LEGACY ARTICLES

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There is Need for Broader and More Effective Cooperation Among the Health-Service Professions*

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That the maintenance of a state of good health is an essential factor in making for success cannot be gainsaid. It is

*This address was delivered before the graduating classes of the Health Unit of the University of Tennessee, June 9, 1941 and sent to this Journal for publication by Dean Robert L. Crowe. This was the first time that a pharmacy man had made a commencement address at this University. The address was commended locally because the subject matter pertained to all the professions represented in the class. Usually such addresses are given by medical men and directed solely to the graduates in medicine. It is reported that plans are being made to have a pharmacy man give the address every third commencement. Again there is evidence that pharmacy marches on.—Ed.

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attested to by the written words of such eminent men of affairs in their times as Herbert Spencer and Gladstone. Herbert Spencer in his essay on man makes use of the following statement which he attributes to an unnamed writer: "*The first requisite to success is to be a good animal,*" and then he adds "*to be a nation of good animals is the first condition to national prosperity.*" Gladstone put it in a little different way, but the meaning is the same. He said: "*In the health of the public lies the wealth of the nation.*" Certainly, without a sound body, man is handicapped, not only in the achievement of success in his calling, but also in the attainment of a full measure of happiness and comfort in living. The condition of our bodies is, therefore, of great concern to all of us at all times. It is of paramount importance to us at this time, when the democracies of the world are fighting for their very existence against the armed might of the totalitarian states, and when superior physical and mental fitness may prove to be the factor which will decide the outcome.

Medicine, dentistry, pharmacy and nursing are the health-service professions to which has been assigned the task of keeping our bodies in healthy condition and they have accepted this assignment as their chief responsibility. It would, therefore, seem that every means which offered possibilities for increased efficiency in meeting this responsibility would be immediately seized upon by them. Unfortunately, this has not been done. A fairly extensive acquaintance with the aims and accomplishments of all of these groups, gained through observation and personal contacts over a period of thirty odd years, compels me to assert that the one means, which in my opinion, offers the greatest possibilities for increased efficiency in the services rendered by these groups, has not been made use of in this country to any marked extent. In fact, until quite recently, it has been almost completely neglected. I refer to cooperation—cooperation, not only among these groups and the research workers in the sciences which are basic to these professions, namely, chemistry, physics, biology, bacteriology, physiology, pharmacology, et cetera; but also to cooperation among the practitioners of these professions in the prompt and efficient application in every day practice of the discoveries yielded by research.

We speak glibly of the wonderful strides which we have made in this country in the control and eradication of disease.

We say that cholera and the plague have been banished from our shores, that tuberculosis is now under control, that diphtheria is no longer to be greatly dreaded, that typhoid fever has been practically eliminated, that tetanus can be prevented, that malaria and yellow fever are no longer the dreaded scourges of the South that they were thirty-five years ago; but we do not add, as we should, if we were to tell the whole truth, that little credit is due us for these achievements because the fundamental knowledge used in combating these diseases was made available by foreign laboratories, particularly German laboratories, in which the advantages to be gained by cooperative effort in research have long been recognized.

What is perhaps even less to our credit is that we have not profited more fully from the example set for us by these foreign laboratories in attacking the many and perplexing problems which still remain unsolved. I refer particularly to such disorders as diseases of the heart, cancer and other malignant tumors, cerebral hemorrhage, nephritis, influenza and pneumonia, tuberculosis, diabetes, cirrhosis of the liver, et cetera. All of these diseases continue to take a heavy toll in lives annually and in some cases this toll is increasing at an alarming rate. For instance, the death rate in diseases of the heart has increased, in round numbers, from 159 per 100,000 in 1920 to 276 per 100,000 in 1939; the death rate in cancer and malignant tumors from 83 per 100,000 in 1920 to 118 per 100,000 in 1939; the death rate in cerebral hemorrhage from 82 per 100,000 in 1920 to 88 per 100,000 in 1939; and the death rate in diabetes from 16 per 100,000 in 1920 to 26 per 100,000 in 1939.

Dr. Reid Hunt, Professor of Pharmacology at Harvard University Medical School, in a plea for the establishment of a national institute of health, which would provide the organization and facilities to make possible the kind of cooperation needed to attack these problems successfully, stated at a hearing before a congressional committee on May 25th, 1928: "*Never in the whole history of the world, I think, have the efforts to improve health conditions lagged so far behind the advances made in the other sciences.*"

As a matter of fact, slowness in the application of fundamental knowledge to health problems is perhaps the greatest of the disadvantages resulting from the lack of cooperation.

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As evidence in support of this contention, I cite the following examples of failure to make prompt use of important discoveries in just one of the basic sciences, namely chemistry.

The preparation of ether was described fully in 1545 and its manufacture on a commercial scale was begun in 1730, yet it was not until March 30, 1842, three centuries after its discovery, that it was first used as an anaesthetic. On that date, Dr. Long of Jefferson, Jackson County, Georgia, anaesthetized James Venable with it and removed a malignant tumor from his neck.

The lapse of time between discovery and application was also incredibly long in the case of two of the newer general anaesthetics which have come into use within the past fifteen years, namely, ethylene and acetylene. The former is now used quite extensively in this country and the latter is being used in Europe. Both of these chemicals were well known to chemists for over a hundred years before anybody got around to testing them out to see if they could be used as medicinal agents.

Amyl nitrite was discovered by a French chemist in 1844, but it was not until 1867 that Dr. Brunton discovered its value in relieving the agonizing pain of angina pectoris.

Acetanilid and its derivatives are the basis of nearly all of the commonly used remedies for headache. They were prepared by the chemist at least fifty years before it was discovered that they would relieve headache.

The chemist first prepared carbon tetrachloride, now widely used for cleaning clothes and as a fire extinguisher, more than one hundred years ago, but it was not until about fifteen years ago that one of the research workers in the Bureau of Animal Industry of the United States Department of Agriculture discovered that it was an efficient remedy for worms in animals. A short time later, it was found to be equally effective in the treatment of hookworm disease in man.

Ehrlich's ideas with respect to the remedy which he eventually perfected for the cure of syphilis were conceived by him when he was a young man in his twenties, but he had to wait for thirty years to obtain the cooperation of the chemist before he could put them to the test.

Sulfanilamide was discovered by Gilmo in 1908, but it was not until after 1935, when Domagk demonstrated its effective-

ness against a strain of haemolytic streptococci, that its value as a chemotherapeutic agent was recognized.

Examples of this kind, in which delay in the application of discovery was due primarily to the chemist working independently of the pharmaceutical manufacturer, the pharmacologist and the physician instead of with them, could be multiplied many times. The same could be done for the other basic sciences; but that would only bore you; and besides, I desire to call attention at this point by way of contrast to some of the excellent results obtained in this country through cooperation in research where this method of approach to the solution of a problem has been applied. I have already referred in a general way to the benefits derived from this method of approach in foreign countries.

For instance, take the discovery of insulin and its therapeutic properties. Both discoveries occurred almost simultaneously and were the result of the cooperative efforts of a small group of men headed by Dr. Banting and representing chemistry, physiology and medicine.

Another case in point is the successful work of the late Dr. Howland of Johns Hopkins University on the cure of rickets. Its success was due in large measure to the active participation of chemist and physician under a single leadership.

The chemist and the physician also cooperated to the benefit of suffering humanity in the preparation of the ethyl esters of the acids of chaulmoogra oil and in their application to the treatment and oftentimes cure of leprosy.

Still another example is to be found in the discovery of the cause and prevention of mottled enamel, a dental lesion endemic in certain localities. Dentists working in conjunction with industrialists found that this condition of the enamel was caused by the presence of excessive amounts of fluorides in drinking water. Now the prevention of mottled enamel is largely a matter of water-works engineering and public sanitation under the guidance of the dental profession.

That there has been undue delay in, and oftentimes complete failure to apply the fruits of discovery in the basic sciences of the health service professions, I am sure you will all agree. That these benefits might have been brought to the public more promptly had there been proper cooperation between the members of the health service professions and

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the research workers in the basic sciences, would seem to be evident from the excellent results obtained by cooperation in the several examples cited. Therefore, I contend that, what is most needed at this time to speed up research and the application of its fruits, is broader and more effective cooperation between the groups constituting the health service professions and those representing research workers in the basic sciences.

Dr. Bayliss, the renowned British physiologist, says in his *Introduction to General Physiology* (1919): "*As physiologists, our task is to refer, as far as we can, all phenomena of life to the laws of physics and chemistry.*" If this statement be accepted as a truism, then there is no undertaking, in my opinion, which holds forth greater promise of positive and far-reaching results in every branch of medicine than a united attack upon its problems by the members of the health-service professions working in cooperation with the physicist, the chemist, the physiologist, the pharmacologist, the bacteriologist and the experts in the other basic sciences.

But, cooperation as it applies to the health-service professions, if it is to be made of greatest benefit to mankind, must be continuous and intergroupal as well as broad in its scope. In other words, it must not cease with the effort in which the research worker in the basic sciences plays a leading role, but must be continued among the health groups, themselves, in the every day practice of their respective professions. At present, no two of these groups of practitioners are working together as closely as they can or should, and there is little, if any, real cooperation among the groups as a whole.

Certain present day conditions in the practice of medicine and pharmacy indicate that these two large and important groups of practitioners are not cooperating as effectively as they should in their daily practice. This has given rise to several evils, all of which are detrimental to the best interests of the public. Much too frequently, in the past, for example, pharmacists have indulged in "*counter prescribing*" and physicians in "*office dispensing*." Both of these practices are inimical to the public health and welfare, and could be abolished promptly and in their entirety, if each of these two groups of practitioners would recognize the preeminence of the other in its particular field of service and would adhere strictly to its code of ethics.

Again, there is evidence of a lack of proper cooperation among physicians and pharmacists in the dissemination of health information to the public. For example, organized pharmacy was not invited until about a year ago to take part in the program of the American Social Hygiene Association for the eradication and control of venereal diseases, even though it was well known from the beginning that those who contract these diseases usually approach the pharmacist first for information and advice on their treatment. As a result, satisfactory progress was not made in the campaign fostered by this Association and affiliated groups until after nearly five years had elapsed.

The control of Rocky Mountain fever is another of the many instances in which it would appear that the pharmacists' services as disseminators of public health information could be used to advantage. This disease, which was originally confined to the vicinity of the Great Divide, is now reported in thirty-seven states. There is no known drug of value in its treatment, and control, therefore, lies in educating the public with regard to its prevention.

In a report of a functional study made under the direction of Dr. W. W. Charters, then Dean of the Graduate School of the University of Pittsburgh, and published in 1927, there appear the following statements:

"The pharmacists are more strategically situated than any other group of individuals to give personal advice upon matters of public health on which they are informed. The information is given free of charge, and can be obtained within easy walking distance of the home."

"A well informed pharmacist is the best single individual to disseminate information about public health."

If these statements represent the considered opinion of an expert investigator, who has made a study of the services which pharmacists are prepared to render, why should physicians hesitate to take advantage of this gratuitous service which could and should be made available to the public? This applies with equal force to dentists.

It is reported that 72 per cent of our population are not receiving dental care primarily because of ignorance. If this be true, the remedy would seem to be widespread and continuous education of the public through the dissemination of information on the benefits to be derived from professional

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care of the teeth. Why has the cooperation of the pharmacist not been solicited in disseminating this information?

There is also discernible a lack of clear understanding among physicians and dentists. Dentists, I am told, feel that they are not called in consultation by physicians as frequently as they should be in cases of systemic diseases aggravated or caused by dental lesions. Physicians, on the other hand, feel that some dentists yield too frequently to the temptation to prescribe treatment for systemic diseases when called upon for dental service. Certainly, failure of these groups of practitioners to cooperate in the treatment of conditions of this kind cannot result in benefit to the public.

I shall purposely refrain from referring to any of the shortcomings of the nurses in their relation with the other health-service professions for fear that my remarks may be misinterpreted and because this group seems to be so willing to give service wherever and whenever it is needed. Just recently, I read a newspaper report of a commencement address delivered before a class of graduating nurses, in which the speaker referred to nursing as a "*high and holy mission.*" Immediately, there came to my mind Florence Nightingale and her work, and I said to myself: As envisioned by that most worthy person, nursing is indeed a high and holy mission, and, as such, the very foundation of its service is built upon cooperation.

If the conditions which I have pointed out indicate that there is need for broader and more effective cooperation among some of the groups constituting the health-service professions, there are other conditions, equally as striking, which can be cited to show that there is even greater need for cooperation among the groups as a whole.

Take for example, the current discussions regarding the "*high cost of medical care*" and the suggestions which have been made for state management of the health services as a means of reducing these costs. As I view it, these discussions and suggestions are indicative of a lack of proper cooperation among the professions comprising these services and, if disregarded, may result in the abolishment of private practice, at least in greater part. Effective cooperation of the health-service professions, on the other hand, in keeping with their avowed humanitarian purposes and in which existing economic

inequalities are recognized, would seem to offer a practical solution to the problem.

A still more striking example of lack of cooperation of these groups as a whole is to be found in the field of public health—the more striking, because it is this field which offers the greatest opportunity for cooperative effort in rendering public service. Up until the latter part of the last century, physicians were in complete control of public health work and its administration in this country. Our boards of health, national, state and local, were composed entirely of physicians, and there was no inclination on the part of the latter to include representatives of the other health-service professions in their councils, even in the face of the marked advances, educationally and otherwise, made by these professions. Fortunately, for the welfare of the nation, this attitude has changed.

As far back as 1883, Dr. M. G. Parker, representing Massachusetts said in closing a report on the progress of state medicine: *“I can do no better than to report to the chairman of the present board the advice given last year by my worthy predecessor, Professor Harry I. Bowditch, of Boston, when he said: ‘Again, I would suggest that all state boards of health have physicians as secretaries and chairman, and the majority should be physicians; and, finally, I deem it all important to have a lawyer, a man of business and a civil engineer upon every board’.”*

Today, while we perhaps recognize more fully than ever before the true significance of the medical profession to public health service, we also recognize that the field is extremely broad and complicated, and that a proper consideration of health problems requires not only the participation of the physician but the dentist, the pharmacist and other professional groups.

So generally accepted is this view now, that not only are dentists and pharmacists being appointed to membership on our boards of health, but, in many sections of the country, we find the health-service professions joining together in one group, the purpose being to maintain public health administration on a proper level and to provide guidance and leadership so essential for the proper understanding and development of public health programs.

In Indiana, for example, there has been formed the Inter-

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Professional Health Council, which comprises the professions of medicine, dentistry, pharmacy, nursing and the deans of the colleges of medicine, dentistry and pharmacy, together with the state department of health. In other sections of the country, similar organizations are being effected, which I am happy to say, augurs well for the future of cooperation in this field.

The practice of medicine, as I view it, is an art which makes use of all of the sciences and in the broad sense comprehends all branches of health service. This implies that there must be a division of labor, because no single human being can become proficient in all phases of the practice. If the practitioners who constitute the health-service professions will but recognize this conception of their status, I am certain that most of the obstacles now standing in the way of more effective cooperation will disappear.

I have brought this plea for broader and more effective cooperation among the health-service groups before you at this time, because you, who are the students of today, will become the practitioners of tomorrow, and it is to you we must look for the solution of the many and difficult problems which still confront us. I shall be disappointed if it has not stirred some measure of favorable response within you. But, even if I may not have succeeded in convincing you of its urgency at the moment, I, nevertheless, hope that, ultimately, it will have a salutary influence on your practice and that life in the future will mean much to you, that it will mean as much as it does to that well known Irish playwright and critic, George Bernard Shaw, who said:

"Life is no brief candle to me. It is a sort of splendid torch which I got hold of for the moment, and I want to make it burn as brightly as possible before handing it on to future generations."