medical student needs. First a thorough knowledge of certain important fundamentals of science, then careful drill in exact laboratory technique, training in observation and in describing accurately the thing observed, and finally ability to interpret these observations and from them draw conclusions. (I am purposely omitting the "human" qualifications necessary for the doctor—they require a special discussion in themselves.) The laboratory method of teaching was designed primarily to inculcate these very qualities. I believe that the pre-medical course contains enough required subjects with laboratory training to meet this need adequately, if these courses are well taught.

The second consideration, then, is to decide whether they are well taught. What does the student learn in his pre-medical science studies? In general the students whom we receive for many schools do not know their fundamental facts. As an example, important mules like the gas laws are learned by rote, no practical application is made of them and they are quickly forgotten. When their application is needed in the study of respiration or of blood gases, the student has no knowledge to build on.

What does he know of laboratory technique? The laboratory sections in many institutions are carried on with too few and too inexperienced instructors; laboratory exercises are supposed to carry themselves along with only occasional supervision. The immature student learns to "slide by" with a minimum amount of work; the upper classman tells him that he cannot get through the work anyway, so why try. Year after year it comes to me with a shock that students who would never cheat in a written examination consider it perfectly ethical to manufacture results in the laboratory.

Often classes are given more work to do than they can do well, and either make an attempt to complete the assignment and do it badly, or report that they have completed work which they haven't done. When note books are due the student sits up all night to copy from an old note book passed down through student generations and hands in his copy having acquired no wisdom or virtue in the process. This is a surprisingly general habit among students and a woeful commentary on our laboratory teaching. It is a difficult attitude to fight against.

Year after year I assure my classes that quality, not quantity, is the aim of our course. Once after I had delivered this assurance very earnestly, one of my students came to me and said, "I am going to take you at your word. All of the other fellows say I'll flunk if I am honest in my reports but I am going to take a chance that you really mean what you say." He did take a chance and he passed the course. For most of them the habit is too deeply ingrained and for them it becomes a sort of game. They have never been introduced to the idea that upon the accuracy of their technique and calculations something important really depends, and they have to be convinced that they must be able to carry out a procedure, not just know how it is done. One applicant told me the other day that she could do quantitative analysis on paper and seemed a little amazed when I asked her if she planned to calculate a patient's blood count or blood sugar on that basis.

Until the pre-medical training really teaches fundamental facts and technique we shall continue to be at a loss in selecting medical students. If a student comes to us with a passing grade in quantitative analysis, are we expecting too much to assume that he can weigh accurately on the analytical balance, use a pipette and burette correctly and be able to do the calculations involved in a simple analysis? If he has "passed" organic chemistry can we expect him to know the fundamental groups of organic compounds and something of their behavior?

How much can we tell about the student from grades and recommendations? When an application is received we go over the courses presented for entrance, try to evaluate the grades, read the recommendations
from professors and others, and in an interview try to get some idea of the real training of the student. Naturally if a student has an A and B record, and her teachers think well of her we are apt to be impressed with her ability; the school from which she comes and our knowledge of the professor's attitude towards recommendations of course carry much weight. Many professors do earnestly try to co-operate with us in evaluating the student's merits, and to these we are very grateful. Occasionally we get a hurried reply which results in an absurdity like the following: the blank which we send to be filled out came back one day with all three of these items checked: "I recommend unreservedly; with reservations; not at all." Naturally the rest of the comments on this recommendation did not impress us. And on one occasion we received one gentleman professor's verdict "Miss Blank is a cute little girl." Usually faculty members are much more thoughtful than that, and we soon learn to know which recommendations are made with careful consideration of the student's abilities and which are dashed off in routine fashion. It should be fairly obvious that no matter how cute the little girl is, she may or may not be fitted for medicine which is the question under investigation!

What else do we look for on the record submitted to us? Besides the required courses, the student has enrolled in a number of other classes in which we are interested. Often we find that the applicant has been advised to take histology, embryology and physiological chemistry—courses which they will repeat in medical school. This duplication seems unnecessary when there are so many other subjects which cannot be studied in the medical school and which are needed for a broad, general foundation. If the student has time for another chemistry course, let him take physical chemistry; or economics, sociology, history or literature—one of those subjects of which it has been said, "They do not make the doctor but they make him a better one."

Finally may I discuss briefly the type of course offered as a "pre-medical" course? In certain schools special sections or special courses are offered to the pre-medical student. If these are designed to better meet his specific needs and really do it, the idea is an excellent one; if in them the student is not held to the same standard set for all students but is allowed to pass with less work and with less knowledge of fundamentals, such courses are a menace to medical education. I have known of such courses in science designed primarily for students in professional schools and known to the students as "pipe" courses. The pre-medical student is not the only one so sinned against. The content of a course may well be different depending on the application to be made of it, but certainly the standard in pre-professional training should be at least as rigid as that of the courses meant for Liberal Arts students.

I turn to you for help in solving this problem. We are trying to evolve a method to choose as entering students in medicine, individuals with adequate training and ability. Until we know what a passing grade in a course really means we are handicapped in our effort to select students who will not fail; until we can be sure that our candidate has a solid foundation of fundamentals of knowledge and technique we cannot predict with any certainty what the performance of any individual in medical school will be. Are we expecting too much of pre-medical students and of pre-medical faculties in asking for this? The question is open for discussion and I shall value your help and advice.
QUALIFICATIONS FOR SUCCESS IN MEDICINE

EMILY P. BACON, M.D.

Professor of Pediatrics, Woman's Medical College of Pa.

An individual's success in any line of activity depends upon whether or not he or she will be happy and useful in that line. I am going to give you my opinion concerning the qualifications a woman should have in order to practice medicine happily and usefully, and therefore, successfully.

I have listed five “don’t” groups—five kinds of women whose qualifications contraindicate that they practice medicine.

First is the girl who does not like biology or chemistry. If she is not interested in investigating and analyzing in the laboratory, she will not be happy in medicine where one must dig far below the surface of what one sees and hears in order to understand why the patient acts and feels and is sick.

The second “don’t” girl is the one who has done only average or below average work as a student in college. Such a girl is either lazy or a poor student. If she is lazy, certainly steer her away from medical school and the practice of medicine. A practicing physician is a servant to the public to whom she must give untiringly of her time and energy. If the prospective medical student does not love to work, she should never plan to practice medicine.

I think more kindly of the other type of girl who makes poor averages at college—the poor student. She is often a fine type and does the best she can to do good work but lacks the mental application and concentration necessary to study medicine. If she lacks it as a pre-medical student, she will as a medical student and as a practicing physician. This is no disgrace! Direct her to other vocations for which she is fitted and in which she will be infinitely more useful and happier than in medicine. These other fields are just as important as medicine and need good women, but of a different mental aptitude.

The third “don’t” girl is the careless and inaccurate one. She is a particular annoyance in medical school because she may appear quite a genius in some respects but absolutely unreliable in others! The honest teacher has difficulty in determining whether such a student actually knows more than seems apparent from her almost illegibly written work and frequently illogical and impertinent oral discussions of a case.

These personality defects are permissible in a young child but they should have been corrected by the time the girl gets to college. If they have not been, she should not be admitted to the study and practice of a profession the very basis of which is accuracy and dependability.

Another “don’t” group includes the one whose health is poor and the other one who enjoys poor health. Both of them may have done good work at college, and pressure is brought to bear on the medical school to admit these girls. Too frequently they gain admission and struggle along for a few months or years and, meanwhile, lose valuable time and money and health. Advise girls with questionable health not to come to medical school for a diagnosis. Advise them to stay out of medical school until a diagnosis of their condition is made and they are quite well. Even then, they should consider other vocations for a life work which would be less of a strain on their health.

The last “don’t” girl is the girl without funds. Sad as I feel about it, certainly the only thing to do is to guide her away from medical school. The exception to this rule is the brilliant genius who can get scholarships. But I still say, steer her away from the practice of medicine. Let her come to medical school if she wishes but not with the idea of eventually practicing medicine because the brilliant genius is neither happy nor particularly useful in the practice of medicine. Her field is not in the actual practice, but in the research branch of the science.
These are some of the indications which in my opinion should help us in guiding girls away from medical school.

At this point I should like to discuss briefly one fundamental principle which I feel is too casually discussed with prospective medical students. Some years ago, Dr. John T. Finney of Johns Hopkins was asked if there was opportunity for women in medicine. His reply follows: "Surely there is room in the profession for women, and this will be increasingly so, but they will meet with prejudice and opposition, and a great deal will depend upon how the individual reacts to these experiences."

I feel that it is utterly unwise for us to advise women to go to medical school unless we put before them this side of the picture, which was not only true twenty-five years ago, but is still true. I think a girl should enter medical school fully aware that she will meet prejudice and opposition. She must face the fact that tradition has decreed that medicine is a man's job. If a woman goes into the profession she is a bit off color and peculiar in the eyes of the world. If the prospective medical student does not understand this situation, if she expects an understanding and sympathetic public to meet her with open arms she will be terribly disillusioned. This is the sort of thing that makes a woman bitter, resentful, jealous, and depressed, and most unhappy, and even harmful in the practice of medicine.

On the other hand if she understands this special problem and still has a great longing for the practice of medicine, urge her to go ahead. She is endowed with certain natural weapons which if used constantly will do much to help to break down the traditional prejudice which her male colleagues and the general public still feel toward women in medicine. She will eventually find great personal satisfaction and happiness and success in her chosen career.

What are these weapons? They are peculiarly feminine. They are gentleness, and sympathy, and understanding and care about details. Women are too apt to forget the power they can exert by developing and using these natural traits! They are apt to crave for masculine power and strength, forgetting that the feminine of the species is endowed with these other characteristics which through generations have molded the policies of the civilized world.

I would say then, in conclusion, that the type of women who will be happy and successful in the practice of medicine is, first, the one who understandingly and good-naturedly accepts opposition and prejudice. That must be clearly understood. Second, the one who meets opposition and prejudices with the essentially feminine traits of gentleness, understanding, sympathy and care about details. Third, the one who is a diligent and intelligent student. Fourth, the one who is glad to give generous service. Fifth, the one who is careful about her work as well as personal appearance. Sixth, the one who has good health. Seventh, the one who is not financially embarrassed.

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I would like to continue Dr. Bacon's thought in this way: The time is that period of the American scene which, at least in regard to furniture, has been described as "late General Grant and early Polk." The scene is the faculty room of one of the oldest medical schools in this country, and the occasion is a faculty meeting called to discuss a very important, very serious matter. The discussion had gone on for a long period of time, and finally one of the oldest, most distinguished, most lovable characters on that faculty was asked for his opinion. And he said, "A woman spoils the perfect nurse to become a mediocre doctor."
I have often heard it said that it is well to make some outlandish remark such as that, in order to attract the attention of your audience. I thought certainly a remark like that in this place would attract attention.

Medicine has a role to play in education in general. Not perhaps in the way that we would ordinarily think. It demands, of course, special knowledge and technical information and specialized technical skill. As a matter of fact it is more basic than that. I believe that medicine has a role to play in general education along a number of different lines. For instance, it is possible, by the development of medical education and later by the practice of medicine in its broadest aspect, to help education in these ways:

Requiring mental action patterns in their broadest sense. True mental patterns, of educated people, that is. Medicine can also help to eliminate the superstitions and untruths which creep into education in general, because medicine is supposed to be a science, and those who practice it are supposed to be seeking the truth and to be honest with themselves.

Another thing it can do is to teach people to appeal to authority for the determination of conduct, rather than to appeal to emotions or to a certain set of rules.

And, again, it can teach people in general, from the educational standpoint, a true understanding of the great storehouses of accurate knowledge, because a physician depends on knowledge which has been acquired patiently and painstakingly, knowledge which he must use in an accurate study of the case before him. Medicine, in the way it is taught, in the way it is practiced, in its principles, may teach educators and people in general to seek truth for its face value, apart from personal prejudice and apart from self-interest. In other words, medicine can teach people and educators to apply the objective spirit of research to the problems of individuals and groups of individuals in the process of living. Medicine can teach people the higher qualities of successful actions in living, and for that reason we hope people in general will have increased intellectual power and increased emotional stability, particularly the latter. I think most people do, nowadays, have an increasing amount of emotional strength—we wonder.

It is possible, then, that a doctor will have a broad sphere of influence on his patients in the community, if he has been educated properly, which means that he has been selected for this education, made the most of his opportunities, and has practiced medicine in the highest possible way.

For centuries we have been accumulating facts and formulating theories about the things in our environment, and we have learned a lot of things in the last three, four, or five centuries. But we have learned very little about ourselves. We still have a lot to learn about man—*homo sapiens*—and his consort. We often hear now the expression that we must educate for a changing world. I don't like that expression. I think it is better that we should educate for a world of change. It is perfectly true that we must educate in such a way that our students will be able to take advantage of new things when they come along, but I don't think it is always necessary to tell them about the new things. Let them figure them out for themselves and give them a chance to do a little thinking of their own. We mustn't make education too contemporaneous, too up-to-date.

In view of the fact that we know so little about ourselves, we are apt to be a little pessimistic, but there are signs that this condition is changing. We are finding things out about ourselves; historically, this is only of recent origin. Formerly it was impious to study man at all, certainly it was so to study anything about his mind; but now we are allowed to do it. We are no longer forced to believe that a man has a body, which we might study, and a mind, which we might not, or that his
consort had limbs, not legs. Now we know man and his consort have more than just a mind and heart and soul; we are actually willing to admit now that they are just psycho-biological units. We are now willing to analyze ourselves.

That is why a number of different tests of all kinds have sprung up. There are lots of tests—oh my, but there are lots of tests! The professional educators, with a little psychological training, have been eager to devise tests of various kinds. This is mainly, I believe, because educators have gotten tired of reading the D.S.A. type of examination, so they have decided to have tests where it is possible just to check off results. Of course the student has to learn a certain amount of material, and a professor has to make out the examination, but it is usually a case of the professor feeling sort of fed up with the whole matter and feeling that he doesn't want to read the papers, and here is an easy way of doing them—his secretary can read the papers if he uses one of these newer types of examination. The answers can only be true or false or obvious or something like that. Of course it does help to eliminate cheating (except mass cheating).

What about these tests? Well, tests of various kinds have been known ever since man was known, and there are numerous tests in history. There are even tests in the Bible. I can recall one series of tests which is found, I believe, in the Seventh Chapter of the Book of Judges. Gideon was called upon to choose some select soldiers to conquer the enemy of that particular moment, and a series of aptitude tests was proposed to Gideon in order to make the selection. Since those tests were of divine origin, they were highly successful and Gideon's army naturally triumphed.

That is just one of the tests that occur to me from history. But there are all sorts of tests of mental ability, of intellect, and so on. It seems to me that we who are trying to select medical students should not make the attempt to use too many objective tests on our prospective applicants. We must assume that these girls are intelligent enough to be admitted to some college. At the start we are faced with the fact that they have been admitted to a college and that they are now ready to be admitted to a medical school, and that they have been exposed to at least three years of college education.

There are certain fundamental processes in learning and intelligence which can be tested, so it is assumed by educational specialists now. It seems to me that tests of that kind should be given before the girl or the boy enters college and, if necessary, at more or less periodic intervals as he goes through. By this means you can be sure that the person who is pursuing and passing the college courses has real intelligence and real intellect, and not just merely a memory. But when it comes time to select these individuals for medical school, it seems to me that other factors have to be considered. Some of those have been explained to you today. And for some of these factors we have no tests except relative tests. We hope that your students, for instance, are honest, not only in a general way, but intellectually honest, when, for example, they go to bed and think about themselves and their own capabilities. Of course, they have got to be industrious. It is really just too bad if a medical student is not industrious; even though they have a fairly good intellect and a fairly good memory, unless students are reasonably industrious, the dean is bound to have a painful interview with them and their families and friends towards the end of the year.

Another thing that the medical student or physician needs is a faithfulness in duty, which is allied with good habits of industry. Because if he doesn't have this characteristic in college, or at least have it instilled in him in college so that there is a chance to develop it in medical school, then the practice of medicine is no place for him, for the physician must be faithful to duty.
And still another element is character. Since we all know what it is, I won't attempt to define it, like personality—since we all know what good personality is, I won't attempt to define that either.

Finally the student must have an interest in medicine. There are tests for vocational interests now, and they can discover whether the student should be interested in medicine, or dentistry, or beauty parlor work, or running a steam roller, and so on. But the student must have an interest in medicine or it will be very bad for him to go into it. I don't see how the student in medical school could possibly survive four years unless he really did have an interest in medicine. I am certain he couldn't survive an internship, and I am quite sure he could not survive a life-time of practice, unless he had an interest in medicine. Of course, some men who have pursued a medical study in the past get out of medicine in one way or another—sometimes by becoming a dean, you know.

And then, finally, the person must have an aptitude for medicine, and for that reason we have attempted to devise an aptitude test. This is what the Aptitude Test comes in that Dr. Tracy said I was going to talk about.

This Aptitude Test has now been running about eight years, given first to freshman students in a medical school, and finally, as it was developed and made more accurate, given in a few colleges. As the interest in it grew, it was sponsored by the Association of American Medical Colleges, and run under the supervision of a committee representing the Association, and still is. These tests were originally devised by Dr. Moss of Washington, who was formerly on the staff of the faculty of George Washington University.

It has many methods in common with other aptitude tests or educational tests, in that it tests certain well-known intellectual types of achievement, such as memory, the ability to reason, the ability to utilize the basic material which has been learned (I mean by that the material which remains after all the froth is forgotten). Out of all the things which the boy or girl learns for the examination period, in order to pass the final examination, we usually find that even in the poorest students there is sort of a residual amount of information which remains. We try to test his utilization of that residual information, and to find out how much residuum there is. Sometimes, of course, there is very little—what is described as "a very faint trace."

And then we attempt to see whether this boy or girl who wants to go into medicine can study some new material which he has conceivably never seen before, and put it into use at once. Finally, the whole test is given with a time limit, because after all, the medical student has to work with a time limit and the doctor has to work with a time limit. He can't take as much time as he would like to have to study a case carefully. He has to do it quickly.

That, in brief, is what this Aptitude Test is, and that is its background. Each year hundreds of questions are submitted to the committee, and Dr. Moss will get some bearing on these various types of pursuits. They are finally blended together after each individual question has been criticized, deleted or retained, until the total test is devised. Then, on one given day this test is offered in about six or seven hundred different colleges and universities in the United States and Canada and the possessions. About ten or eleven thousand individuals now take the test, because we have been able to rouse the spirit in these young people by propaganda and other necessary means, so that they will take this test and pay a dollar for it, because they hope to get into medical school, and we believe it will help us to decide each case a little more accurately. It does.

What are the results of these medical aptitude tests? In the first place, let me say some of the things the Medical Aptitude Test does not do. I don't think that it has any relation whatsoever, and will not tell us nor give us any information about the boy or girl's future success in
the practice of medicine. It gives no information about his future success as an intern in the hospital. In spite of what Dr. Moss feels (of course, he is very optimistic about it), I do not believe that it tells us more than just one thing, and that is—whether a student will be able to pass the average medical school examinations, and whether he will achieve reasonable success, moderate success, or great success in medical school. In other words, I don’t think that the Medical Aptitude Test is concerned with anything else than grades that might be attained in medical school and success or lack of success in medical school.

For that reason the committee has in recent years restrained the efforts of some of the members on the staff from attempting to make a correlation with anything else than success in medical school.

What information has it given us? Well, we find that those students who make “raw” scores in this test, such as to place them in the upper 10 per cent of all those students who take the test, those students who are in the first 10 per cent have a very, very negligible chance of failing in medical school. The chance of failure increases, the lower down the score—the smaller the score, the greater the chance of failure. On the other hand, or conversely, the higher the score in the medical aptitude test, the better chance that student has of achieving more than average grades in medical school. That has worked out very well; we have had reasonable success along that line. The correlation between a Medical Aptitude Test and grades achieved in medical school is about 70%. The best correlation, however, is obtained when you consider together the grades obtained in college and the achievements on the Medical Aptitude Test. Together, those two criteria give us, we believe, fairly accurate information about a student’s possible success in medical school (but not his success as a physician). That’s all, but that is important information for us to obtain.

As a matter of fact, the test is used in other ways. For instance, Dr. Tracy has told you about the number of applicants for medical schools in this country. I, unfortunately, am on the admissions committee of one of those benighted institutions where we have to consider more than 1000 applications for admission a year, and where we should be able to pick a class in which no one would flunk. Our average mortality is about 8%, year after year—a little higher some years, but a little lower other years. We have never picked a perfect class yet, in spite of careful inspection of grades, Medical Aptitude Tests, and all the other criteria which might be used.

We have now been burdened with more than 1000 applications for seven or eight years, and this year we are in the throes of selecting our class from about 1300 applicants. We are going to take a class of about 130. We use the Medical Aptitude Test in our selection; we can use it in various ways. We can not only use it to select students, but it also gives us some information about colleges. These applicants come from 500 or 600 colleges and we can from time to time make observations about the probable type of work and the probable type of scholar who attends a certain college, by reference to their Medical Aptitude Tests. In that way we can get information which we were never able to get before in such an objective way; formerly we only got it by suspicion.

The Test is always very useful in providing you with reasons why you have turned down a certain applicant, especially when some of his political friends come in to see you about it. Oh, I can tell you, it’s a grand and glorious feeling, when that applicant has had a low grade in a Medical Aptitude Test! There is something you can tell that man! You can say, “Here’s a test that more than 11,000 boys took, and the boy in whom you are interested got only a percentile rating of 2 or 3.”

But for all these reasons—and I think Dr. Tracy will agree with me on this—the Medical Aptitude Test has been of some value. I don’t believe any of us would care to use the results of Medical Aptitude Tests alone, any more than we would care to use college grades alone, as criteria for the selection of medical students.
On the other hand I don't believe you would care to use the personal interview alone as your sole criterion in the selection of medical students. You can make some terrible mistakes. I know I do. I have to laugh about them, when later objective results come to hand and I see what I have put down on the application form; it is sometimes very laughable.

So it is that we cannot use any one of these criteria by itself, but we should attempt to use a whole battery of them. It is only logical to do so. The physician uses not one test, but many criteria in his diagnosis of a patient, and we must do just that sort of thing in the selection of medical students. (Applause.)

DISCUSSION

DR. TRACY: Dr. Thorpe was the last speaker on the program this afternoon. However, I am sure there are now questions which some of you would like to ask our various speakers, so I throw the meeting open for discussion.

QUESTION FROM THE FLOOR: There has been a great deal said about the recommendations which you receive from professors and other college representatives on students who are applying for admission to medical school. If you could get more of a community idea on a student, instead of these individual opinions, don't you think it might be a useful thing?

DR. TRACY: It would be, and is, very helpful. We have had various types of answers to our requests for information. One of the most successful has been that instead of having individual members of single departments recommending a student, a group that represents the whole college sends an appraisal of her character and her ability.

FROM THE FLOOR: That is our practice at New York University. I do think your opinion on a continuity in this matter of recommendations is an excellent one. The people in charge of the recommending committee could check the previous recommendations against the students' success at college.

DR. TRACY: I think that is a point which we might well emphasize. Some of the medical schools are definitely pursuing such a program, checking back with the pre-medical institutions regarding the performance of their students; and some colleges are writing to us, asking for definite information regarding the records of girls they have sent up here. And of course that does help you to know whether your committees are judging wisely, and whether your students are performing as you hoped.

FROM THE FLOOR: Some of the matters which have been pointed out are very valuable to know about. But don't you think there are many facts about a student which can best be described by others than her instructors? A student is not only in her classroom and not only in her pre-medical classroom. She must be seen in her total environment, and especially so when you have a residential college, or where you have a personal touch with the students in their out-of-class activities. There you often have a very valuable insight on her attitude toward others, her sense of responsibility, tact, honesty, considerateness, and you often have a very definite idea about the financial situation, which you do not get from an observation of the classroom work alone. I am wondering whether it might not be valuable to have either direct correspondence with the dean, in the case of women, or send to her a blank to get such supplementary information to add to what you get from her instructors in charge of her academic work.

DR. TRACY: We make a point of writing to the deans of women with respect to those items. Sometimes even the dean of women has had so little personal contact with that particular student that she can give us no information at all, and refers the inquiry to the teachers and sends
us a consensus of opinion of teachers. That is always disappointing to us. I agree absolutely with what you say, and consider it most important. The best letters we receive—the most helpful letters about students—are from deans of women whom I know personally and who know me personally. We meet annually, and always try to tell each other the truth.

Deans of women who are perfect strangers to me are sometimes completely uninterested, apparently, in trying to get a high type student for us. I think that a personal acquaintance ship, such as I have with Dr. MacTavish of Washington Square College, and with certain others, is of the greatest value. What do you think of this, Dr. Thorpe?

DR. THORPE: We have built up over a series of years a tremendous number of records regarding prospective students and the recommendations which are made in their behalf by various persons, such as their professors, etc. It has been interesting to check back and see how reliable or unreliable is the information we get from most teachers. Going back through the old cards that we have, I would say that the most reliable information comes from these professors; the next most reliable has come from medical officers; still less reliable information comes from deans; and the least reliable of all from college presidents.

FROM THE FLOOR: May I ask a question of Dr. Fay? What do you think of the worth of laboratory drawings in courses in biology, and do you think that ready-made outlines, to be labelled by the student as her study proceeds are more desirable than the standard form of practice?

DR. FAY: I hesitate to answer that. I feel personally, from some of my experiences in watching students in such courses, that much of what they do in biology laboratory is often wretched work. Most students feel that they ought to make some effort at drawing. Often, however, they go home and copy from an old note book. If you have a large class probably the outline would be much more sensible.

FROM THE FLOOR: If students are to be properly prepared for medical college, wouldn’t a course in histology and a course in physiological chemistry be practical?

DR. FAY: As I stated in the beginning, I have heard the criticism made a number of times regarding a student’s taking much histology or embryology, since it will simply be a repetition for him later on. I am willing to be contradicted on this, but I think that most people will agree with me on that point. Personally, I feel that if a student has time to take another chemistry course, I would prefer a course in physical chemistry if it was in preparation for my own course.

DR. TRACY: I should like to call on Dr. Curwen of the Department of Anatomy to discuss the particular question about drawings since this is in her special field of histology. I am sure she has something to say on the matter.

DR. CURWEN: I do think that drawings are very useful as a means of forcing the student to observe. The necessity for recording laboratory work by means of a reasonable number of drawings will frequently force a student to make observations which might otherwise escape him, and may be made to constitute a valuable method of mental training.

DR. TRACY: There are many phases of this subject which are of interest, but time must limit our discussion and it is necessary to bring our meeting to a close.

I wish to express to our speakers our appreciation of their cooperation, and to you all our hope that the afternoon has been an interesting and perhaps also a profitable one. If we have come closer together in our mutual understanding of each other’s efforts in preparing young women for the study and practice of medicine, our conference has indeed been worthwhile.
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