



The Pedodontic Clinic at the University of Washington.

A Program of Pedodontic Education

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Increased emphasis on pedodontic training in the undergraduate dental curriculum has accompanied the growing realization of the importance of dental service for the child. The dental graduate of today can not be expected to assume his responsibilities in children's dentistry and prevention unless he has had a thorough indoctrination in these subjects in his clinical and pre-clinical years. The orthodontist in particular is acutely aware of the need for a higher standard of restorative service for the child patient who frequently is in need of extensive operative rehabilitation before treatment can be started.

The aim of a Department of Pedodontics should be to prepare men and women in the technical skill, attitudes, and knowledge necessary to render a complete dental health service for the child. Specific techniques must be taught to accomplish certain ends and basic underlying biological principles should be stressed. The student should be well grounded in these fundamentals so that he can evaluate new technical advances throughout his professional life with a keen scientific attitude. To accomplish this objective in undergraduate dental education, it is necessary to provide more training than just a few lectures in the Senior year plus a limited amount of clinical exercise.

Ideally, the undergraduate course in Pedodontics should begin in the freshman year when the student could at least observe cases which he might expect to follow in terms of growth and development in the four ensuing years. Although we have not attained this ideal as yet at our institution, there is

a continued course of instruction in Pedodontics throughout the second, third and fourth years.

In the sophomore year there is one quarter of lecture devoted to the etiology and control of caries. This course is intended to give the student a broad understanding of the facts as best understood at the present time concerning the caries process. The course is given by the department of Pedodontics and emphasizes the importance of prevention in controlling this disease in childhood.

In the winter quarter of the second year, the student receives ten lectures on growth and development. This course is given by members of the Department of Orthodontics. Concurrently in the winter quarter is given a laboratory course in Pedodontic techniques. The course meets once weekly for four hours. Exercises in cavity preparation in primary teeth are first carried out. This is then followed by the construction of a basic type of space maintainer upon an articulated model. The final project in this course is an exercise on the technique of restoring a fractured young permanent anterior tooth. In this course an illustrated laboratory manual is available for each student plus demonstration models and visual aids. Selected clinical cases which illustrate the principles being taught in the laboratory are brought in for inspection by the class at various times throughout the quarter.

The laboratory exercises in the sophomore year are augmented by another technique course in the junior year, given by the Department of Orthodontics, in which the construc-

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tion of simple passive appliances using bands and lingual arch wires is taught, as well as bite planes and bite plates.

Every effort is made to have an adequate teaching staff so that students progress rapidly in the laboratory courses. At the present time the ratio is one instructor per fifteen students. The intent is not to do the work for the student, but rather to speed up natural progress by avoiding time usually lost in waiting for steps to be checked.

In the junior year, the student begins his clinical training in the general clinic but is not assigned to the Pedodontic clinic until he has had one quarter of general clinical practice. However, in the autumn quarter ten lectures on clinical pedodontics are given. This lecture program is continued on the same basis in the winter quarter.

The block assignment system is employed in this institution in the clinical teaching of Pedodontics, Oral Surgery, Diagnosis, and Radiodontics. The junior student, for example, spends twelve working days in the Pedodontic clinic. This is accomplished by assigning approximately six men at a time on a schedule that is so arranged so that it will not conflict with the other clinics.

The senior student is assigned to the Pedodontic clinic for twenty working days and groups are assigned beginning in the fall quarter of the Senior year. At the University of Washington, a separate Pedodontic Clinic is maintained. This clinic has fifteen Junior type chairs, units, and cabinets, furnished in an attractive coral shade. In addition, there is one room completely equipped, which can be used as an examination and diagnostic room, as an emergency room or as a place in which to isolate the obstreperous child. The department has its own x-ray equipment which is available for such purposes as periodic check-ups on

teeth which have undergone pulp therapy, for emergency cases, or for special research problems. Also part of the department is a fully equipped laboratory with casting and investing equipment, plaster bins, lathes, and engines. The purpose of this laboratory is to permit close supervision of technical steps in the construction of appliances for the child patient. Also in conjunction with the Pedodontic clinic is a separate research and record room intended for the use of graduate students or special departmental problems. In close proximity to the Pedodontic and Orthodontic clinics there is an attractively furnished reception room intended to appeal to the child. A small dispensary which supplies both clinics is conveniently located in an area accessible to students. The Pedodontic and Orthodontic clinics are situated in close conjunction for the purpose of cooperation and team work in studying problems of mutual interest.

The block assignment system in Pedodontics has certain advantages over the free clinic type of program and it has certain disadvantages. In the block assignment system that is practiced in this institution, patients are arranged in advance for the initial period of each block of students. From then on the student arranges his own appointment schedule. By care in the original selection of the patients, which is a function of the department, it has been found possible to give each student a broader clinical experience than is usually the case where the student is responsible for his own patients.

Each completes a program of diagnosis and treatment planning, utilizing full mouth and bite-wing radiographs which accompany the examination folder. Patients are accepted only for complete mouth rehabilitation and treatment planning is based on this principle. It has been found possible for each student to manage several

cases involving vital pulp therapy during his assignment to the Pedodontic clinic. Allocation of cases involving operations other than routine restorative dentistry is based on student interest and capabilities. In general, the senior student is assigned those cases involving appliance construction, because of the longer time period available. A large number of cases are referred directly by the Department of Orthodontics for the specific purpose of correcting an anterior crossbite, holding space until treatment can be started, or other similar procedures. These are the only patients, however, which are accepted for specific operations, all other being required to undergo complete treatment.

Use of the rubber dam in operative procedures is recognized as essential for superior restorative dentistry. Its advantages for the student operator are many — freedom from saliva, a clear operating field, and better patient control. Unfortunately most rubber dam techniques have been designed to meet the needs of the adult dentition. Clamps, especially, have not been made suitable for the primary teeth. Discouragement in rubber dam application on children has resulted in its abandonment in many teaching institutions. At the University of Washington especial attention has been devoted to developing a workable rubber dam technique for the child patient. It has been found possible to utilize effectively the rubber dam in most operative procedures with a minimum of discomfort to the child. Local anesthesia is not routinely used, and yet with careful selection of the clamps, and special attention to the rubber dam holder, it is entirely practical to use the dam on the majority of cases.

Another policy which has been followed in the conduct of the Pedodontic clinic has been that of holding a seminar at the end of each block assign-

ment period. The purpose of this seminar is to integrate some of the thinking of the students on common problems encountered in providing a dental health service for the child. Slides, models, and case histories are used to make this period an effective educational exercise and to kindle enthusiasm for further study.

The block assignment system is not without some disadvantages. While it permits a close uninterrupted check upon individual student progress it is necessarily restricted to only one period during the year, and the student is out of contact with child patients for the balance of the time. In most instances students are unable to carry a given case through to completion, a serious handicap from the teaching standpoint.

On the other hand, the individual under the block assignment system probably comes into contact with a greater variety of cases than he otherwise would and has the opportunity to see the results of work done by preceding students. He may examine and diagnose several patients, carry on operations on others which have already been started, and see the completion of some which have been coming to the clinic for an extended period. Since all amalgam restorations must be finished a situation frequently arises where one student must complete work performed by his predecessor. This is never entirely satisfactory, and remains one of the disadvantages of the block type system.

In order to teach clinical dentistry effectively, an adequate instructional staff must be available. An advantage of the block system lies in the fact that the number of students present in the clinic at any one time is pre-determined and known in advance. Consequently the instructor-student ratio is easier to control and maintain at the proper level. No more than six or seven under-

graduate students should be assigned to a clinical instructor in Pedodontics at one time, if good teaching is to be carried out. Occasionally a difficult case in a children's clinic will require the uninterrupted attention of an experienced teacher for fifteen or twenty minutes during which time no other work can be checked and other operations in progress must wait unless other instructors are available.

Evaluation of student accomplishment in operations at the chair has been recognized as an important objective of clinical instruction. In the Pedodontic clinic a grading system has been followed recognizing three levels of student proficiency — superior, average, and unsatisfactory. Each instructor has a card with blank spaces in which he places the student's number according to the grade received in cavity preparation, finish, wax up, diagnosis, or whatever the operation may be. These grades are entered at the end of each day in a master record book, along with a report of actual work performed. With this system each student's progress can be readily ascertained both as to quality and quantity.

A program in Pedodontics cannot end with the undergraduate; it must further be amplified and broadened through graduate and postgraduate courses, planned to meet the needs of those intending to practice or teach the specialty.

To meet the needs of the general practitioner one week refresher courses have been held in the early summer of each year. These courses have been planned for a time when the undergraduate clinic is not in session and the staff can be free to devote all its effort to an intensive week's program. By combining clinical and didactic work a stimulating and instructive course can be managed in a week's time. This venture has had the financial support of the Department of

Health of the State of Washington for the last two years.

The objectives of the graduate course in Pedodontics are to prepare students to think independently, to evaluate critically their own services and the literature, and further to develop their clinical operative skills to a level which will permit the successful practice of their specialty. Consideration is given to the requirements of the American Board of Pedodontics in planning the course. The graduate program in Pedodontics at the University of Washington has been planned to provide either a Master's degree, or a certificate, depending on the course selected. The content and period of residency is the same for both courses, except that the candidate for the Master's degree must complete a satisfactory thesis study. The program is arranged on the basis of a requirement of a minimum of five quarters of residency, with all courses under the discipline of the Graduate School. The following courses are required for a Master of Science degree in Pedodontics: Public Health Dentistry, Physical Growth of the Well Child, Applied Dental Nutrition, Pedodontic Seminar, Clinical Pedodontics, Dental Caries Control, Psychological Development of the Child, Applied Osteology and Myology of Head and Neck, Roentgenographic Cephalometry, Growth and Development Seminar, Orthodontic Seminar, Advanced Oral Histology and Embryology, Oral Pathology, and a Thesis. Electives may be selected from an approved list which includes such subjects as Anatomy, Anthropology, Biostatistics, Child Development, Education, Microbiology, Nutrition, Physiology, Psychology, Public Health and Speech.

Clinical work of the graduate student in the Pedodontic clinic is further augmented by weekly assignments to the Child Health Center of the Uni-

versity of Washington. The Child Health Center is a Well Baby Clinic, which provides a complete comprehensive health service for the infant and child. Under one roof is a Pediatrician, Pediatric Nurse, Psychologist, Psychiatrist, Nutritionist, Social Service Worker; and a dental service consisting of a Pedodontist, Dental Hygienist and Assistant. This center, with its biweekly case conferences, provides a unique opportunity for the graduate student to gain an insight into the possibilities of complete health service for the child. Working with the regular pedodontist assigned to the Center, the graduate student is free, not only to perform operative dental service, but also to see how the dental service can complement the other services being rendered to the child. The Center naturally provides a reservoir of research data for thesis problems.

The graduate student in Pedodontics will also have an opportunity to participate in the dental program for cleft palate children conducted jointly by the Departments of Orthodontics, Pedodontics and the Children's Orthopedic Hospital. Complete dental treatment for cleft palate children, because of its complexity, requires the services of specialists in the various fields of dentistry. An adequate program of dental care for the cleft palate child

would require the services of an Orthodontist, Pedodontist and a Prosthodontist. These services, to be completely effective, must be coordinated with the efforts of the surgeons who are caring for these children. The graduate student in Pedodontics will not only have an opportunity to participate to some extent in this program, but he may, if he desires, assume the responsibility of a Pedodontic intern after he has finished his graduate work and assume full responsibility in cleft palate rehabilitation.

In conclusion, it might be stated that the old concept of Pedodontics as simply adult dentistry "scaled down" has gradually given way to a realization that adequate dental health service for the child requires special understanding of the emotional basis of child behavior, special operative procedures, special pulp therapy, special appliances, plus a special understanding of the socioeconomic implications inherent in the study of dental disease in the child patient. With the emergence of Pedodontics as a recognized specialty in its own right the opportunities in the future for the aspiring teacher, practitioner, or research worker are especially promising.

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