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DENTISTRY AND MICHIGAN'S HEALTH*

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As the coordinator of the infant program in your school curriculum, the course in Public Health Dentistry, I should like to present for your consideration some of the public problems which confront dentistry in Michigan--the state in which many of you hope, faculty and State Board of Dentistry willing, some day to practice your profession.

All of this past semester, the Seniors and I have been working industriously to expose, in its total extent, the problem involved in the provision of dental care to all the children in Michigan. My third assignment to the Seniors disturbed them no end. I asked them in groups to read ten bills that were introduced in the United States Congress during the period 1944-45. All these bills, by the use of federal funds that would support a variety of programs, are intended to improve the nation's health, including its dental health. I asked the Seniors, further, whether the American Dental Association should support these pieces of health legislation and why.

I hoped that this assignment would serve as an activity to interest students in the social trends that are affecting or will affect the teaching and practice of dentistry.

I interested them, but I discouraged them. According to the "scuttle butt" that came back to me, most of the Seniors who weren't in the Navy wanted to quit dentistry then and there. They figured down in the locker room, I think, that if the people of these United States had stimulated all this fire in Congress to pass legislation that would provide health service on a broad basis, including dental health service, then the private practice of dentistry was doomed.

Three of these bills, incidentally, were introduced because of the activity of the Legislative Committee of the American Dental Association. One of them, the Hill-Burton Hospital Bill, has the blessing of the American Medical Association. But the three Social Security bills, introduced by Senator Wagner of New York and others last year (and intended to provide complete health care eventually for all), along with the one Maternal and Child Health Bill introduced by Senator Pepper of Florida to provide complete health care within ten years for every expectant mother and every child in America (and a person is a child until 21 years of age), have stimulated high

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blood pressure in, and emotional indictments from, the leaders of both professional organizations, the American Medical Association and the American Dental Association. The fact that these three bills have been introduced in Congress to provide complete health care really does not imply that the two professions are being destroyed by "Hitlerian tactics." It implies merely that a New York senator has, by due process of law, introduced legislation in Congress and that our treasured democratic process is still in action. It would seem to me that there are less emotional, more informed, and more scientific methods for a health profession to meet proposals for social change in practice than by meaningless verbal blasts in the New York Times and other newspapers.

Private and Public Health Dentistry

For a moment, let us examine the practice of dentistry. When a modern, scientific-minded dentist accepts a new patient in his office, he seats the patient in his operating chair, examines the mouth with all the diagnostic aids now available, decides a plan of treatment, institutes, during a series of appointments, the treatment that he has planned, and recalls this patient at regular intervals for a re-examination thereafter. When research provides newer and better methods or when operative failures develop or when ageing changes occur, the scientific dentist makes out another treatment plan, institutes the new treatment, and begins once more the recalls at regular intervals. Such treatment appears to be both logical and successful.

Probably, if dentistry, as now

practiced by the well-qualified private dentist, is excellent for the health of the individual private patient, the techniques which are employed privately should be equally excellent to assure the public's health. It may be profitable to spend another moment in an attempt to apply the techniques of private practice to the solution of Michigan's dental public health problem.

The first step, obviously, is to examine the patient. As a public health procedure, the examination becomes a survey of the state to determine the essential data for dental program planning. These basic data of the community patient classify themselves into at least seven areas of information. We shall want to know:

1. The necessary population facts--the number of people and their distribution by race, by age groups, by geographic regions.
2. The regional economic conditions as they affect needs and demands for dental care.
3. Exactly those dental services which are essential for health, a definition of, or a standard for, the public's health needs in dental care.
4. The determination of the average operative time required to provide each specific health service.
5. The dentists available and the dentists required to provide these needed dental services.
6. The average productivity of the dentist--the dentist's ability to complete patients' care per average work year, the average income that

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should be cleared by him; and perhaps we shall have to study the aids that are available, such as equipment, assistants, hygienists, and laboratory technicians, to improve this average dentist's productivity.

7. We may have to learn something about the psychologic blocks which interfere with the provision of adequate dental care--why people do not accept dental care when it is made available.

These seven groups of data should result from our examination of the state as a dental patient.

The second step in private practice, you will recall, is the thorough study of the patient's examination, his health history, bite-wing radiograms, casts, and Lactobacillus counts, and then the development of a treatment plan. Similarly, the basic data accumulated by the public health survey are analyzed and a program planned by the public health agency.

After a period of months, the patient is recalled and the mouth re-examined. After a period of years, usually, certain specialized surveys again are made of the condition of the public and an evaluation completed of the public health program. Operative failures, ageing changes, or obsolescence of materials lead to a new treatment plan in private practice. The program failures revealed by the evaluation stimulate a new program in public health practice. Thus, as you see, a well qualified and scientific director of a state dental program can adapt to communities of patients the techniques which the scientific private dentist applies to an individual

patient in the office. Essentially, the state director's entire approach to his task of program planning and administration becomes a problem solving experience.

Michigan's Dental Health Status

The public health technique which I have just presented to you is by no means new. It is utilized by this faculty to teach you the management of clinical problems, it is being used more and more by educators in this state to teach people health attitudes and health practices, and it is the technique that is being taught to public health administrators by Dr. Nathan Sinai in our campus neighbor, the School of Public Health. As Dr. Sinai has pointed out repeatedly to the health professions,¹ there is little doubt that the question of provision of health services for the population of this country is in a confused state and that the most weighty single cause of the confusion is the violation of the sequence of steps which I have just described--examination, diagnosis, treatment, prognosis--the steps so familiar to all of you who have begun your clinical practices.

Unless I am confused myself and have learned nothing from my experience with the Council on Dental Health of the American Dental Association and from the dental literature which I follow most carefully, one can note all over the country a tendency to consider, discuss, and debate treatments that are called "plans." A clear statement of what the plans or adopted principles or policies are expected to cure, is rare. Plans are based upon vague diagnosis which, in turn, are based on superficial examinations--very

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superficial examinations, often mere emotional reactions.

And now, for you who in the early future will be entrusted with the consummation of optimal dental health in Michigan, it may be stimulating to spend a few more moments in an examination of Michigan's public dental status. What has been accomplished by our state agencies to improve the quality and the extent of our dental health? What will you find when you take these last three hurdles in a Senior dental student's experience, the faculty, the regents, and State Board of Dentistry?

In the year 1944-45, the Children's Fund of Michigan, a private foundation created by the beneficence of the late Senator Couzens, spent \$121,805 on its dental program, primarily in the economically retarded areas of the state. I doubt most thoroughly that the director would care to assume that his organization has achieved optimal health for the children in the areas where it operates.

In seven counties of southwestern Michigan, the W. K. Kellogg Foundation has set up a test situation to find out whether optimal health, including dental health, can be secured for children by education of the health professions, the patients, and the community groups that take care of dental needs, providing monetary aid is granted to the local county health departments. It is reported that, in 1944, \$19,920 were spent for dental health by these seven county health departments. I feel sure that the directors of this Foundation would be the first to agree that the dental program never has attained optimal oral health for

children.

In cooperation with the Flint school system, the Mott Foundation maintains dental services for the children of low-income families through a staff of two dentists, one assistant, and the part-time aid of two health educators and one clerk. In 1944, it spent \$16,500 for dental health, and the director, I know, is still seeking a pattern which in the future will assure optimum oral health for Flint children.

One may ask next, quite legitimately, "What has the state of Michigan accomplished through its Bureau of Public Health Dentistry?" Its past record of principal emphasis is an attempt to educate people to go to the dentist and an attempt to teach dentists to practice dentistry for children. I doubt that its director and his staff would wish to claim that optimal oral health has resulted. Its recent activities should be reviewed for you, since eventually you probably will be working with this Bureau to provide a more extensive dental program in Michigan.

Record of Bureau of P.H. Dentistry

Recently, and only recently, the Bureau has inaugurated a diagnostic and a research project and has begun a problem solving approach to the solution of the state's dental problem. It has begun to accumulate the essential basic data for planning a scientific statewide program, if and when funds and dentist cooperation are available. Previous surveys in Michigan and in other states have indicated that dental caries attacks the teeth in approximately half of the mouths of two- to three-year-old

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children and continues in some degree in a large percentage of people throughout life, or until the loss of natural teeth.^{2,3,4} Such data on dental caries attack rates, although revealing the wide scope of the caries problem, do not provide the exact data on oral health needs and facilities that one requires for scientific planning.

Preliminary to any health survey that is to assess accurately the state's health needs, it appears sensible to have an exact determination regarding oral health needs. It appears particularly appropriate that the dentists in Michigan should define the exact services--the prophylaxes, radiograms, extractions, root surgery, restorations, orthodontic treatment--which contribute to, and are essential for, optimal dental health.

The basis of the Bureau's definition of dental health services began to develop about three years ago in a survey of the opinions of the teachers of Dentistry for Children in the 44 dental schools of the United States and Canada.⁵ Considering developing jaws and teeth, these teachers were asked, "What dental services should be included in a public health program to assure the health of the child patient?"

A similar survey was conducted, in 1943, of the Michigan practitioners of dentistry for children by the Subcommittee on Prepayment Programs for Children of the Council on Health and Education of the Michigan State Dental Society.⁶ Utilizing these two studies and the advice of faculty members of the School of Dentistry of the University of Michigan, the services to be included in a children's dental health program

have been delimited. For the first time, probably, the orthodontic services which should be included in a dental health program have been defined and an examination code has been prepared to classify the occlusion examination in terms of treatment.

With a definition available of the dental services required to assure healthy graduates from Michigan's high schools each year, a survey was begun to determine the need for these Michigan-defined services among the state's children. In five different areas of Michigan, 7,375 children now have been examined carefully and uniformly. The results of this detailed examination have been transferred to punch cards and some of this information now is available in the form of tables of dental needs.

The definition of dental health services, once established, leads to another step in the problem solving approach to Michigan's dental health care--the determination of the average operative time to provide these carefully defined services. Again, a preliminary step was essential to such a public health laboratory study. Members of the staff of the School of Dentistry assisted the staff members of the Bureau of Public Health Dentistry to reach a decision regarding the small mechanical details of diagnostic and operative procedures that would provide adequate dental care for the age groups involved. Standards were established to manage conditions resulting from inherited growth patterns, from the trauma of accidents, and from accumulated neglect, and standards were adopted to manage a program of periodic maintenance so that neglect never would result.

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Clinic Programs

A fact-finding clinic next was established at Sturgis, with the approval of the Executive Council of the Michigan State Dental Society and with the approval and active cooperation of the local dentists. Its clinician now provides diagnostic and operative services for all the children in the three lower grades who wish to go to the clinic.

Each year he will add another entering grade of children to the group already receiving care and continue with an ever enlarging group receiving continuously regular care until he gets them into high school. Once children's neglected mouths are rehabilitated in this experimental program, the future study will consist of the accumulation of data on the time required to meet the yearly maintenance care in a well conducted program. Orthodontic services are about to be included to make the time study encompass a complete oral health program.

Since the time studies in the Sturgis clinic will require confirmation, using other localities and other operators, a similar clinic has been established recently at St. Joseph. These clinics will provide unusual opportunities to study additional problems, such as the number of children in a community that will accept free dental care or the efficacy of dental health education techniques to change children's health habits or reduce dental caries attack rates.

From the limited data now available in Michigan, one already can speculate a bit with scientific program planning for the future. One is in position now to synthesize the

statistically non-existent, "average" patient. One can say, for example, with some degree of accuracy, that the "average" five-year-old child's accumulated dental demands in Michigan are care for 4.6 cavities, 0.3 extraction, 0.27 malocclusion requiring treatment, 0.001 of an operated cleft palate to observe, 2.0 prophylaxes and examinations for the year, and one set of posterior bitewing radiograms during the year.

To become better equipped to plan state programs than the crystal gazer, one has only to add some further data. One will be required to ascertain the average needs of the elementary school pupil and the junior and senior high school student as he did for his preschool patient. He then will want to know the "average" operating time required to provide these "average" services at the different age levels. Still some data are missing. In addition, one will require a census of the available dental personnel (the children's dentists, or those who possibly could be made into children's dentists, and the orthodontists, the exodontists, the hygienists, and the technicians). The "average" operator's productivity (the hours he works in an "average" work-year) and the amount of income that is just and adequate for the "average" well-prepared, scientific Michigan dentist will have to be determined.

Costs and Probable Health Gains

Accepting what appears to be a generous hourly rate of pay, considering all published "average" dentist incomes for the North Central group of states, and basing the average operating time on the Seniors' survey

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of those Michigan dentists who have proved their ability to operate successfully on children in private practice, one is in position to calculate the funds and the operators required to provide defined adequate care for Michigan's 1,275,000 children (in round numbers, as of the 1940 Census) from 3 through 17 years of age. If an adequate dental health program were instituted this year for all these patients, and all their accumulated defects were corrected this year and all their mal-occlusions placed on a corrective program, the total program would cost \$44,327,500.

For contrast, one may compare this sum with Michigan's present budget for all public health services, which totalled \$15,276,177 for the year ending June 30, 1945.⁸ Of this budget, \$13,192,836 were the funds of the State Tuberculosis Subsidy, the Rapid Treatment Center at the University of Michigan, and the various county and city health departments. The actual bureau budgets of the State Health Department totalled, therefore, but \$2,083,341, and of that sum the Bureau of Public Health Dentistry received 1.7 per cent, or \$36,190, to carry on a dental program for Michigan's 5,256,106 people (1940 Census).

If, however, the children's dental program were to be instituted gradually over a 15-year period, beginning with the state's 85,000 three-year-olds (1940 Census) this year and adding a new three-year-old group each year for 15 years, in 1951 all children from three years old through high school would be receiving maintenance care. The cost would be reduced 34 per cent. No accumulation of defects would have resulted in any Michigan child after

three years of age, and at the end of the 15-year period all 17-year-olds should be graduated from high school in optimal oral health. The total expenditure for this program would be \$29,155,000 as compared with the \$44,327,500 required for the one-year program to remove the accumulated dental defects of all children at once.

Ruling from consideration the Michigan dentists beyond 65 years of age, the specialists who would not be available for a children's program, the dental teachers, the researchers, and the industrial and institutional dentists, Michigan would require 1,743 more dentists, a 61-per-cent increase in the dentists now available, to start this program of care for its accumulated children's needs. Ruling out the same group of dentists and instituting the gradually applied 15-year program to provide care for its children's incremental dental needs, Michigan would have exactly eight dentists left over at the 15th year to provide general dental care for the rest of the population of the state.

To bring these astronomical figures with which I have been dealing down to my own level of comprehension, I should like to indulge in one more bit of crystal gazing. Just suppose that this children's incremental dental care program in Michigan were to be financed by a weekly payroll deduction from the pay of Michigan's 2,125,000 workers (1940 Census), the weekly payroll deduction throughout the next 15-year period, estimating an average 48-week work year, would be 14 cents. That is as far as I intend to go with pure speculation.

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Need for Adaptation

At this point, many of you probably are wondering why I have spent this period in dental program crystal gazing. Let me, please, remind you that I have high hopes in the future for the dental leadership which you people are going to provide. I think that many of the Seniors realize now that the conversion of a pioneer economy in these United States to an industrial or machine economy has initiated many social changes and stimulated a demand for many more, including a widespread provision of good health care. Probably one of the harshest biologic laws of nature is still operating--there is no surer road to extermination for the human species than failure to adapt to a changing environment. If 140 million people really demand a broad distribution of good dental care, 70,000 dentists can offer only futile resistance to the social changes which appear due in the next few decades. But, 70,000 scientific, informed, and cooperative dentists could do much to direct the changes which will affect the practice of dentistry.

I hope most fervently, therefore, that you people will assume your future professional assignment with sincerity, that you will inform yourselves thoroughly, that you will make yourselves vocal, and that you will meet all attempts that would deteriorate dental practice, for yourselves or for the public, with hard, cold facts, not with uninformed emotional pronouncements. Some of you have been frightened by the terms "socialized medicine" and "state medicine"; you are worried about the implications of "socialized dentistry" and "state

dentistry." It takes a brave soul to attempt to define either term, but someone will have to do so if all of us are to react intelligently to the discussion of the legislation now pending before Congress.

If one were to accept as a definition of state medicine "any system in which the personnel is employed, the facilities are owned, and the program is controlled and administered by government," then the Russian health program is state medicine, but so is the early program of the Veterans Administration in this country, and so are the Sturgis and St. Joseph clinics. If the dental programs of two of our large Foundations were operated by the state of Michigan instead of by private organizations, they too would have to be classified as state dentistry.

At the same time, if one were to accept as a definition of socialized medicine--a statement whose accuracy is debatable--"the assumption of any health function by the members of a group (public and profession) as a mutual health responsibility," then he would have to declare that the Michigan State Medical Society's hospital care program is socialized medicine.

As a summarizing charge to you, I beg you to define your terms, become vocal in your dental society when the time comes, and meet all attempts to change dental practice by revolution instead of evolution (whether they be efforts of social reform groups, leagues of voters, labor groups, or others) with unemotional scientific data and logic--but do not fail to meet them.

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A PILOT WORKSHOP IN DENTAL HEALTH PLANNING

Dr. Allen O. Gruebbel announces that preliminary plans have been completed for a three-day conference on dental health planning to be held in Columbus, Ohio, under the joint sponsorship of the Council on Dental Health of the Ohio State Dental Society and the A.D.A. Council on Dental Health. December 6, 7, and 8 have been selected as tentative dates for the conference.

Two of the chief aims of the conference will be to adopt basic policies for expanding dental health programs in Ohio and to test the feasibility of applying the workshop idea to dental health planning. The experience gained in the pilot workshop, it is believed, will permit the adoption of a study plan which can be used in other state dental societies.
