



1994

The Education of Dental Assistants and Dental Hygienists at Loyola University, Chicago and Northwestern University, 1970-1990: A History

Marie Anne Macaluso
Loyola University Chicago

Follow this and additional works at: https://ecommons.luc.edu/luc_diss



Part of the [Education Commons](#)

Recommended Citation

Macaluso, Marie Anne, "The Education of Dental Assistants and Dental Hygienists at Loyola University, Chicago and Northwestern University, 1970-1990: A History" (1994). *Dissertations*. 3471.
https://ecommons.luc.edu/luc_diss/3471

This Dissertation is brought to you for free and open access by the Theses and Dissertations at Loyola eCommons. It has been accepted for inclusion in Dissertations by an authorized administrator of Loyola eCommons. For more information, please contact ecommons@luc.edu.



This work is licensed under a [Creative Commons Attribution-NonCommercial-No Derivative Works 3.0 License](#).
Copyright © 1994 Marie Anne Macaluso

LOYOLA UNIVERSITY CHICAGO

THE EDUCATION OF DENTAL ASSISTANTS AND DENTAL HYGIENISTS
AT LOYOLA UNIVERSITY, CHICAGO AND NORTHWESTERN UNIVERSITY.

1970-1990: A HISTORY

A DISSERTATION SUBMITTED TO THE FACULTY OF THE GRADUATE
SCHOOL OF LOYOLA UNIVERSITY OF CHICAGO IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY

BY

MARIE ANNE MACALUSO

CHICAGO, ILLINOIS

MAY 1994

Copyright by Marie A. Macaluso, 1994
All rights reserved.

ACKNOWLEDGEMENTS

I wish to give special acknowledgement to the members of my committee as well as other faculty at Loyola who made this study possible: Dr. Gerald Gutek, my advisor and mentor in history; Dr. Steven Miller and Dr. Marcel Fredericks in the fields of education and Sociology. Dr. Joan Smith, Father Walter Krolikowski, S. J., Father Michael Perko, S. J., Dr. John Wozniak and Dr. Kay Smith were all a continuous source of support in the program.

Dr. Aidan Stevens, Dean of Loyola's Dental School provided full access to all historical documentation with the able assistance of Brother Michael Grace, S. J. Archivist at Cudahy Library and Dr. Yolande Wersching, reference librarian/Bibliographer at the Water Tower Library. I wish to thank Susan Sauer, director of hygiene and former director, Janice Keating for their interviews.

Dr. Norman Olson, Dean of Northwestern's Dental School and Mary Kreinbring, reference librarian at the Dental School, were especially helpful in granting full access to all material for this study. Special thanks to Dr. Juliann Bluit, Associate Dean and Dr. Karen Solt, former director of

dental hygiene for their interviews. I am especially indebted to the American Dental Association, the American Dental Assistants Association, the American Dental Hygienists' Association and Mr. Richard Hengl, director of the Dental Assistant National Board for access to all documents necessary for this study.

My deepest appreciation is extended to my family for their support and understanding during my entire graduate program. My husband, Alfred and brother Stephen (late) Mele and sister Joanne Mele, all dentists, encouraged my interest in the field of dentistry. My daughter, Andrea and son Alfred II were always there to offer encouragement. My mother, Josephine Mele and father (late) Andrew Mele provided the educational atmosphere and financial support that made my dream a reality.

I am especially grateful to my fellow classmates, and a dedicated faculty for making my years at Loyola memorable.

TABLE OF CONTENTS

ACKNOWLEDGMENTS iii

Chapter

I. INTRODUCTION 1

 Definition of Terms 8

 Identification of Institutions:
 Focus on the Dental Perspective
 Loyola University 14

 Identification of Institutions:
 Focus on the Dental Perspective
 Northwestern University 22

II. HISTORICAL LINKAGE OF DENTAL AUXILIARIES
TO THE DENTAL PROFESSION 28

III. LOYOLA UNIVERSITY CHICAGO 72

 History 72

 Programs, Curricula, Teachers,
 Students, and Sub-Culture of the
 Dental Profession 78

IV. NORTHWESTERN UNIVERSITY 100

 History 100

 Programs, Curricula, Teachers,
 Students, and Sub-Culture of the
 Dental Profession 111

V. COMPARISONS AND CONTRASTS BETWEEN LOYOLA
AND NORTHWESTERN UNIVERSITY: A HISTORICAL
PERSPECTIVE 129

VI. CONTINUING ISSUES, SUMMARY, AND
CONCLUSIONS 144

Appendix

 A. Definition of Terms 164

 B. Chronology of Significant Events 169

BIBLIOGRAPHY 172

VITA 184

CHAPTER I

INTRODUCTION

The focus of this dissertation is the history of educational programs for dental assistants and dental hygienists at Loyola University and Northwestern University in the Chicago area from 1970 through 1990. The first chapter identifies commonly used terms in the study. The evolution of dental education, as well as dental auxiliary education, is examined at each university in historical perspective, from the origins of the field to the 1990s.

Dentistry is the science of preventing, diagnosing, and treating disease, injuries, and malformations of the teeth, jaws, and mouth. A dentist along with his/her auxiliary personnel constructs and replaces lost teeth with restorations necessary for normal functioning in the oral cavity.¹ For the purpose of this study, auxiliary personnel refers to the Dental Hygienist and Dental Assistant exclusively.

Dental assistants are individuals who have received informal or formal training in the procedures associated with dental treatment provided by the dentist. Dental hygienists receive formal training in scaling and polishing of the teeth

¹Thomas J. Zwemer, Boucher's Clinical Dental Terminology (Missouri: Mosby-Year Book, Inc., 1993), 81.

and work under the direct supervision of the dentist. Both groups are known as dental auxiliaries, as well as dental health educators.

In the early ancient Egyptian Period of 3000 B.C., dentists received no formal training. Physicians and dentists, alike, were trained tutorially through preceptorships. This was an arrangement between the teacher and the student or preceptor and apprentice. It was an educational method that paved the way for those practicing dentistry in the future. The amount of time spent, the fee, and potential of the student were determined by the teacher. Teeth that were decayed or infected were extracted with an instrument called a turnkey. Files were used to scrape and remove decay from the teeth. Artificial teeth were fashioned from bone and ivory.² These crude methods were precursors of training that would come in the future.

While dental education began to develop in the sixteenth and seventeenth centuries there was little documentation in book form until 1728. Dr. Pierre Fauchard, a Parisian dentist, wrote a two-volume work titled LE CHIRURGIEN-DENTISTE. These books laid the foundation for dental education all over the world.³ They covered many

²Robert J. Bruckner, et al., "Dental Preceptorships of the 19th Century: What Were They Like?" Bulletin of the History of Dentistry, vol. 36, no. 1 (April 1988): 12-13.

³John E. Gurley, The Evaluation of Dental Education. American College of Dentists (Missouri: Ovid Bell Press, Inc., 1960), 7.

phases of dentistry and were the foremost resource used for approximately 100 years. Fauchard pioneered treatment for orthodontic work and surgical techniques for pyorrhea. His techniques have simply been improved upon over the years.⁴

The establishment of the Baltimore College of Dental Surgery in 1840 brought about the first dental curriculum in the United States. The sixteen week program covered Anatomy, Pathology, Physiology, Therapeutics and Clinical Instruction, including Surgery. The first faculty consisted of two dentists and two physician surgeons.⁵ Upon completion of coursework, the Doctor of Dental Surgery Degree was granted. In 1863, Harvard University granted the Degree of Dental Medicine to its dental students. Dental education had raised its standards since the time of preceptorship practices. By the 1870s, dental schools required a minimum of two years of coursework. The three-year curriculum soon developed in well-established university schools. University affiliated dental schools adopted the three-year curriculum by 1891, but it was criticized for the content of its courses.⁶ Gradually, dentistry began to raise its standards throughout the United States as more schools were established. Cities,

⁴Shailer Peterson, editor. The Dentist and his Assistant (Missouri: The C.V. Mosby Company, 1972), 5.

⁵William F. Vann, Jr., "Evolution of the Dental School Curriculum-Influences and Determinants." Journal of Dental Education, vol. 42, no. 2 (1978): 66.

⁶Ibid., 67.

like Chicago, were beginning to focus on the need for quality oral health care in addition to medical treatment for patients.

In order for much needed improvement in dental education, several events happened. The formation of the National Association of Dental Faculties helped promote and influence dental curriculums. By 1899, five years after its inception, the Association provided stringent requirements through a three-year dental program of not less than six-months per year. It changed the coursework and tailored it toward oral techniques rather than the earlier mechanical dental techniques.⁷

Other strong influencers were The Flexner Report of 1910 and The Gies Report of 1926. The Flexner Report, sponsored by the Carnegie Foundation, recommended that the medical school curriculum be improved through a more scientific curriculum. The Flexner Report soon became the authority for many curricular evaluations.⁸ The GIES Report evaluated dental education and recommended two years of pre-dental college coursework toward entry into a three-year dental school curriculum.

The Loyola and Northwestern dental programs have been chosen for this study because both schools developed well-defined university affiliated curriculums that included

⁷Ibid., 67.

⁸Ibid., 68.

dental auxiliary programs. In both schools, dental students were trained simultaneously with dental assistants. Dental hygienists worked in conjunction with dental students, providing preliminary care to all clinic patients.

Historically, progress was slow in dental education. In Chicago, the Chicago Dental Infirmary, founded on February 20, 1883, would become affiliated with Loyola University in December, 1923. Loyola University School of Dentistry had the historical distinction of being the oldest dental school in Illinois. In 1887, the Dental Department of Northwestern University was founded as University Dental College. It became Northwestern University Dental School in 1891.

As educational programs were initiated at Loyola and Northwestern University Dental Schools, a need for formal training of dental hygienists and dental assistants arose. Progress in dentistry necessitated the assistance of auxiliaries to educate patients in preventive oral hygiene. The high-speed drill required an assistant at the dental chair at all times. The concept of four-handed dentistry evolved from these technological changes. This concept provided four hands working in the mouth at one time as the dentist and dental assistant performed various dental procedures on the patient. The advent of dental insurance in the 1950s made modern dentistry available to the greatest number of patients ever. These patients had been educated in oral health practices by the new dental team--dentist,

hygienist, and assistant--working together to provide quality dental care.

The years 1970 through 1990 are especially significant due to the progress made and opportunities available through formal educational programs in university dental schools like Loyola and Northwestern. Both universities possessed a formal curriculum for the training of dental hygienists and/or dental assistants. The advantage of both programs revolves around the fact that the dental student was trained to work harmoniously, as a team member with auxiliaries for the benefit of all patients.

Historically, from the beginning of the Renaissance up to the present time, human beings have strived to learn and improve medical and dental techniques that will enhance their lives.⁹ Currently, Americans are living longer and will require extended dental treatment in order to preserve their health. The dental patients of the 1980s and 1990s have expanded their concepts of health awareness and now readily accept the role of the dental auxiliary.

The dental auxiliaries educational roles have become invaluable in a nation that places great emphasis on esthetics and youth. When dental prevention, through education by assistants and hygienists, takes place early in

⁹M. D. K. Bremner, The Story of Dentistry (New York: Dental Items of Interest Publishing Co., 1946), 77.

the patient's life, it can become a lifetime process which enhances longevity and wellness.

This study examines the specialized education and training given to dental assistants and dental hygienists at Loyola University and Northwestern University Dental Schools. Admission requirements, programs, curricula, faculty, and four-handed dentistry, using the team concept, are explored in relation to the role these two groups of auxiliaries play in preventive oral health care. An examination of the differences and similarities of Loyola and Northwestern University Dental Schools will be valuable from an educational and historical point of view. Both schools were founded in Chicago, within a few years of each other, and achieved success through their programs in the dental field.

The final section of the dissertation describes some important issues of the 1990s and attempts to look into the future of the dental profession. Infection control, malpractice, training of auxiliaries and dentists are some of the issues that will have an enormous impact on the way dentistry will be practiced in the future.

In the following section of the chapter, some selected terms are defined which are used throughout the dissertation. In this section, the most commonly used terms in the dissertation are defined. Less frequently used terms are found in Appendix A. All terms have been defined from Zwemer's dictionary, Boucher's Clinical Dental Terminology.

Three terms--Dental Assistant, Dental Auxiliary Personnel, and Dental Hygienists--come from the American Dental Association's Comprehensive Policy Statement on Dental Auxiliaries.

Definition of Terms

ACCREDITATION A process of formal recognition of a school or institution attesting to the required ability and performance in an area of education, training or practice.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) A disease caused by a retrovirus known as human immunodeficiency virus type 1 (HIV-1). A related but distinct retrovirus (HIV-2) has recently appeared in a limited number of patients in the United States. Patients are considered to have AIDS when one or more indicator diseases (as defined by the CDC) are present. The Centers for Disease Control (CDC) has classified stages of the disease.

ADA Abbreviation for the American Dental Association, the national professional organization for dentists in the United States.

ADAA American Dental Assistants Association.

ADHA American Dental Hygienists Association.

AIDS Abbreviation for acquired immunodeficiency syndrome.

APPROVED SERVICES All services provided in a dental plan. In some plans, authorization must be obtained before approved service is provided; other plans make exception for treatment of emergency needs; still others require no prior authorization for any treatment approved under the program. Dental services that meet quality standards maintained in a dental plan.

AUXILIARY PERSONNEL Nonprofessional aides who assist the responsible professional in the provision of professional services. Dental Hygienists are formally trained and may be licensed or certificated by state authorities. Dental Assistants, laboratory technicians, and other auxiliaries may be formally trained.

BUCCAL Pertaining to or adjacent to the cheek.

CALCIFICATION The process whereby calcium salts are deposited in an organic matrix. The condition may be normal as in bone and tooth formation or pathologic in nature.

CALCULUS (CALCAREOUS DEPOSIT) A concretion composed of calcium, phosphate, calcium carbonate, magnesium phosphate, and other elements within an organic matrix composed of desquamated epithelium, mucin, microorganisms, and other debris.

CALCULUS (DENTAL) A salivary deposit of calcium phosphate and carbonate with organic matter on the teeth or a dental prosthesis.

CALCULUS (SUBGINGIVAL) Calculus deposited on the tooth structure and found apical to the gingival margin within the confines of the gingival cervix, gingival pocket, or periodontal pocket. Usually darker, more pigmented, and denser than supragingival calculus.

CALCULUS (SUPRAGINGIVAL) Calculus deposited on the teeth occlusal or incisal to the gingival crest.

CARIES (DENTAL) An infectious disease with progressive destruction of tooth substance, beginning on the external surface by demineralization of enamel or exposed cementum.

CAVITY A carious lesion or hole in a tooth.

CERTIFIED DENTAL ASSISTANT A person who has completed the Certification Board of the American Dental Assistant Association.

CONTINUING EDUCATION Postgraduate study offered either in institution of higher learning by groups with an organized dental program or by individuals who are especially qualified in certain areas. Required by some state licensing boards for license renewal. Credit accumulated for special qualifications to join special interest groups.

DENTAL INSURANCE A policy that insures against the expense of treatment and care of dental disease and accident to teeth.

DENTAL PLAN Any organized method for the financing of dental care.

* **DENTAL ASSISTANT** An individual who may or may not have completed an accredited dental assisting education

program and who aids the dentist in providing patient care services and performs other non-clinical duties in the dental office or other patient care facility. The scope of the patient care functions that may be legally delegated to the dental assistant varies based on the needs of the dentist, the educational preparation of the Dental Assistant and state laws and/or regulations. Patient care services are provided under the direction and supervision of a dentist. To avoid misleading the public, no occupational title other than Dental Assistant should be used to describe this dental auxiliary.

- * **DENTAL AUXILIARY PERSONNEL** Individuals who assist the dentist in the provision of oral health care services to patients, including dental assistants, dental hygienists, and dental laboratory technicians who are employed in dental offices or other patient care facilities.
- * **DENTAL HYGIENIST** An individual who has completed an accredited dental hygiene education program and has been licensed by a state board of dental examiners to provide dental hygiene patient care services under the direction and supervision of a dentist. Functions that may be legally delegated to the Dental Hygienist vary based on the needs of the dentist, the educational preparation of the dental hygienist and state laws and/or regulations, but always include, at a minimum, scaling and polishing the teeth. To avoid misleading the public, no occupational title other than Dental Hygienist should be used to describe this dental auxiliary.

DENTIST One whose profession is to treat diseases and injuries of the teeth and oral cavity and to construct and insert restorations of and for the teeth, jaws, and mouth.

DENTISTRY (FOUR-HANDED) The technique of chairside operating in which four hands are kept busy working in the oral cavity simultaneously.

EDUCATION OF PATIENT Effective communication between the dentist (and/or auxiliaries) and the patient concerning dentistry and the principles of treatment and prevention. The procedure of increasing the patient's knowledge of the oral cavity and its care to the point where the reasons for proposed dental services are understood.

ESTHETICS (DENTISTRY) Refers to those skills and techniques used to improve the art and symmetry of the

teeth and face to improve the appearance as well as the function of the teeth, mouth, and face.

EXPANDED DUTY AUXILIARY A person trained to carry out dental procedures more complex than the responsibilities usually delegated to dental auxiliaries.

HISTORY, CASE A detailed and concise compilation of all physical, dental, social, and mental factors relative and necessary to diagnosis, prognosis, and treatment.

HYGIENE The science of health and its preservation.

LICENSE Permission, accorded by a competent authority, granting the right to perform some act or acts that without such authorization would be contrary to law.

METHOD (FONES' TECHNIQUE) A toothbrushing technique in which, with the teeth occluded and with the brush at more or less right angles to the teeth, large sweeping, scrubbing circles are described. With the jaws parted, the palatal and lingual surfaces of the teeth are scrubbed using smaller circles. Occlusal surfaces are brushed in an anteroposterior direction.

NECESSARY TREATMENT A dental procedure or service determined by a dentist to be necessary to establish or maintain a patient's oral health.

ORAL Pertaining to the mouth.

ORAL EVACUATOR (VACUUM) A suction apparatus used to remove fluids and debris from an operating field.

PATIENT EDUCATION The process of informing a patient about a health matter in order to secure informed consent, patient cooperation, and a high level of patient compliance.

PERIODONTICS The art and science of examination, diagnosis, and treatment of diseases affecting the periodontium; a study of the supporting structures of the teeth, including not only the normal anatomy and physiology of these structure, but also the deviations from normal.

PERIODONTITIS (PERIODONTAL INFLAMMATION) The alterations occurring in the periodontium with inflammation. Gingival changes are those of gingivitis, with the clinical signs described under gingivitis. Periodontitis has histologic characteristics such as ulceration of the sulcular epithelium, epithelial

hyperplasia, proliferation of epithelial rete pegs into the gingival corium, apical migration of the epithelial attachment after lysis of the gingival fiber apparatus, cellular and exudative infiltrate into tissues, and increased capillarity. With resorption of bone in an apical direction, attachment of the periodontal fibers to the bone is progressively lost. A transseptal band of reconstituted periodontal fibers walls off the gingival inflammation from the underlying bone. A chronic, progressive disease of the periodontium.

PLAQUE (MUCIN) A sticky substance that accumulates on the teeth; composed of mucin derived from the saliva and of bacteria and their products; often responsible for the inception of caries and for gingival inflammation.

PROPHYLAXIS The prevention of disease.

PROPHYLAXIS (DENTAL) A series of procedures whereby calculus, stain, and other accretions are removed from the clinical crowns of the teeth, and the clinical crowns of the teeth are polished.

RADIOLOGY That branch of medicine dealing with the diagnostic and therapeutic applications of ionizing radiation. The science of radiant energy, its use toward the extension of present knowledge, and its diverse applications for the benefit of mankind.

RADIOLOGY (ORAL) All phases of the science and art of radiology that are of interest to the dental profession. It involves the generation and application of x-rays for the purpose of recording shadow images of teeth and their supporting tissues, adjacent regions, and associated parts. It also includes the interpretation of the radiographic findings.

RESTORATIVE Promoting a return to health or to consciousness; a remedy that aids in restoring health, vigor, or consciousness. Pertaining to rebuilding, repairing, or reforming.

RESTORATIVE DENTISTRY Branch of dentistry that deals with the reconstruction of the hard tissues of a tooth or group of teeth injured or destroyed by trauma or disease.

SCALING The removal of calcareous deposits from the teeth by using suitable instruments.

THERAPEUTICS The art of science of treatment of disease.

TOOTH, TEETH One of the hard bodies or processes usually protruding from and attached to the alveolar process of the maxillae and the mandible; designed for the mastication of food.

TOOTHACHE Dental pain.

ULTRASONIC Instrument that functions by the physical principle of magnetostriction and aids in calculus, removal, especially large and hard deposits, and instrument cleaning.

X-RAYS A type of electromagnetic radiation used to diagnosis cavities or bone loss. X-rays were discovered by Wilhelm C. Roentgen in 1895.¹⁰

¹⁰Thomas J. Zwemer, Boucher's Clinical Dental Terminology (Missouri: Mosby-Year Book, Inc., 1993).

*Comprehensive Policy Statement Dental Auxiliaries. American Dental Association, 1988.

IDENTIFICATION OF INSTITUTIONS:**FOCUS ON THE DENTAL PERSPECTIVE****LOYOLA UNIVERSITY**

Loyola University of Chicago was founded in 1870 by the Jesuits. The priests of the Society of Jesus began their work at St. Ignatius College, its original name, when it was a high school and liberal arts college on the west side of Chicago. Loyola has dedicated itself to providing quality health care and higher education. In 1994, over 15,000 students attended the nine schools that comprise Loyola. Undergraduates are the largest group with graduate students and professionals following them.

St. Ignatius College, grew rapidly as the Lake Shore Campus in Rogers Park and the Law School in Chicago became a reality. In 1909, a new State of Illinois charter incorporated Loyola University as an Illinois Corporation. In 1968, the University became officially known as Loyola University of Chicago.¹¹ Most recently, its name was changed to Loyola University, Chicago.

Loyola's heritage extends over one hundred years as an independent, religious university making it one of the most complex institutions among more than 230 Catholic colleges

¹¹Loyola University School of Dentistry Catalogue (1980-1982): 5.

and universities in the United States. It also has distinguished itself as the largest of the twenty-eight Jesuit colleges and universities in the nation.¹²

The Lake Shore Campus, Loyola's first campus, offers undergraduate and graduate studies along Lake Michigan on approximately forty-five acres. In 1991, Loyola expanded when it merged with Mundelein College which became part of Loyola University, Chicago. In addition to the Arts and Sciences, the campus houses the Marcella Niehoff School of Nursing, undergraduate education, the Institute for Pastoral Studies and the Parmly Institute for Hearing Research. The Lake Shore Campus also houses the Edward Crown Center for Humanities, the Elizabeth Cudahy Memorial Library with its Martin D'Arcy Gallery of Art and the George Halas Sports Center.

The Water Tower Campus includes Lewis Towers, the Marquette Center, Seidenburg Hall, the Law School and a new School of Business, built in 1993-1994. In Niles, a suburb, Roman Catholic priests are prepared for religious ministry. In 1991, the Mallinckrodt Campus in Wilmette merged with Loyola, offering undergraduate, graduate, paralegal studies and English as a Second Language programs. In 1994, Loyola University's School of Education was relocated to the Mallinckrodt Campus.

¹²Ibid., 6.

Loyola's Rome Center of Liberal Arts is located in Italy. It moved to Monte Mario in 1978, but the Center has existed since 1962 in Rome.¹³

Most pertinent to this study is The Loyola University Medical Center which was built in 1969. It is comprised of the Stritch School of Medicine, the Foster G. McGaw Hospital with the James and Irene Burke Ambulatory Care Center and the Loyola University Dental School. Due to its advanced technology, its clinic treats over 100,000 patients annually. It is located adjacent to Hines Veterans Hospital and the Madden Mental Health Clinic, operated by the State of Illinois.¹⁴

Loyola University School of Dentistry was the oldest Dental School in Illinois. Only three others exist in Illinois: Northwestern University, University of Illinois and Southern Illinois Dental School. Loyola has graduated over ten thousand dentists, many of whom now hold prestigious positions nationally and internationally. When founded in 1883, applicant requirements included a M.D. degree prerequisite. This changed after one year, resulting in a rapid growth in student enrollment.

In 1969, the birth of the Medical Center in Maywood, Illinois, made it possible to open two new programs, in

¹³Loyola University of Chicago Alumni Directory (New York: Bernard C. Harris Publishing Co., Inc. 1977), viii.

¹⁴Ibid.

addition to its dental program. The 1965 pilot program for Dental Assistants became a fully accredited one-year program in 1968. In the same year, the Dental Hygiene program was introduced as a two-year certificate program. By 1972, the successful Dental Hygiene program, distinguished by record enrollment, became a four-year Bachelor of Science program.¹⁵

The Dental Assisting and Dental Hygiene Programs were structured into two distinctive programs under the administrative heading of the Department of Preventive Dentistry and Community Health.

The educational philosophy of Loyola Dental School prescribed that students acquire a solid foundation in both professional practice and theory and ethical sensitivity to social and moral values. The philosophy also stressed a respect for human life and dignity. These philosophical prescriptions were manifested in the curriculum through clinical experience and cultural awareness training.

Architecturally, the Dental School was a 240,000 square feet rectangular, multi-storied, air-conditioned building consisting of three floors and a sublevel floor. Its design facilitated ease of access for all students and patients. The clinical areas were modular in concept and open in design. The dental student sat down in a cubicle,

¹⁵"Loyola University Medical Center. Inter-office Communication on Department of Dental Auxiliaries," 1972, Loyola University Dental School Archives, Provost Office Bldg. 101 - Room 1727.

quite similar to a private office while he/she practiced "sit-down" dentistry with the help of auxiliary personnel. While the technological advances in dental health practice made it more effective, the high-speed equipment utilizing water-cooled drill handpieces, required the "four-handed approach" which necessitated the assistance of auxiliary personnel.

The first level of the Dental School housed Departments in Operative Dentistry, Removal and Fixed Prosthodontics, Endodontics, Periodontics, Oral Diagnosis, Oral and Maxillofacial Surgery, Radiology and Dental Assistant Utilization clinics. Orthodontics, Pediatric Dentistry and the Graduate Clinics were located on the lower level. All of the specialty clinics were supervised by experienced faculty members.¹⁶

The second level was comprised of teaching laboratories and classrooms. Here, private faculty offices and research laboratories were located. Loyola was proud to claim that their Dental School was one of the first to use television monitors as an educational teaching aid, enhancing the learning experience of its students.

The Dental Hygiene Department was located on the second floor and closely integrated with the other floors in order to effectively facilitate patient care. Students in

¹⁶Loyola University School of Dentistry Bulletin (1990-1991): 12-13.

the Dental Hygiene Program were prepared to teach preventive health care to their patients. Through a solid foundation in dental skill and knowledge, each student became an active participant in health education. The Loyola Hygiene Program offered a four-year program towards the Bachelor of Science in Dental Hygiene.

There were many opportunities for hygienists who became instructors or worked in hospitals, research, and industry. The dental hygienist, unlike the dental assistant, is licensed by the State of Illinois to work in the oral cavity. He/she must pass a state board examination upon graduation from an accredited institution.

The Dental School was fully accredited by the Commission on Accreditation of the American Dental Association and the North Central Association of Colleges and Universities. The Dental School shared the Medical Center Library, with over 119,000 books and periodicals and 1,909 subscriptions.¹⁷

Research was an ongoing process in the Dental School. The School's contributions in science included written reports in scientific journals, as well as contributions through lecture and instruction. A program that encouraged student research under faculty supervision had been successfully implemented, with monetary assistance from private as well as governmental agencies.

¹⁷Ibid., 14-15.

In addition to the Dental School itself, the Medical Center University Hospital maintained a Department of Dentistry. The chairman was part of the hospital's Executive Committee. All dental specialties are represented in this medical setting and the hospital dental staff belonged to the faculty of the Dental School. The hospital dental faculty served the needs of hospitalized patients and emergency cases, as well as providing for the practice of postgraduate surgical residents and general dentistry residents.

Admission requirements included successful passage of the Dental Admissions Test (DAT) and a minimum of three years of college required, with four years preferred. Individuals with various other graduate degrees were also accepted by the Dental School, after successful completion of the DAT. The school year was on the trimester system of fourteen weeks, followed by one week of examinations. Upon completion of a fully accredited program at a dental school approved by the State of Illinois, the student took the examination for licensure and had to pass successfully to receive his/her license.¹⁸

Loyola University Dental School fulfilled the mission of teaching and research, while serving the community with trained practitioners. However, Loyola's dental school closed in June, 1993. Like other private dental schools throughout the United States, Loyola's enrollment continued

¹⁸Ibid., 16, 37.

to decline in the late 1980s and early 1990s, while costs and annual deficits escalated. Competition in the Illinois area from the University of Illinois at Chicago College of Dentistry and Southern Illinois University School of Dental Medicine, where tuition was approximately twelve thousand dollars less per year than at Loyola Dental School. Loyola's income was mainly derived from tuition, while the other two schools were state-supported.

While the 1990s showed an increase in dental applicants nationwide, the quality of Loyola's applicants declined. Their DAT scores and grade point averages were lower than ever before. Since Loyola had always maintained superior quality in its educational programs, the Board of Trustees decided to close both the dental and dental hygiene program in 1993.

IDENTIFICATION OF INSTITUTIONS:**FOCUS ON THE DENTAL PERSPECTIVE****NORTHWESTERN UNIVERSITY**

Northwestern University was founded in 1851 as an independent, Methodist Episcopal affiliated, private institution. It is one of the largest private research facilities in Illinois with campuses located in Evanston and Chicago. The Chicago campus is the site of the Dental, Medical, Nursing and Law schools. Enrollment totals about 5,000 students with 3,000 attending professional or graduate classes. Medical and dental students receive both their classroom education and practical research opportunities at Northwestern Memorial Hospital, the Rehabilitation Institute of Chicago as well as the Veterans Administration Lakeside Medical Center and Children's Memorial Hospital.¹⁹

The Evanston campus, along the lakefront, includes the College of Arts and Sciences, School of Education and Social Policy, Graduate School, Medill School of Journalism, Kellogg Management and Schools of Speech and Music. Approximately 7,000 undergraduate and 4,000 graduate and professional students are enrolled at the lakefront campus in Evanston.²⁰

¹⁹Northwestern University School of Dentistry Bulletin (1988-1990): 5.

²⁰Ibid., 4.

In 1887, the University Dental College in Chicago was the first dental school affiliated with Northwestern University. It was a private school that was soon reorganized in 1891 by several distinguished men in dentistry. University Dental College merged with the American College of Dental Surgery attracting talented instructors. Dr. Greene Vardiman Black, the second dean, oversaw the reorganization of the Dental School which was renamed Northwestern University Dental School.²¹ Dr. Black, known as the Father of Modern Dentistry, felt strongly that the professional student should embrace a lifelong education.

In 1926, the Dental School moved to the Montgomery Ward Memorial Building, donated by Mrs. Ward and other benefactors. The endowments, totaling over one million dollars, were also used for research, scholarships and faculty salaries. In 1978, the clinical departments moved into their location in the Health Sciences Building at 240 East Huron Street. Three floors are devoted to clinical education while the Northwestern University's Cancer Center and operating rooms occupy the remaining space.

The clinical facility maintains two or three operatories for dental personnel. A modern intercom calling system notifies students of patient's arrival for dental treatment. Two 150-seat lecture rooms, featuring the latest

²¹Liz Gondela, "Illinois Dental Schools: The Journey to the Present," Illinois Dental Journal, vol. 58, no. 2 (March-April 1989): 79.

in audiovisual equipment and a Satellite Library, is available to all dental and medical students.²²

Northwestern University is proud of its Dental School Library. The Satellite Library is in the Health Sciences Building and reports having over 40,000 circulations per year. It boasts one of the largest dental collections in the world. In addition to its availability to medical and dental students and faculty, alumni have equal access to its rare book collections.

Dental education consists of four years of study leading to the degree of Doctor of Dental Surgery. In addition to the Master of Science degree and postgraduate courses offered, certificate and degree programs are available. One school year includes three trimesters of studies in theory and concepts of general dentistry.

Northwestern University Dental School is approved by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Programs.²³ Entrance requirements include successful completion of the Dental Admissions Test (DAT) and a minimum of sixty semester hours of college coursework, most of those being in the sciences. All students, upon completion of the educational

²²Northwestern University School of Dentistry Bulletin (1988-1990): 7.

²³Ibid., 7.

requirements, must pass a State Board Examination to obtain licensure.

Dental hygiene at Northwestern University Dental School began in 1922 with the first hygiene program in Illinois established at Northwestern Dental School. In 1939, it grew into a two-year course granting the students a Diploma in Dental Hygiene. In 1979, the program evolved into a four-year baccalaureate program.²⁴ These programs were products of the changes in both society and health care in the 1970s and 1980s. One of these changes was the advent of third party payment or dental insurance. As dental insurance became increasingly available to individuals through their employment, the desire for dental health care grew rapidly.

Dental hygienists had to be prepared for their changing roles as part of the dental health team. Clinical training alone was no longer sufficient. Courses in the humanities, business and practice management were also necessary. The Bachelor of Science in Dental Hygiene was instituted. This was partly borne of a desire to provide affordable dental care to the patient through a dental health care team member other than the dentist, namely the hygienist. Patients now were able to confidently seek out their hygienist for information to not only prevent oral disease, but provide assistance with the practical aspects of dental health care, such as insurance payments.

²⁴Ibid., 4.

Northwestern University also offered three other Bachelor Degree programs. One is the Bachelor of Science in General Studies, where the student who completed the two-year hygiene program could enroll in University College for education in general studies. The Bachelor of Science in Health Education, as well as the Bachelor of Arts degrees, admit students who complete a two-year dental hygiene program. These students wished to be admitted into the School of Education and Social Policy and earn Illinois certification as a health educator upon successful completion of required coursework and student teaching. The Bachelor of Arts degree granted hygiene students one year of credit for their previous hygiene studies as they completed the requirements for the aforementioned programs for a degree in the College of Arts and Sciences.²⁵

Admission requirements expected the student to be a high school graduate, with at least sixteen post-secondary credits, prior to the application process. The three-year baccalaureate program applicant was required to submit ACT or SAT test scores and the Dental Hygiene Admissions Test score. One year of basic science courses,²⁶ inclusive of chemistry, was highly recommended. One academic year was divided into trimesters that provided didactic instruction, clinical and independent or elective studies. There was opportunity for

²⁵Ibid., 7.

²⁶Ibid., 9.

the hygiene student to work part-time, while attending school, to enhance his/her skills and earn extra funds.

While the Dental Hygiene Department was located in the Health Sciences Building; a separate facility, the McGaw Medical Center of Northwestern Medical Center, provided a location for clinical studies and work experience closely associated with members of the nearby community it served.

Like the dental and medical students, the dental hygiene students shared in the use of the Dental School library in the Ward building and the Satellite Dental Library in the Health Sciences Building. They also had access to the Law, Medical and University library in Evanston. The next chapter examines the historical linkage of Dental Auxiliaries to the dental profession.

CHAPTER II
HISTORICAL LINKAGE OF DENTAL AUXILIARIES
TO THE DENTAL PROFESSION

The historical beginnings of dental hygiene and dental assisting have been greatly overlooked. In order for these two groups to come into being, the profession of Dentistry had to be developed first. It is interesting to note how the growth and development of Dentistry from the 1700s gave rise to the dental hygienist and dental assistant movement.

Historically, dentists, as well as physicians, were trained informally through a tutorial association known as preceptorship.¹ The preceptorship was a teacher-student agreement, whereby a student became skilled at making his own dental instruments from steel, learning how to extract an infected tooth, and the art of carving artificial teeth. The early 1800s was a time in which the dental profession began to emerge. It was unheard of for women to engage in these professional activities during the 1820s to mid-1850s. It was the preceptorship method that gave rise to the formal educational institutions that followed. The first of such

¹Robert J. Bruckner, et al., "Dental Preceptorships of the 19th Century: What Were They Like?" Bulletin of the History of Dentistry, vol. 36, no. 1 (April 1988): 12.

institutions was the Baltimore College of Dental Surgery, established in Maryland in 1840. This was the first institution to award the degree of Doctor of Dental Surgery (D.D.S.).²

Primitive dental techniques were practiced in the ancient periods, as early as 3000 B.C., by the Babylonians, Assyrians, Egyptians, Greeks, Romans, and Arabs. France began to regulate the practice of Dentistry as early as 1699. The dental student was to become apprenticed to a licensed medical surgeon for a period of two years, take specific examinations, as well as an oath to the High Court of France. Pierre Fauchard authored the first textbook from which dentists and students alike would learn the scientific methods of the newly emerging profession, known as Dentistry. While the French Revolution would temporarily disrupt Fauchard's progress, France's leadership in dentistry would pave the way for nineteenth century dentistry in the United States.³

Colonial American dentistry followed the similar path of progress made in Europe. Most men interested in the dental profession were multi-versed barber surgeons. They

²Joseph H. Kaufman, "The World's First Dental College." New York State Dental Journal, vol. 42, no. 6 (June-July 1976): 349.

³Alan R. Breitbart and Philip C. Aftoora, "A Brief History of Dentistry and Dental Education." CAL, vol. 42, no. 3 (September 1978): 5-7. American Dental Association Historical Documents, 211 E. Chicago Avenue, 19th floor, Chicago, Illinois.

accommodated any or all health problems a person had, especially those of the oral cavity.

During the American Revolutionary period, American dentists followed their European colleagues' ideas and techniques with apprenticeships, the common method of learning the skills of dental health care. The growth of dentistry as a profession began to impact related areas as well. As progress ensued, so did competent dentistry through great practitioners such as: John Baker, teacher of Paul Revere; George Washington's dentist, John Greenwood, who also developed the foot drill; Johann Serre, an expert in tooth removal; Dr. G. V. Black, an able researcher and expert on tooth structure.⁴

A private class in dental education was given by Dr. John Harris in 1827 in the town of Bainbridge, Ohio. In addition to being a dentist, he was a physician and surgeon as well. Ohio became known as the "Cradle of Dental Education" due to Harris' early efforts to provide a formal preparation for eager dental students. It was Dr. Chapin Harris, brother of John, who became co-founder of the Baltimore College of Dental Surgery in 1840. In 1845, the Ohio College of Dental Surgery was founded by Dr. James Taylor and John Alden,

⁴James R. Jensen and Shirley Pratt Schwarzrock, Effective Dental Assisting (Iowa: William C. Brown Company, 1982), 28.

students of Dr. John Harris.⁵ These three founding fathers of dentistry, through their establishment of the above schools, laid the foundation for future growth and development.

The early 1800s was a period of the growth of population, towns, and cities. With this growth came a desire to improve human life. The development of professional specialties were an extension of this historical process. Harvard established a dental department in 1867. This merger of a dental department with its medical section at Harvard University was the first of its kind to inaugurate a relationship that would prove beneficial for both specialties in the future.⁶ Harvard's program required two years of academic coursework with a three-year apprenticeship. From 1870 to 1900, other dental schools opened; however, the quality of education and the expertise of the faculty were poor. By 1910, a high school diploma was required to begin dental study, while a four-year curricula appeared around 1917.⁷

⁵Wilman E. Motley, History of The American Dental Hygienists Association, 1923-1982 (Illinois: American Dental Hygienists' Association Publisher, 1986), 1-2.

⁶William F. Vann, Jr., "Evolution of the Dental School Curriculum-Influences and Determinants," Journal of Dental Education, vol. 42, no. 2 (1978): 67.

⁷Don L. Allen, "The History and Current Status of Curriculum Length in United States Dental Schools," Journal of Dental Education, vol. 45, no. 10 (1982): 702.

While great strides were made at Harvard Dental School, Ohio was still the favorite area of early American dental pioneers. Dr. Harris instituted a core of biological science courses as well as instruction in clinical procedures. Once the dental students established their own dental practices upon graduation, they discovered that dental decay and periodontal disease could be controlled through preventive education. As they began to realize the amount of time that dental education would take, they began to seek the help of the dental assistant and dental hygienist to relieve themselves of these seemingly mundane tasks. The first dental helpers were male dental students or recently graduated dentists. From time to time, a dentist's wife was employed to assist her husband in his practice. However, progress was slow in accepting a female in the dental office in the 1800s.

Several inventions escalated the dental profession's increasing need for dental auxiliaries. Among them were the introduction of nitrous oxide anesthesia in dental operations, first used by Dr. Horace Wells and Dr. William Morton in 1842. In 1871, the innovative dental engine with diamond cutting instruments and a treadle was used for tooth preparation. In 1896, Dr. C. Edmund Kells introduced the x-ray as a means of diagnosis in prevention of disease. He also employed the first female dental assistant.⁸ Because of these innovations,

⁸James R. Jensen and Shirley Pratt Schwarzrock, Effective Dental Assisting (Iowa: William C. Brown Company, 1982), 28.

dentistry evolved from an apprenticeship and itinerant trade to a profession, and in turn, it would provide a place for the dental assistant and the dental hygienist in the delivery of quality dental health care.

The American Dental Association (ADA), founded in 1859, also proved to be an important historical milestone in the progress of auxiliaries into dental education. Its membership represented quality dentistry; as they organized scientific knowledge and techniques, encouraged local groups to form, and stressed education and protection of the patients. From 1860 until 1912, the ADA encouraged dental education on all levels, including research in the profession and licensure for all dentists. The ADA would play an important role in establishing National Board examinations for dentists first, and soon afterward, the assistants and hygienists.⁹

As the field of dentistry became more public, emphasizing the importance of good oral health for general health maintenance, dental hygiene was also extended to the care of children. The American Journal of Dental Science ran several articles regarding Dr. Parmly's technique on the proper technique for flossing the teeth, several times per day, to keep teeth clean. This was the first attempt to

⁹Wilma E. Motley, Ethics, Jurisprudence and History for the Dental Hygienist (Philadelphia: Lea and Febiger, 1976), 86.

enlist and educate the patient in assuming partial responsibility for his/her own oral health.¹⁰

As interest continued to develop toward dental hygiene, the Alabama Dental Association passed a resolution and provided lectures and instruction in public schools to encourage children to develop good techniques of oral hygiene in 1887. The dental societies were finally recognizing the need for preventive dentistry.

The first preventive dental practice was founded by Dr. Eugene Smith in Philadelphia in 1894. He stressed proper diet, as well as a clean mouth. He espoused polishing the teeth with fine pumice and polished wooden orange sticks. In his paper, Oral Prophylaxis, Smith outlined a set of steps to prevent decay and pyorrhea so that the patient would avoid tooth loss as well as bone loss. In 1916, Dr. Myer L. Rhein, a New York physician, was responsible for coining the term "Dental Nurse" through his lectures, papers and influence on the New York Legislature.¹¹

With such strong efforts placed on prevention in the dental profession, Dr. Alfred Civilian Fones employed a preventive service for his patients. In addition, he was clinical professor at the New York College of Dental and Oral Surgery. In 1906, Fones decided to train his dental assistant, Irene Newman, in prophylactic methods. He taught

¹⁰Ibid., 87.

¹¹Ibid., 91.

her the basic sciences, polishing, and scaling skills and a sense of proper touch. Mrs. Newman was now on her way to becoming the first dental hygienist.¹²

Due to Dr. Fones's keen insight in developing the role of the dental hygienist as a way of teaching preventive techniques to dental patients, he is considered the founder of Dental Hygiene. Interestingly, he believed women were more conscientious, honest and reliable and would not feel restricted in the practice of dental hygiene as did male dentists of the times. It was in the early twentieth century that the dental hygienist would take her place as a preventive educator in dentistry.

Dr. Fones coined the name "Dental Hygienist" from the name "Dental Nurse." He felt the later term was not descriptive enough and thus changed the name. He also instituted a lecture series and six week course in dental prophylaxis for the training of dental hygienists in 1913.¹³ In 1914, twenty-seven graduates in Connecticut were ready to take their place in the public schools, teaching children the technique of proper brushing and home care for their teeth. The dentists of Connecticut were very supportive of the increasing number of dental hygienists as they became trained

¹²Wilma E. Motley, History of the American Dental Hygienists' Association, 1923-1982 (Illinois: American Dental Hygienists' Association Publishers, 1983), 21.

¹³Alfred C. Fones, "The Origin and History of the Dental Hygienists Movement," Journal of American Dental Association, vol. 13 (December 1926): 9.

and part of the new dental team.¹⁴ In 1916, the first university course for hygienists began at Vanderbilt Clinic of Columbia University and grew into the separate institution, the College of Dentistry of Columbia University.¹⁵

By 1917, dental hygienists were granted licensure in Connecticut. This significant development came only one year after the first dental hygiene school was founded at Columbia University.¹⁶ The University of California College of Dentistry had the distinction of being the first dental school to establish a school for dental hygienists as well as the first to approve the option, after a two-year professional training course, to advance toward a Bachelor's Degree in Dental Hygiene.¹⁷

The American Dental Association, in 1923, established the American Dental Hygienists' Association with forty-six hygienists assuming a leadership role in it. Upon the ADA's Council on Dental Education's recommendation in 1946, admission to hygiene programs required a high school diploma as well as two-years of college. After thirty-three years--1917 to 1950--the position of dental hygienist finally

¹⁴Ibid., 11.

¹⁵Ibid., 12.

¹⁶Harold Hillenbrand, "Fast and Forecast: Dental Hygiene," Journal of American Dental Association, vol. 43. (1969): 207.

¹⁷Ibid., 70.

received legal sanction in all the states.¹⁸ With accreditation of dental hygiene schools beginning in the early 1950s, the 1960s found the American Dental Association authorizing dental schools to explore the possibility of expanded duties for both dental assistants and dental hygienists. Approximately ninety-six dental hygiene schools were in operation throughout the United States by 1968.¹⁹

The period of the 1970s through the 1990s, the focus of this study, revealed a trend toward the increase of dental auxiliaries in private offices, public health, administration, and hospitals. Dental care and office practice also changed during this time. There was a trend toward group practices, where two or more dentists practicing together shared expenses and auxiliary utilization. In 1956, the DAU (dental auxiliary team or utilization program) began in selected schools.²⁰ A federally supported program, it prepared dental students to work with dental auxiliaries, using four-handed sit-down dentistry. Preset instrument trays were used to achieve efficiency during dental treatment. Records indicated there was a sixty percent increase in dental productivity over the practitioner who worked alone.²¹

¹⁸Ibid., 207.

¹⁹Ibid., 207.

²⁰Changing Times in Dentistry: Report of a Workshop. The American Academy of Dental Practice Administration (Chicago, Illinois, February 11-13 1976), 126.

²¹Ibid., 127.

Another federally funded program, developed from the successful DAU program, was TEAM--Training in Expanded Auxiliary Management. Special training was now necessary for the auxiliary to perform specific skill-oriented tasks. Under the dentist's supervision, the TEAM auxiliary was allowed to take impressions, change surgical dressings, place and finish plastic restorations, and perform other duties as well. Both programs sought to increase dental health care in relationship to productivity and availability.²²

Dental third-party payment insurance plans developed in 1955 and grew in 1965 through coverage with the Medicare plan. The American Dental Association provided additional dental programs for children in 1966 causing a burgeoning of other insurance programs that were now available through government and employee health programs.²³

It is no wonder that the dental field flourished from 1970 through 1990. With reformed dental curriculums and advanced technology of high-speed drills, improved dental materials, research and skillful utilization of dental auxiliaries, federal funding and the availability of dental health insurance, the dental office had now become transformed into a place where all the needs of the patients were being met. The patients were now becoming actively involved in

²²Ibid., 127.

²³James R. Jenson and Shirley Pratt Schwarzrock, Effective Dental Assisting (Iowa: Wm. C. Brown Co., 1982), 34.

their treatment and prevention of dental disease. Let us now examine these two groups of auxiliaries more closely and in greater depth.

Dental Hygiene

The Registered Dental Hygienist is a licensed, professional, a clinician and oral health educator. She/he, along with the dentist, delivers knowledge to the patient through preventive, educational, and therapeutic methods to control or eradicate oral diseases in individuals or groups as they strive to achieve optimum health for themselves and their families.²⁴ The hygienist's services are rendered in both the general and specialty office. One will find the dental hygienist in all branches of the armed services, research programs, public health, professional education, and school, industrial, hospital and institutional health care systems.²⁵

While we know that the word "hygiene" can be further defined as the science of health and its preservation, the dental hygienist may be defined as a person trained in an accredited school and licensed by the state of her/his residence. This auxiliary provides health services, such as scaling and polishing of teeth as well as taking x-rays of the teeth for proper oral diagnosis. Their role is that of dental

²⁴Esther M. Wilkins, Clinical Practice of the Dental Hygienist, sixth ed (Philadelphia: Lea and Febiger, 1989), 3.

²⁵Marcel A. Fredericks, et al., "A Model for Teaching the Components of Bureaucracy." Educational Directions, vol. 1, no. 1 (January 1976): 17.

health educator for all patients under the supervision of a dentist.²⁶

As the hygienist assumes the role of a preventive educator, it is important to answer the question, what is preventive dentistry? First of all, the goal of preventive dentistry has been, and is currently, to maintain the oral cavity with optimum health, using the simplest methods available. Preventive dentistry helps to stop the neglect of an individual's teeth through scaling and polishing of the tooth structure to reduce decay, periodontal disease, and pain. As the hygienist attempts to teach and offer preventive services to all patients, there must be a conscious effort to perform in a professional manner as she/he motivates the patient through her/his own maintenance of a healthy, decay-free mouth.²⁷

Prevention falls into two major categories: primary and secondary prevention. Primary refers to procedures or measures used before disease occurs. Secondary prevention involves the treatment used in the early diagnosis of oral disease or possible tooth loss. An example of a primary preventive technique would be fluoride applied to the teeth to help prevent tooth decay. Removal of calculus above and below

²⁶Thomas J. Zwemer, Boucher's Council Dental Terminology (Missouri: Mosby-Year Book, Inc. 1982), 152.

²⁷Marcel A. Fredericks, et al., "How dental auxiliary students look at dentists, dentistry, and community dentistry. The Dental Student, vol. 51, no. 3 (December 1972): 32.

the gingiva is an example of secondary prevention because it prevents bone loss and periodontal disease from spreading throughout the mouth.

Although the hygienist provides educational services to the patient, the success of the treatment performed, both short and long-term, depends on the day to day care of the patient. In the early years, patient education by hygienists was performed in a limited manner, reflective of the education of the dental hygienist. However, progress in dentistry and hygiene education and practice have improved as dental hygiene education programs have become more complex, especially from 1970 until the present time.²⁸

Therapeutic methods are similar to preventive methods in that they include all dental hygiene treatment necessary to help the patient establish good oral health. This would include scaling and polishing the teeth, charting/maintenance of case histories, x-rays procedures, polishing, restorations, application of fluoride and instruction on proper nutrition and mouth care.

Total hygiene care is the integrative process of preventive, educational and therapeutic methods used by the hygienist to treat all patients.²⁹ From the time of both the

²⁸Marcel A. Fredericks, et al., "A Model for Teaching the Components of the Family in Dental Care." Educational Directions, vol. 2, no. 1 (February 1977): 23-25.

²⁹Marcel A. Fredericks, et al., "A Model for Teaching Social Concepts to Dental Auxiliaries." Journal of Dental Education, vol. 35, no. 4 (April 1971): 234.

early pioneers and Dr. Alfred Fones, the Father of Dental Hygiene, great emphasis has been placed on the educative role as crucial to the therapeutic and preventive methods used. Dr. Fones wanted the hygienist to perform as dentistry's channel to the world to disseminate knowledge on how all patients could achieve sound dental health.³⁰

American Dental Hygienists' Association

The American Dental Hygienists' Association (ADHA) was founded in 1923 in Cleveland, Ohio. On September 12, eleven states were represented in the group of forty-six Dental Hygienists, who were its founders.³¹ They decided that ADHA membership required all hygienists to possess a certificate or degree in dental hygiene and licensure in the state in which they practiced. It was thought that this would facilitate cooperation and dental communication among all hygienists.³² Furthermore, they wanted to become closely associated with the American Dental Association (ADA). They felt that this liaison between the two groups would facilitate the good of humanity.

³⁰Esther Wilkins, Clinical Practice of the Dental Hygienist, sixth ed (Philadelphia: Lea and Febiger, 1989), 3.

³¹Pauline F. Steele, Dimensions of Dental Hygiene (Philadelphia: Lea and Febiger, 1966), 493.

³²"The History of The American Dental Hygienists' Association." American Dental Association Library, 211 East Chicago Avenue, Chicago, Illinois, Bulletin of Michigan Dental Hygienists' Association, vol. 13, no. 1 (March 1983): 9.

In the first decade after its establishment, the ADHA's objectives centered around promotion and elevation of hygiene education and professionalism. In order to achieve their objectives, the Journal of the American Dental Hygienists' Association was published in 1927. In 1973 and until 1988, the Journal changed its title to Dental Hygiene. Currently, it is called Journal of Dental Hygiene: JDH. That same year, an official insignia of the dental profession was approved by the American Dental Association. These first ten years (1923-1933) were formative in that they forged a strong foundation as they organized state and constituent groups.³³ Twenty-three constituent associations were chartered and organized by 1933 with the appointment of six trustees representing all the constituent districts to the ADHA, at this time.

Shortly after 1933, the ADHA Bylaws were amended to increase the trustee number from six to nine to allow for growth in membership and achievement. The organization was certainly fulfilling its original purpose, as stated in the Constitution and Bylaws. The purpose was to cultivate and promote the hygiene profession as an art and science through education. Goodwill and mutual improvement among members were to be fostered as well as their continuing role as disseminators of knowledge. They were to publish in journals

³³Pauline F. Steele, Dimensions of Dental Hygiene (Philadelphia: Lea and Febiger, 1966), 495.

while they progressed in their quest for improved legislation toward uniform dental hygiene laws.³⁴

In 1960, the Bylaws were amended once again to enlarge the Board of Trustees to twelve representatives with fifty-one constituent associations and 114 component societies.³⁵ The ADHA is governed by its Constitution and Bylaws and Principles of Ethics that prescribe the moral code. The five classifications of membership are active, life, affiliate, junior and honorary members. An active member must possess a degree or certificate from a school of dental hygiene accredited by the Council on Dental Education of the American Dental Association and be licensed to practice in any state or district of the United States. Life membership is available to all past presidents of the ADHA. Affiliate privileges are given to hygienists practicing outside the United States. Junior members are undergraduate students in hygiene who have made considerable contributions to the science of dental hygiene. A member of the Board of Trustees or House of Delegates would be eligible for this honorary membership.³⁶

One of the ADHA's most notable accomplishment was a process of standardization for all dental hygiene schools.

³⁴Wilma E. Motley, History of the American Dental Hygienists' Association 1923-1982 (Illinois: American Dental Hygienists' Association, 1983), 81-82.

³⁵Pauline F. Steele, Dimensions of Dental Hygiene (Philadelphia: Lea & Febiger, 1966), 496.

³⁶Ibid., 499.

This was known as the Dental Hygiene Aptitude Testing Program established in 1957. It consisted of a battery of tests designed to predict the student's success in dental hygiene programs. In 1952, the Council on Dental Education of the American Dental Association established a formal accreditation program inclusive of site visits to all hygiene schools, in order to evaluate their curricula. Its goal, while maintaining uniformity in education, was to help the profession of dental hygiene adapt to the changing trends of the 1970s and through to the present time.³⁷

The Illinois Dental Hygienists' Association with its interest in professional education established financial aid programs for hygiene students. Through joint effort with the American Fund for Dental Education, the ADHA provides scholarships to qualified senior hygiene students as well as financial aid to Registered Dental Hygienists wishing to advance toward the baccalaureate degree.³⁸

Dental hygiene in Illinois has proceeded to a level of professionalism largely due to the influence and support of the Illinois Dental Hygienists' Association founded in 1923. Early dental hygienists were only allowed to clean teeth and educate the patients. Since that time, these dental clinicians have assumed more responsibilities and a wide

³⁷Ibid., 489.

³⁸Wilma Motley, "American Dental Hygienists' Association: 50 years of growth," Journal of Dental Hygiene, vol. 87 (November 1973): 1125.

variety of expanded functions. The hygienists may take impressions, place rubber dams, apply pit and fissure sealants, and in some states, give local anesthetic and do restorative work.³⁹ In the performance of these expanded duties, the hygienist holds a significant role as educator and member of the health care team.

History of Accreditation and Hygiene Education

Since the early 1900s, accreditation has been used to evaluate the quality of educational programs in the United States. Accreditation, by definition, is a process by which any post-secondary educational institution has its programs and objectives evaluated by an independent source or agency. This is to determine if it is maintaining quality standards and if it is comparable to other similar institutions.

Accreditation serves two purposes: it helps assist in program development and helps to maintain high quality standards. This is uniquely American in that it is self-regulating and fosters independence in the educational system.⁴⁰

While accreditation is often thought to be a form of status granted an institution or educational program, it is

³⁹"75 Years of Dental Hygiene Education," Dental Hygiene, vol. 54, no. 3 (1980): 116.

⁴⁰Sherry W. Burke, Accreditation: An Overview of Historical and Factual Information as it Relates to Dental Hygiene Education," Council of Education Services and Research, American Dental Hygienists' Association (June 1984): 2.

actually a form of self-evaluation and peer review. In order to understand this more fully, an historical review of the process of accreditation is necessary.

Prior to the turn of the century, there was a lack of continuity in higher education among institutions. The diversity among programs and rapid development of new post-secondary educational institutions resulted in a lack of standardization.

In 1906, college presidents met in Williamstown, Massachusetts to establish a method to standardize college education. The following year and annually thereafter, the Carnegie Foundation, the National Conference Committee of College and Preparatory Schools, as well as the United States Commission of Education, has met to formulate a plan whereby all regional and university associations would be integrated through the process of Accreditation.⁴¹

In 1910, the Flexner report, evaluating medical education and also sponsored by the Carnegie Foundation, made public the information on medical education inadequacies. By 1926, the Gies Report on Dental Education in the United States and Canada became public record. It attempted to equate dental education with medical education as it reviewed dentistry historically and urged the dental schools to set standards of excellence for themselves.⁴²

⁴¹Ibid., 3.

⁴²Ibid., 3.

In the early twentieth century, significant changes in the system of education in America occurred. Federal and private agencies now supported revamping education through the accreditation process. In 1929, the North Central Association Commission on Higher Education recognized that there would be differences in the various programs among institutions. As a result, a need for self-study developed as these differences were encouraged. Its goal became improvement, not rejection or acceptance.

The great educational expansion after World War II resulted in a multitude of accrediting agencies but there was fear of the quality of educational standards being lowered. To coordinate the accreditation process, the National Commission on Accrediting (NCA) was founded in 1949 to regulate the specific agencies of the American Medical Association (AMA) and the American Dental Association (ADA). With the new strong supporting role of the Federal government in education during the post war period, the United States Department of Education limited Federal grants to accredited educational institutions.⁴³ The dental hygiene educational programs began to consider their evaluative processes. Due to social pressures after the war, especially those concerning health care, the Council on Dental Education began to scrutinize schools of dental hygiene.

⁴³Ibid., 6.

The Horner Report, in 1945, reported inconsistencies in dental hygiene education. This report drew attention to the necessity of standardized requirements for dental hygienists in educational programs. The result was the establishment of standards and setting a minimal length of two years for entry level dental hygiene programs. Not all programs passed these requirements; by 1952, all schools had to meet this official hygiene accreditation level.⁴⁴

It was not until 1975 that the Commission on Dental Accreditation was established. In addition to Dentistry and its specialties, dental assisting and dental hygiene were fields that came under the Commission's twenty members jurisdiction. Programs are evaluated every five years with site visits taking place every ten years. The process begins with the educational program filing an application for accreditation. Once its eligibility is determined, the educational institution completes a self-study for each program--either dental hygiene or dental assisting. This process is provided free of charge to the school being examined by the Commission.

The self-study is basically a self-analysis of the program in its relationship to the standards of accreditation along with the total effectiveness of the program. Site teams comprised of a Commissioner appointed by the ADHA, three dental hygiene consultants and other staff representatives

⁴⁴Ibid., 7.

prepare a report for the dean or chairman of the school's program. The findings are also reported to the Commission, citing strengths and weaknesses. The Commission then makes recommendations to the institutions. In approximately thirty days, the Commission either sends approval or makes recommendations for improvements. In this case, another site visit is required before approval for accreditation can be given.

The first published report of accredited dental hygiene programs appeared in 1953 listing twenty-one official programs. Since 1953, accreditation standards have been revised four times in 1969, 1973, 1979 and 1991. The primary aim of the Commission on Dental Accreditation is to maintain and improve the quality of dental hygiene education.⁴⁵

As of 1993, accreditation of all dental hygiene programs in the United States must meet twelve standards set by the Commission on Dental Accreditation. The first Standard is Educational Setting. A dental hygiene program must be established in a not-for-profit institution that is accredited by both the Council on Post-secondary Accreditation and the United States Department of Education to offer college level programs.⁴⁶ Standard two is Community Resources. The community served by the institution must offer adequate

⁴⁵Accreditation Standards for Dental Hygiene Education Programs, Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois (January 1993): ii.

⁴⁶Ibid., 1.

professional and population resources to maintain the hygiene program.⁴⁷ Standard three is Administration. The program's goals must be maintained by the administration.⁴⁸ The fourth Standard is Financial Support. In order to achieve its goals and develop programs, adequate financial support is necessary. The fifth Standard is Curriculum. Curriculum must be written to state its goals, course outlines, objectives, and learning experiences as well as evaluation procedures used to assess its goals.⁴⁹ Standard six is Admissions. Students must be admitted according to specific written criteria, procedures, and policies.⁵⁰ Standard seven is Faculty. All faculty teaching in a dental hygiene program must have a background that includes educational methodology and possess a degree that is higher than the degree the students will be granted. Salary will be determined by professional and teaching experience with competency in research.⁵¹ Standard eight is Facilities. The equipment and physical plan must be adequate to allow hygiene students the latitude to achieve the program's goals.⁵² Learning Resources--Standard nine requires a library well-equipped with sufficient holdings to

⁴⁷Ibid., 2.

⁴⁸Ibid., 3.

⁴⁹Ibid., 5.

⁵⁰Ibid., 13.

⁵¹Ibid., 14.

⁵²Ibid., 16.

facilitate learning, service and research development.⁵³ Standard ten is Students. Policies to protect students must be established.⁵⁴ Standard eleven is Patient Care. Dental hygiene programs must provide mechanisms to inform patients about the availability of comprehensive health care.⁵⁵ The twelfth Standard is Outcome Assessment. This standard dictates a formal assessment of each program's outcomes.⁵⁶ In addition to these twelve standards, Standard X was added most recently to include Bloodborne Infectious Diseases. In Standard X, the program's curriculum must prepare students who provide oral health care services with knowledge about bloodborne infectious diseases. Standard X was added to maintain current knowledge on sterility in light of the AIDS epidemic of the 1990s.

As shown through the above Standards set as guidelines by the Council on Dental Hygiene Accreditation, dental hygiene education has improved considerably since the first class in 1910 at the Ohio College of Dental Surgery.⁵⁷

It is important to address another crucial issue in dental hygiene education as we consider its historical ties to

⁵³Ibid., 20.

⁵⁴Ibid., 20.

⁵⁵Ibid., 21.

⁵⁶Ibid., 22.

⁵⁷"75 Years of Dental Hygiene," Dental Hygiene, vol. 54, no. 3 (March 1980): 116.

the contemporary dental profession. That issue addresses the question of why females were the preferred choice among early dentists to be trained for hygienist duties. This was due to the influence of Dr. Alfred C. Fones, the Father of Dental Hygiene. A believer in Preventive Dentistry, he felt that a woman was more conscientious, honest, reliable, and adaptable to the requirements needed to perform dental hygiene therapies, such as cleaning teeth. He also preferred a woman to a male hygienist for another reason. A female had the personality to motivate patients in preventive health care. Fones was supported by H.S. Seip, President of the Pennsylvania State Dental Society and Dr. F. W. Low of New York, in his preference for female therapists. C. M. Wright of Ohio also perpetuated this notion that women should be trained to clean teeth. Furthermore, they should be of a refined nature, trained in a one-year program, and work under a dentist's supervision. These attitudes contributed to dental hygiene being dominated by women in the early historical period of dentistry.

Until the early 1960s, men were excluded from Dental Hygiene Bylaws, which specifically stated it was a profession for women only. In 1963, the first male hygienists were accepted and the word "female" was deleted from all American Dental Hygienists' Association documents.⁵⁸

⁵⁸Wilma E. Motley, "Dental Hygiene at 75," Journal of Dental Hygiene, vol. 62, no. 9 (October 1988): 463.

Dental Hygiene from 1970 to 1990

We have observed from the historical analysis provided that the Illinois Dental Hygienists' Association, the American Dental Association and the Commission on Dental Accreditation have done a superb job in educating and credentialing the modern dental hygienist. However, how have dental hygienists fared in the past twenty years? Considering the following factors, such as modern technology being a part of all offices today, increased affordability of dentistry as a result of dental insurance and preventive education provided to the patient by auxiliary personnel, where is the profession now headed?

Two new concepts introduced during this time frame were expanded function and team approach. Team approach can be defined as a group of people who are highly skilled working together as part of a health care team to provide a comprehensive, coordinated treatment plan to the patient.⁵⁹ The way in which these individuals interact and communicate depends on how successful they are in teaching patients how to assume responsibility for their own mouths. The dental hygienist has many obstacles to overcome as she/he becomes an effective team player. She/he must assess the patient's educational level and level of pain threshold.⁶⁰ Pain and

⁵⁹Marcel G. Fredericks, Ralph R. Lobene, and Paul Mundy, Dental Care in Society (North Carolina: McFarland and Co., 1980), 82.

⁶⁰Ibid., 83.

anxiety are experienced, for the most part, through preconceived attitudes on the part of the patient. As the number of patients increases, so must the number of auxiliary workers who are adequately trained to work together in dental care. In 1973, the number of dental hygienists was 21,000. In addition, 116,000 persons were employed as dental assistants. In the 1970s, health care workers totaled approximately five million persons with growth upward of eight million individuals into the 1990s.⁶¹ One can readily see that a team approach was necessary to deliver quality health care to the patient in the most economical way.

Dental hygienists, in spite of their training, have suffered isolation and role dissatisfaction.⁶² She/he works alone and does not have the feedback on her/his performance as do her/his counterparts, the assistants. Hygienists also feel they are over-educated and under utilized as they cannot practice the variety of expanded functions other auxiliaries in other states and countries are allowed to perform.⁶³ In Illinois, hygienists cannot place restorations in the mouth or administer anesthetic to the patient. They are restricted to

⁶¹Ibid., 84-85.

⁶²Marcel A. Fredericks, et al., "Social Attitudes of Dental Hygiene Students." Part 2: Professional Concerns. Journal of American Dental Association. vol. 45, no. 4 (July-August 1971): 237.

⁶³Richard Adelson, et al., "The Dental Hygienist-A member of the Team?" Dental Hygiene, vol. 50, no. 1 (January 1976): 26.

scaling and polishing teeth, taking radiographs, charting the teeth for cavities and oral education.

As dental specialties increased during this period (1970-90), there was a great demand for trained dental auxiliary personnel. According to one study in 1972, thirty-seven dental hygienists were surveyed to identify what they saw as the most important problem in dentistry. Thirty-seven percent responded that there was an overwhelming need for additional auxiliary personnel, while sixty-seven percent responded that dentistry was unable to deliver dental care to the poor, aged, and disadvantaged.⁶⁴ This information illustrates that the dental hygienist must remain a valuable part of the dental health team. Since these groups have not received adequate oral care in the past, shortages occurring in the training and hiring of dental hygienists would affect them even more so. The most controversial concept of the 1970s through the 1990s was the trend for dental hygienists and dental assistants to perform expanded functions.

Legally, the clinical skills that dental hygienists were allowed to perform varied from state to state. The dental hygienist's role was becoming more complex. While expanded functions were growing, the cost of dental services became unaffordable for unemployed and those without insurance

⁶⁴Marcel G. Fredericks and Paul Mundy, "How dental-auxiliary students look at dentists, dentistry, and community dentistry," Dental Student, vol. 51, no. 3 (December 1972), 32-33.

dental benefits. As the economy improved nationwide in the 1980s, there were less dental caries. Dental caries declined due to families having extra funds available to visit their dentist on a regular basis. The emphasis was now on periodontal disease, but dentists were not congenial towards delegation of dental health care. The dentists wanted to treat the periodontal disease themselves and did not want the hygienist to participate. There seemed to be little effort in changing the hygiene role from prevention, education, and therapeutic care to expanded function.⁶⁵

The American Dental Association's Division of Educational Measurements was the first to report on the expanded functions of dental hygienists. It issued reports in 1972, 1974, 1975, 1977, 1981 and 1985. Due to the formal educational training standards for the profession of dental hygiene, there has been an expansion in the duties as part of the dental health care delivery team. This, however, has not been true for dental assistants as they are not licensed by the State of Illinois.⁶⁶

While several states allow expanded duties for dental hygienists, they still rely on basic training and the judgment of the dentist-employer to judge the auxiliary's competence

⁶⁵Irene R. Woodall, Comprehensive Dental Hygiene Care (Missouri: The C.V. Mosby Co., 1989), 6-7.

⁶⁶Legal Provisions for Delegating Functions to Dental Assistants and Dental Hygienists, American Dental Association, Chicago, Illinois: Division of Educational Measurements Publisher (1988): i.

regarding skills. Documentation to this practice was shown in Project Rotunda, an experiment at the Forsyth Dental Center in Boston, Massachusetts. Graduate hygienists received training in the administration of local anesthesia, drilling decay from teeth, and then filling or restoring them. All was to take place under the direct supervision of a dentist. This training program was initiated by the Commission on the Survey of Dentistry of the United States. This Commission felt that hygienists were ideal for the performance of these duties due to the standards of educational programs and licensing already in place for the Dental Hygiene profession. It was at this time that males were first allowed entry into the profession of Dental Hygiene.

Project Rotunda, under the direction of Ralph R. Lobene, commenced in March of 1972 and was ended abruptly in June, 1974 by the Board of Dental Examiners in Massachusetts. The Project centered around one dentist as a central figure supervising teams of dental auxiliaries who had a wide variety of skills. Hygienists were trained to administer anesthetic locally, drill and fill teeth.

However, the Attorney General of Massachusetts stopped the program, citing the Dental Practice Act to support his decision. This Act did not expressly provide for the

delegation of traditionally accepted dental practices performed by dentists to dental hygienists.⁶⁷

It is clear that while modern technology and advancements in dental hygiene educational training programs have increased, the dental profession has resisted the performance of expanded functions by dental hygienists. For example, in Illinois, dental hygienists may not monitor nitrous oxide anesthesia, give local anesthetic, place periodontal dressings, place sutures, apply cavity liners, preform or place amalgam restorations or place silicate restorations.⁶⁸

Hygiene graduates who have learned expanded functions have not always been allowed to use them in their practice of dental health care delivery. However, there has been a trend, in the 1990s, to accept this expanded function concept. This is due, in part, to the change brought about by nationwide economic growth as well as an increased demand for dental care in the future.

Dental Assisting

In addition to the assistant being a dental helper, this individual, who has been trained in an accredited program

⁶⁷Ralph R. Lobene and Alix Kerr, The Forsyth Experiment: An Alternative System for Dental Care (Massachusetts: Harvard University Press, 1979), 15, 119.

⁶⁸Legal Provisions for Delegating Functions to Dental Assistants and Dental Hygienists, American Dental Association, Chicago, Illinois, Division of Educational Measurements Publishers (1988): 31-59.

or by the dentist in private practice, aids the dentist with clinical and/or non-clinical duties in the dental office. Her duties include preventive education for all patients, cleaning and sterilizing instruments, assisting during dental treatments, laboratory work, and radiography, in addition to administrative and clerical work. Some large dental offices will have several auxiliary personnel to perform the above duties. Smaller practices will have one dental assistant performing all of these duties.

The assistant is an important member of the dental health team as she/he greets the patients and introduces them to the dentist. Since the patient's first impression of the dental office and dental team is a lasting one, the role of the Assistant is very important. Appearance and attitude are very important and are two characteristics that cannot be taken for granted. The assistant, like the hygienist, works closely to the patient and must be conscious of her/his personal hygiene. A clean, healthy mouth is a must for this oral health educator; thus, the patients will follow her advice regarding the care of their mouths, given her/his example. Through dental education, she/he must be knowledgeable of new topics in the dental field and be able to answer questions intelligently while allaying anxiety and fear in the patient.

Attitude and personality are exhibited as she/he helps the dentist and patient in a cheerful manner. Other desired

traits are punctuality, sincerity, consideration of others, empathy and responsibility.⁶⁹

The person just described above did not always hold the position of importance she/he has had since the advent of the modern dental office. Dr. C. Edmund Kells of New Orleans was a great visionary when he hired the first dental assistant in 1887. He, like Dr. Fones, persuaded his colleagues that the assistants should be women who were hygienic and possessed special qualities. As time went by, dental offices posted signs advertising that their dental office had a "lady in attendance."⁷⁰

However, it was Juliette A. Southard, assistant to Dr. Henry Fowler, of New York City, who exhibited enthusiasm as she attempted to organize her fellow assistants into a cohesive group. On November 13, 1924, Juliette Southard became the first president of the American Dental Assistants Association.⁷¹

Southard was an unusual person for these early times in dentistry, as she motivated fifteen other women to organize an association that is still in existence seventy years later.

⁶⁹Virginia R. Park, et al., A Textbook for Dental Assistants (Philadelphia: W. B. Saunders Company, 1975), 9.

⁷⁰"Dental Auxiliary Evaluation: A Historical Perspective," Dental Assistant, vol. 53, no. 5 (September-October 1984), 19.

⁷¹Juliette A. Southard, "American Dental Assistants Association: Crystals of History," Dental Assistant, vol. 53, no. 5 (September-October 1984), 30.

The American Dental Assistants Association (ADAA) soon became synonymous with organized dental assistants whose motto stood for an Efficient and Educational Society.⁷²

Dental assistants received their training on-the job. However, this was most frustrating for Ms. Southard. She pushed for educational training for all dental assistants. Ruth Rodgers, a Chicagoan, was President of the ADAA from 1931 to 1934. She was responsible for publishing the first journal of the Association. The Dental Assistant spread the gospel nationwide stressing education for her fellow sisters in the dental field.⁷³ The third President of the ADAA, Helen Fitting, was appointed first Chairman of the Certifying Board, when it was established in 1947.⁷⁴

These early times would soon come to an end, with the one-girl dental office becoming obsolete as modern technology evolved in the delivery of health care. The high-speed drill, high-velocity, evacuation and sit-down dentistry, with the four-handed concept, were now a part of all modern dental offices by the 1950s. Through research, dentists were now looking at their practices in relationship to productivity. One report stated that one chairside assistant could increase

⁷²Darlene Eaton Nova, "Dental Auxiliary Evaluation: A Historical Perspective," The Dental Assistant, vol. 53, no. 5 (September-October 1984), 19.

⁷³"Dental Assistant Pioneers," The Dental Assistant, vol. 50, no. 1 (January-February 1981): 26.

⁷⁴"Dental Assistant Pioneers," The Dental Assistant, vol. 50, no. 27 (March-April 1981): 44.

a dentist's income by seventy-eight percent. Other reports emphasized delegation of duties to auxiliaries to reduce stress on the dentist and increase their assets.⁷⁵

With the advent of increased populations and prepaid insurance coverage for dental patients, the 1960s were the years when the Federal government took initiatives to help the dental profession. Support to increase enrollment and facilities in dental schools was funded through the Health Professionals Education Assistance Act of 1963. Three additional programs of the Federal government were implemented to encourage the dentist to utilize the auxiliary to the fullest. These programs were DAU-Dental Auxiliary Utilization Program, TEAM-Training in Expanded Auxiliary Management, and the EFDA-Expanded Function Dental Auxiliary.⁷⁶

The DAU programs were implemented in all United States Dental Schools from 1961 through 1969. Grants totaling fourteen million dollars were awarded to schools during this time frame. Dental students were trained to utilize dental auxiliaries and their clinical expanded functioning.⁷⁷ In 1970, DAU was discontinued to accommodate the broader concepts

⁷⁵"Trends in Dental Assistant Utilization: A Comparative Study," The Dental Assistant, vol. 58, no. 1 (January-February 1989).

⁷⁶Description and Documentation of the Private Practice Dental Delivery System, U.S. Department of Health and Human Services (Maryland: March 1980), 7.

⁷⁷"The Dental Auxiliary Utilization Program," JADA, vol. 76 (May 1968): 957.

of TEAM. Dental students were now being trained to work with multiple dental auxiliaries. In addition to the dental assistant, the hygienist and expanded function auxiliaries now became part of the TEAM concept. The Health Manpower Act of 1971 funded EFDA programs, whereby auxiliaries were taught clinical functions used in patient care. By 1978, approximately sixty-one EFDA programs existed with 7,000 auxiliaries in training.⁷⁸

While improved technology spurred these governmental programs on, as well as growth in the population; another important factor was dental insurance. It was a combination of these three factors that influenced the period 1970 through 1990 in the delivery of dental care.

Minimum emergency insurance coverage existed before 1940, with only fourteen prepayment dental plans in force. By 1968 and into 1970, twelve million persons possessed some type of dental insurance. By 1976, over forty-six million or twenty-two percent of the population had prepaid insurance. By 1980, the State Dental Societies instituted non-profit dental service corporations called Delta Plans. It was made up of private dentists, who through the corporation, provide the patient with dental care. The American Dental Association Council on Dental Care envisioned that over sixty million

⁷⁸Description and Documentation of the Private Practice Dental Delivery System, U.S. Department of Health and Human Services (Maryland: March 1980), 7.

Americans would possess dental insurance in one form or another.⁷⁹

Another area of dental assistant training that has been somewhat overlooked is the gender issue. Before 1940, dental assisting was uniquely a female profession. From the 1940s through the 1970s, men were trained to be dental assistants in the Armed Forces. The advent of the expanded function programs also created and encouraged men to enter the dental field as a member of the dental health team. However, this trend has waned today with more males entering dental schools.⁸⁰

At the present time, a survey taken by the American Dental Association reported the following information: over 200,000 dental assistants are actively involved in the practice of dental care in the United States as of 1993. This number will continue to grow into the year 2000 due to present shortages of trained dental assistants. The trend of employment by the general dentist is still high, despite the specialty practices that exist today. This is an interesting historical point, since early dental assistants began in general dental offices. Most dentists employ three full-time and two part-time auxiliaries presently, reflecting an excellent job opportunity. Dental assistants who complete

⁷⁹Ibid., 8.

⁸⁰William Nowell, "The Male Role in Dental Assisting:" The Dental Assistant, vol. 43, no. 2 (February 1974): 23.

formal education programs, receive higher salaries than on-the-job trained assistants.⁸¹

Now, we will examine the education issue and the influence of the American Dental Assistants Association overall.

American Dental Assistants Association and Education

The founding of the American Dental Assistant Association in 1924 by a group of dental assistants under the leadership of Juliette A. Southard was the formal beginning of educational standards and curriculum established for all dental assistants throughout the United States. From 1930 to 1943, this development expanded, with a high school diploma becoming the educational requirement for admittance into the ADAA.

The 1950s were times when the dental profession was feeling the pressures of socio-economic change. Population growth, science and technology and a trend toward prevention in dental care necessitated and demanded trained auxiliaries. In preparation for these changes, the ADAA created the Certification Board to evaluate dental assistants who were taking an approved six month extension course sponsored by the Association. In 1948, the first certification examination was offered upon completion of the six-month, 104 hour study

⁸¹"Dental Assisting Today," Select-A-National Career Program, American Dental Association and American Association of Dental Schools, 211 East Chicago Avenue, Chicago, Illinois 60611.

course. It reflected a high success rate of passage. By 1958, this course grew into a one-year program offered in an academic institution. Certified Dental Assistants were required to renew certification through continuous education by a policy set by the ADAA. The ADAA was indeed fulfilling its original goal of standardization of educational opportunities for all dental assistants.⁸²

By 1960, the American Dental Association established the Accreditation Standards for Dental Assisting Programs. Now, standardization in curriculum was stressed in the dental assisting schools throughout the United States. In 1984, there were approximately 225,000 dental assistants in the United States with 288 ADA accredited Dental Assisting Programs and 252 non-accredited programs. The Expanded Function Dental Auxiliary emerged during this era, and was previously described in this study. Dependent upon the state dental practice act in each state, the auxiliaries could be either registered, certified or licensed.⁸³

In the 1970s, a study by the Certifying Board was undertaken to examine its structure. Moral, ethical and legal issues were changing, due to societal pressure. The credential agencies were changing their educational focus from

⁸²Richard E. Richardson and Roger E. Barton, The Dental Assistant (New York: McGraw-Hill Book Company, 1978), 14.

⁸³Darlene Eaton Novak, "Dental Auxiliary Evolution: A Historical Perspective," The Dental Assistant (September-October 1984): 20.

the advancement of the profession to the protection of the public served by the dental profession. The Certifying Board could no longer remain a part of the ADAA as it had in the past. Representatives of the ADAA and dentistry recommended that a change of name and Bylaws be established. In 1980, the Dental Assisting National Board was established. It provided educators and Certified Dental Assistants an active role in policy decisions. The Board now consisted of two dental assistants of the ADAA, one certified assistant of the AADS, two dentists of the ADA, one public figure as well as three CDA's. This established six of the nine board members as assistants. It was at this point in the history of dental assistant education that autonomy had finally been reached.⁸⁴

The Commission on Dental Accreditation

Prior to 1975, the Council on Dental Education was the official accrediting agency for auxiliary programs, as well as dental ones. In 1979, authority was transferred to the Commission on Dental Accreditation. It was composed of twenty members representing the ADAA, with other representatives in dentistry and the private sector. There have been revisions of these standards four times in 1969, 1973, 1979 and 1991 to accommodate the changes in educational programs. The 1991 revisions were implemented in 1993.

⁸⁴"Position Paper of American Dental Assistants Association on Credentiability," Dental Assisting National Board, Inc., 216 E. Ontario St., Chicago, Illinois 60611 (July 17 1987): 3.

As reported earlier in this study and prior to 1960, the American Dental Assistants Association sanctioned courses ranging from the 104 hour course to a two-year program. With the new Accreditation Standards in 1960, approval of these programs included one-year programs and required on site visits by the ADAA. In 1961, there were twenty-six educational programs approved by the Commission.⁸⁵

There are twelve Standards for Accreditation, which an educational program for institution must follow: Standard One--Educational Setting. A Dental Assisting program must be established in an accredited institution which has a primary mission of providing post-secondary education.⁸⁶ Standard Two--Community Resources. The community served by the educational institution must offer adequate professional resources to support the Dental Assisting program.⁸⁷ Standard Three--Administration. The administrative structure must ensure the attainment of program goals.⁸⁸ This must be provided through development, proper staffing, and coordination and evaluation of all programs. Standard Four--Financial Support. Financial support for the program must

⁸⁵Accreditation Standards for Dental Assisting Education Programs. Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611, American Dental Association (1993): i, ii.

⁸⁶Ibid., 1.

⁸⁷Ibid., 2.

⁸⁸Ibid., 4.

ensure fulfillment of program goals.⁸⁹ Standard Five--Curriculum. Written documentation must include goals, outlines, objectives, learning experiences desired and evaluative procedures of goals.⁹⁰ Standard Six--Admissions. Specific written criteria policies and procedures are requirements for admission.⁹¹ Standard Seven--Faculty. Faculty must be qualified in subject matter regarding curriculum, methodology and function of dental assisting.⁹² Standard Eight--Facilities. Facilities and equipment must function to achieve programs objectives.⁹³ Standard Nine--Learning Resources. Libraries must provide instructional material to facilitate learning by students and aid faculty.⁹⁴ Standard Ten--Students. Establishment and implementation of policies to protect and serve students.⁹⁵ Standard Eleven--Multiple Dental Assisting Programs. Where several programs in one institution exist, each will be evaluated separately.⁹⁶ Standard Twelve--Outcome Assessment. Each program must evaluate itself for goal attainment through

⁸⁹Ibid., 5.

⁹⁰Ibid., 5-12.

⁹¹Ibid., 13.

⁹²Ibid., 15-16.

⁹³Ibid., 17-20.

⁹⁴Ibid., 21.

⁹⁵Ibid., 22.

⁹⁶Ibid., 22-23.

formal assessment.⁹⁷ In addition to the twelve standards above, Standard X--Bloodborne Infectious Diseases has been added with implementation in January, 1994. Each program must provide a curriculum whereby students are prepared to provide oral health services to patients with bloodborne infectious diseases.⁹⁸

An attempt has been made, in Chapter two, to provide an historical analysis of the linkage between dental hygienists, dental assistants, and the dental profession. The discussion in two is intended as an introduction to understand the next two chapters: Chapter three on Loyola University and Chapter four on Northwestern Universities programs for dental auxiliary education.

⁹⁷Ibid., 24.

⁹⁸Ibid., 27.

CHAPTER III

LOYOLA UNIVERSITY CHICAGO

In this section of the study, emphasis will be focused on the evolvement of Loyola's Dental School. The auxiliary programs in addition to the dental program will be described at length. They include the Dental Hygiene Program and Dental Assisting Program. Entrance requirements, curricula, goals, objectives and accreditation standards will be explored in order to achieve a deeper understanding of how dental students, dental hygienists and dental assistants are trained.

Loyola University Chicago's history extends back into the 1800s, when St. Ignatius College was founded by the Jesuit priests in 1870. The school had the distinction of surviving the Chicago Fire in 1871. In 1906, the Lake Shore Campus was established with formal classes beginning in 1909. Dumbach Hall, Cudahy Science Building, Alumni Gym, and the Jesuit Residence are original structures and are currently in use today. The Lake Shore campus for undergraduate education includes the College of Arts and Sciences, Marcella Niehoff School of Nursing, and Mundelein College of Loyola. Other buildings are the Elizabeth Cudahy Memorial Library, the Martin D'Arcy Gallery of Art, the Crown Center, Granada Centre, and Halas Sports Center which were joined by the

Madonna della Strada Chapel built in 1945. Today, forty-six buildings exist on forty-five acres along the shoreline of Lake Michigan in Rogers Park on Chicago's North Side.

The Water Tower Campus includes seven buildings close to the Chicago Water Tower. This campus is home to Undergraduate and Graduate education at Lewis Towers, Seidenburg Hall, Marquette Center, School of Law, and a Business School under construction in 1993. The Institute for Human Resources and Industrial Relations, the Erickson Institute for Child Development as well as the Campus and Law libraries can also be found here.

In 1991, the Mallinckrodt Campus in Wilmette became part of Loyola. Post-baccalaureate Paralegal Studies and English as a Second Language (ESL) for adult education are courses taught on this campus. In 1993, plans were announced for the relocation of the School of Education to the Mallinckrodt Campus. Classes will begin there in September, 1994. The Niles College of Loyola prepares seminarians as priests and church administrators for parishes and dioceses.

The Rome Center of Liberal Arts in Italy is located on five acres four miles from downtown Rome. It offers undergraduate and graduate studies in Liberal Arts, law, business, social work, Italian literature and language.

In 1969, the Medical Center Campus was developed on seventy-three acres in Maywood, Illinois. Among its forty buildings are the Stritch School of Medicine, Foster McGaw

Hospital, and the Dental School which closed in June of 1993. Its trauma center serves both Cook and DuPage counties. The burn center, cardiovascular center and neonatal care unit are enhanced by a twenty-four hour helicopter available for the critically ill or injured patient.¹ There are also seven Graduate Ph.D. programs in both the fields of medical science and nursing available for its students.

In 1993, Loyola's Undergraduate, Graduate and Professional enrollment totals approximately 15,000 students from fifty states, and seventy-four countries. This fact makes Loyola University one of the largest of all twenty-eight Jesuit Colleges and universities in the nation.² Ninety-seven percent of its 1,100 full-time faculty hold Ph.D's in their respective fields. Master's degrees are available in forty-two programs, Doctoral degrees in thirty programs, and approximately one hundred Doctoral degrees and more than 400 professional degrees awarded annually.³

Loyola University School of Dentistry, the oldest of four dental schools in Illinois, was founded on February 20, 1883 as the Chicago Dental Infirmary. Its admission policy required an M.D. degree for all those students who wanted to enter dental school. One year later in 1884, the school was

¹Loyola University Chicago Undergraduate Bulletin (1993-1995): 2.

²Loyola University Chicago. Discover Loyola (1993): 3.

³The Loyola Fact Book. Loyola University Chicago Department of Public Relations (1993): 5-10.

renamed from Chicago Dental Infirmary to Chicago College of Dental Surgery and the policy requiring a medical degree was removed. As enrollment grew from 1884 to the 1960s, the dental school moved to Maywood, Illinois in 1968. This relocation made it possible for the dental school to offer a dental assisting and dental hygiene program at one location. The assisting program was developed in 1965 while the hygiene program began for the first time at the dental school in Maywood. The four-story building made it an ideal setting to accommodate teaching, learning, and delivery of dental treatment in the clinics. A grant from the Department of Health, Education, and Welfare (HEW) in 1967 made construction of this building possible with specific recommendations from HEW. The use of closed-circuit television was installed to facilitate learning, the trimester system integrated and conference rooms located on each floor encouraged faculty-student rapport.⁴ The change from the semester system to a trimester system was recommended by HEW officials in order to accommodate specific curriculum requirements for all programs receiving federal funding. Several traditional courses were lightened while others were strengthened. Some new classes were also added to the curriculum in order to fulfill the goals of the Curriculum Committee of HEW.

⁴Liz Gondela, "Illinois Dental Schools: The Journey to the Present: Illinois Dental Journal (March-April 1989): 78.

In the 1970s, women began to apply for entrance into the dental schools. While there was only one female in the 1973 class, there were twenty by 1978. In the years 1980-81, twenty-five young women and 115 men were accepted into Loyola's Dental School. In addition to the entrance of women into the school, new equipment was obtained for a Dental Auxiliary Utilization (DAU) Clinic. This DAU Clinic would be the beginning of the concept of four-handed sit-down dentistry utilizing dental assistants.⁵ It is interesting to note that it took over fifty years for women to advance from auxiliary programs to the status of dental student. The results of a survey at a private university dental school in 1969 showed that the most important reason 123 freshman students choose dentistry as a career was their desire to help people, especially the poor.⁶ In the early 1900s, it was women who were chosen for the role of dental auxiliary because they were especially skilled at helping the patient. In the mid to late 1900s, the desire to help people has still remained a strong prerequisite for all members of the dental health team.

Another interesting historical fact was that by 1982, the dental school was mortgage-free due to the efforts of the Loyola Alumni Association. Through the Alumni Fund, special

⁵"1883-1983 A Century of Service." Loyola University School of Dentistry (1983): 24.

⁶Fredericks, Marcel A., et al., "The Student Dentist and the Poor." Journal of American College of Dentists. vol. 39, no. 2 (April 1972): 86.

bequests and hard work, this group was largely responsible for establishing their school's financial security.⁷ In spite of the financial success of Loyola's Dental School, by 1986, it became apparent that the Board of Trustees would be forced to initiate a special study to examine rising costs of the school. This was also coupled with the continuous decline in the number of qualified students applying for admission. In 1981, there were approximately 9,000 applicants applying to United States dental schools. In nine short years, it dropped to 5,000 with the average entrance class size at seventy students down from approximately one hundred students. Private dental schools in independent universities were closing, due to the high tuition rate. Tuition at public, state schools was approximately \$4,000 in comparison to Loyola's \$15,600 tuition in the 1990s. In addition, with the competition of five dental schools in close proximity--four in Illinois and one in Milwaukee--all drawing from the same student pool, it appeared that Loyola University would consider closure of its Dental School. On June 5, 1993, Loyola Dental School graduated its last class of dental students.⁸

⁷William P. Schoen, Jr., "The Modern History of Loyola University Dental School" Chicago Dental Society Review, vol. 76, no. 3 (June 1983): 23.

⁸Liz Gondela, "The Closing of Loyola University School of Dentistry." Illinois Dental Journal (July-August 1992): 241.

Dental Hygiene Program

In June, 1967, the Board of Trustees of Loyola University formally approved the Dental Hygiene Program. It was one of two programs initiated at that time. The second program was the Dental Assistant Program, which will be discussed later on in this study.

The Dental Hygiene Program began at the Loyola University School of Dentistry in Maywood, Illinois. The new Dental School, in September 1968, launched its new program in dental hygiene. It was a two-year program that emphasized training qualified dental hygienists to work in private practice. Since hygienists are licensed to work in the mouth, all curricula had to be accredited and approved by the Council on Dental Education. Coursework in basic science, dental science, clinical science, general dentistry and liberal arts were all part of the two-year program. In the second year, the program required the dental hygienist to pass the Dental Hygiene National Board Examination in addition to an examination in the particular state in which she/he wished to practice.⁹ Upon successful completion of this two-year program, the student was granted a certificate in Dental Hygiene.

In order for these dental hygiene students to perform well, strict admission requirements were followed. Completion

⁹History-Sketch-Folder. No. 2 F. 1929-81. Loyola University Elizabeth Cudahy Memorial Library. University Archives Room 219. 6525 N. Sheridan Road, Chicago, Illinois

of a four-year college preparatory high school curriculum was a must. The applicant was required to have completed three years of English and Mathematics, two years of a foreign language, and one year of both Biology and Chemistry. The Scholastic Aptitude Test (SAT) and Dental Hygiene Aptitude Test (DHAT) scores were evaluated for each applicant, a personal interview was also required. Tuition was \$1,000 plus \$350 for the purchase of instruments, books and supplies in 1968.¹⁰

CURRICULUM - Two-Year Program

FIRST YEAR: Students were expected to take basic and introductory coursework in: Anatomy, Histology and Embryology, Physiology, Chemistry, Nutrition, Pharmacology, Microbiology, Pathology, Dental Materials, Dental Anatomy, Oral Roentgenology, Periodontics, Survey of Dentistry, Prophylaxis Technique and Laboratory Technique, Clinical Dental Hygiene, as well as Fundamentals of Public Speaking and English Composition.¹¹

SECOND YEAR: More advanced coursework was required in Preventive Dentistry and Community Health, Dental Health Education, Principles of Oral Hygiene, Clinical Dental

¹⁰Loyola University School of Dentistry Catalog (1968-1969): 71-72.

¹¹Loyola University School of Dentistry Catalog (1968-1969): 74.

Hygiene, History, emphasizing Ethics, and Jurisprudence; Practice Administration, Psychology and Sociology.¹²

The two-year certificate program proved to be quite successful. The first class graduated twenty-four students who were trained in prophylaxis techniques and preventive methods. Dean Schoen knew this was just the beginning of an increased demand nationwide for the services of these dental health educators.¹³ He recognized that the dental hygienist would function in a variety of ways through the various specialties of dentistry, in addition to her/his assistance in private practice. Hygienists would have to be more versatile in the future. The new dental school, due to its new modern classrooms and clinics were finally able to meet these challenges. The dental hygiene students would have access to all Foster McGaw Hospital patients as well as Hines Veterans Administration Hospital. Foster McGaw Hospital was part of Loyola's Medical Center with the VA Hospital adjacent to this entire medical complex.¹⁴

New challenges presented themselves to Doctor Schoen, Dean of Loyola University's Dental School from 1956 to 1973.

¹²Marcel A. Fredericks, et al., "Teaching Dental Auxiliaries the Interactional Aspects of Social Concepts." Journal of Dental Education, vol. 36, no. 4 (April 1972): 37.

¹³Kiki Richman, "Loyola's Dental Hygiene Program celebrates its 20th Birthday." THE BUR. Dental Alumni Publication, vol. 92, no. 1 (Spring 1990): 10.

¹⁴Ibid., 10.

Hygiene was developed by Dean Schoen and Father Krolikowski, Dean of the College of Arts and Sciences. The Board of Undergraduate Studies, on April 30, 1969, granted approval for this joint venture of the College of Arts and Sciences and the School of Dentistry. In just one year, Loyola became the first university in Illinois to develop a baccalaureate degree program with a major in dental hygiene.¹⁵

In September, 1969, Loyola University initiated two programs in dental hygiene, known as Plan A and Plan B. Plan A was the two-year certificate program previously discussed, and Plan B was designed for graduates of an accredited two-year certificate program in dental hygiene who wished to continue their education toward a Bachelor of Science Degree in Dental Hygiene.¹⁶ Plan B required that the third and fourth years of study be devoted to coursework in the College of Arts and Sciences at Lake Shore Campus. Degree Requirements included the following courses: Prescribed Dental Hygiene Sciences, Communication Arts 101, English 101, 102, 111 and 112; Foreign Languages, History 101 and 102,

¹⁵Loyola University Inter-Office Communication. Vice-President and Dean of Faculties. Father Robert Mulligan, S. J. Records C. 1954-1976. Accession number: 81-63, 19 Archives Boxes. Box 7-3. School of Dentistry, May 1966 to July, 1975. Elizabeth Cudahy Memorial Library. University Archives, Room 219, 6525 North Sheridan Road, Chicago, Illinois.

¹⁶History-Sketch-Folder. No. 2 F. 1929-81. Loyola University Elizabeth Cudahy Memorial Library. University Archives Room 219, 6525 North Sheridan Road, Chicago, Illinois.

Philosophy 210, 211, and 212; Coursework in Natural Science and Social Science and Theology.¹⁷ A total of 136 hours were required for the Bachelor of Science Degree in Dental Hygiene.¹⁸

The objectives of the four-year liberal arts curriculum in Dental Hygiene, or Plan B, were to prepare qualified dental hygienists for other auxiliary services to the dental profession and community as well. These services included using hygienists as school instructors, public school dental health educators, or supervisors in community health clinics. The hygienist would also be able to function professionally in research, industry, hospital work, the Armed Forces and Peace Corps.¹⁹

Beginning in 1979, several track programs were available to students in their senior year through elective choices. The first track was the Dental Hygiene Internship Track in which students identified with a particular area or course and function as a teaching assistant in conjunction

¹⁷Loyola University School of Dentistry Catalog (1970-1972): 79-80. Natural science courses included General and Oral Pathology, Human Anatomy, Physiology, Oral Morphology, Histology, Physiological Chemistry, Microbiology, Nutrition, and Pharmacology. Social science courses included Psychology 101, Sociology 200, Research Design and Evaluation Methods in Dental Health Education, plus an approved elective.

¹⁸"Curriculum Dental Hygiene Educational Program." History-Sketch-Folder. No. 2 F. 1929-81. Loyola University Elizabeth Cudahy Memorial Library, University Archives Room 219, 6525 North Sheridan Road, Chicago, Illinois, 1.

¹⁹Loyola University School of Dentistry Catalog (1973-1975): 80.

with a designated faculty member. The second track was the Education Track. Interested students could enroll in coursework in the School of Education or other areas within the university. The third track was the Psychology or Sociology Track.²⁰ This track was especially interesting to students who desired to enter private practice or expand their communication skills. The fourth track was the Independent Track, whereby the student could take pre-dental science classes, business courses, or design special research projects.²¹

All dental hygiene students, whether in Plan A or Plan B, functioned along side professional and graduate students of dentistry, orthodontics, periodontics, pedodontics, oral surgery, endodontics, and prosthodontics. They also rotated among various programs within schools, hospitals, and health clinics in their school area.²²

From 1970 through 1990, more than 500 dental hygiene students graduated from the Dental Hygiene Program at Loyola's Dental School Campus in Maywood, Illinois. Their role as

²⁰Marcel A. Fredericks, et al., "Teaching Dental Auxiliaries the Interactional Aspects of Social Concepts." Journal of Dental Education, vol. 36, no. 4 (April 1972): 37.

²¹History-Sketch-Folder. No. 2 F. 1929-81. Loyola University Elizabeth Cudahy Memorial Library. University Archives Room 219, 6526 North Sheridan Road, Chicago, Illinois. Also see Loyola University Undergraduate Catalog (1979-81) 111.

²²Kiki Richman, "Loyola's Dental Hygiene Program Celebrates its 20th Birthday." THE BUR. Dental Alumni Publication, vol. 92, no. 1 (Spring 1990): 10.

members of the dental health care team had far surpassed their earlier functioning role as preventive educators in private dental offices.²³

Accreditation in Dental Hygiene Program

In 1976, Loyola University School of Dentistry's Hygiene Program was awarded full accreditation by the Commission on Dental Accreditation. In January, 1984, another site visit was made at the Dental School and Hygiene Clinic. Full accreditation was again awarded to the Dental Hygiene Program after the 1984 site visit. These site visits are performed by a special Committee of the Commission on Dental Accreditation. The Committee is comprised of a Commissioner, three dental hygiene consultants and other staff representatives. After the visits, a report is presented to the school citing its strengths and weaknesses. The following is a report of the Committee using its ten standards of Accreditation.

Standard 1 - Educational Setting

The Committee noted that the Dental Hygiene Education Program of Loyola University of Chicago was located within the university dental school setting which was a private not-for profit institution. The dental hygiene programs were designed to prepare students for full preventive dentistry as they acquired professional skills and knowledge toward the role of

²³Ibid., 10.

health educator. The institution met the accreditation requirements concerning the educational setting. Since the first class of 1968 until the last class in 1993, the Dental Hygiene Program as well as the School of Dentistry had maintained full accreditation by the Council on Dental Education of the American Dental Association. The University was also accredited by the North Central Association of Colleges.

Standard 2 - Community Resources

The Committee observed that the Dental Hygiene Education Program had a direct working relationship with the Department of Hospital Dentistry, Foster G. McGaw Hospital, and Loyola University School of Dentistry. Students had the opportunity to work with medically compromised, mentally and physically handicapped patients in a private practice setting. All students were supervised by dental residents, medical and dental specialists.

Standard 3 - Administration

The Committee reported that the Dental Hygiene Program was under the jurisdiction of the College of Arts and Sciences since students might pursue the Bachelor of Science in Dental Hygiene from Loyola University. The Dental Hygiene Department reported to the Dean of Natural Sciences as well as to the Dean of the College of Arts and Sciences. All curricular and administrative matters of the program were governed under the

structure of the Dental School. All curricular modifications had to have the approval of the College of Arts and Sciences. The faculty served on the Curriculum, Executive, and Dental Hygiene Admissions Committees as well as the Faculty Council.

In 1982, the Dental School began a Recall Program whereby patients were reminded of their appointments for prophylaxis and examinations. Each month, as many as 400 recall cards were sent out to patients requesting their response for an appointment. Over 3,000 patients had responded to the new Recall Program, requiring additional phone lines and additional secretaries to handle the response.

Standard 4 - Financial Support

According to the Committee, the Commission expected Loyola University to maintain financial support to meet the objectives of its programs. Approximately seventeen percent of funding came from State support, with seventy-five percent from tuition. The remaining eight percent came from other sources such as: the Dental Hygiene Clinic reserve or donations.

Standard 5 - Curriculum

The Committee reported that all new patients received full mouth radiographs as a policy set by the Radiology and Oral Diagnosis Departments. Medical Histories were compiled on all patients and an oral inspection was standard practice. Prophylaxis and Fluoride treatments were administered by the

hygiene students to the patients in the clinics. Students had to pass dental hygiene courses with a grade of "C" or better.

All academic performance was monitored by the instructors. There was no formal program for high achievers; however, some students were allowed to do research in specific areas or help other students who were having learning problems. Curricular changes made since 1984 were in Instrumentation Theory and Oral Morphology. Greater emphasis was placed in these two areas, which raised National Examination scores.

Standard 6 - Admissions

Admission requirements stipulated that the applicant must be a graduate of an accredited high school with coursework in English (four years), Mathematics (two years), and one year each of Chemistry and Biology. The ACT or SAT and DHAT scores were considered. One year of study in an accredited college or university was required for admission into Loyola's hygiene program. Three letters of recommendations and personal interviews were all part of the admissions procedure. Loyola's enrollment, which allowed for the accommodation of forty students, had revealed two trends that remained constant since the last accreditation in 1976: the number of qualified applicants and the total academic performance of the students had dropped from the number and performance in the past. These trends had been occurring throughout the United States and were not particular to the hygiene program at Loyola. As of the report of 1984, the

Dental Hygiene Program's applicant pool had been adequate despite the decrease in applicants nationwide.

Standard 7 - Faculty

At the time of this accreditation report, 1984, there were five full-time and eight part-time faculty members in the program. In the 1982-1983 time period, five full-time and seven part-time faculty were employed. Salaries for part-time faculty were \$1,575 for a nine month contract. Full-time salaries differed from part-time members in that they were evaluated according to their title, work experience, special competence, educational background, etc. The dental hygiene faculty taught on a four-day week schedule with one day for personal development. This schedule coincided with that of the Dental School faculty.

Standard 8 - Facilities

There were three automatic radiology machines in the radiology clinic. A dark room was available for processing of x-rays. There was ample space and radiography machines to accommodate all dental hygiene students. Additional teaching space and another dark room facility had been requested to facilitate the patient flow when the clinics were the busiest, but there was no institutional response at the time of the report of 1984. There were five laboratory facilities for dental hygiene clinical coursework. Classrooms were not

assigned to students of the hygiene program exclusively, but were shared with the dental students.

The design of the facility incorporated broadly spaced units which lent itself to a most efficient flow of traffic for students, faculty, and patients. The dental hygiene clinic was composed of thirty functional unit areas.

Standard 9 - Learning Resources

The Committee reported on the availability of learning resources. Loyola University Medical Center library contained both medical and dental literature. A separate collection of dental hygiene books and periodicals were maintained in the Dental Hygiene department. The Medical Center Library had over 1,600 periodicals and over 65,000 books available for student and faculty use.

Standard 10 - Students

In addition to completing coursework in the dental hygiene curriculum, students had various responsibilities in the clinics. Clinic coordinators were responsible for dispensing instruments, and supplies and maintaining sterilization and cleanliness. Dental hygiene students were responsible for taking medical and dental histories on all patients, and cleaning, scaling, and polishing teeth and taking and developing x-rays. Other duties included charting the mouth, tooth by tooth, for work that was necessary to be completed. Any observations about the oral cavity, in

general, was to be recorded on the patient's record. All clinic patients were then placed on the Recall System. At intervals designated by the hygienist and faculty, the patients were notified when it was time for them to return for periodical checkups.

Various groups of students were responsible for visiting assigned elementary and secondary schools to provide dental health education to these students.²⁴

The Dental Hygiene Program, in spite of its fine enrollment record and accreditation ratings over the years, had to close its program when the Dental School phased out its dental curriculum and officials closed Loyola Dental School in June, 1993. Thirty-three dental hygienists were in the last graduation class. While the Dental Hygiene Program continued to attract well-qualified applicants into the program, the Dental School was struggling to keep the annual deficit down. By 1992, the deficit rose to approximately four million dollars. Dental School applicants at Loyola University during this period had lower grade point averages and National Board performance. This combination of rising deficits plus students of lower aptitude applying necessitated Loyola's Dental School to close.

²⁴Manual for the Self-analysis and Evaluation of a Dental Hygiene Program. Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611 (January 1984).

Dental Assisting Program

Loyola's Dental Assistant Program consisted of one academic year of coursework that led to a certificate in Dental Assisting. Students were taught through a multi-varied set of courses as well as clinical practice. The dental assistant worked with the dental students in Loyola's Dental School clinic.

In 1960, the House of Delegates of the American Dental Association approved of educational programs for dental assistants. It was also their responsibility to establish requirements for these programs, as well as evaluating them according to the criteria of the Council on Dental Education. While forty-nine accredited Dental Assistant Programs existed nationwide, there were only three such programs in the Chicago area. It was with this information at hand that Dean Schoen and Father Robert Mulligan began to see the need for the educational program of dental assisting at Loyola University.²⁵ The existent programs were most inadequate for producing trained dental assistants in the quantity needed for anticipated future needs. The dental profession was, at this time, demanding a highly trained auxiliary who could

²⁵Loyola University Inter-Office Communication. Vice-President and Dean of Faculties. Father Robert Mulligan. S. J. Records C. 1954-1976. Accession No. 81-63, Box 7-3 School of Dentistry. Elizabeth Cudahy Memorial Library, University Archives Room 219, 6525 North Sheridan Road, Chicago, Illinois.

assist with the new technology developing in the late 1950s and 1960s.

It was in 1965 that Loyola University began its pilot program for dental assistants with "preliminary provisional approval" granted by the Council on Dental Education.²⁶ The following requirements and policies were authorized by the Council on Dental Education, the American Dental Association and Loyola University. A high school diploma and an aptitude test were required of all applicants. The academic year lasted nine months. The school year would begin in September, with limited space available for only six students per year. Tuition was set at \$300 per semester. Coursework would be offered at the Dental School; however, clinical training would occur in the Dental Clinic Facilities of the Chicago Old Town Boys Club. The dental assistant students would work with dental students at the clinic facility. The teachers were dental school faculty; as well as special lecturers, who were also members of the Chicago Dental Assistants Association.²⁷

The curriculum, covering 360 hours in a nine-month period, consisted of the following courses in the first semester: Anatomy and Physiology, Microbiology, Oral Pathology, Pharmacology, Nutrition, Dental Materials, X-rays, Ethics and Jurisprudence, Prevention and Sterilization. The second half of the nine-month program included clinical

²⁶Ibid., 2.

²⁷Ibid., 3.

experience, English, Office Procedures and Patient Management.²⁸

The Dental Hygiene Program as well as the Dental Assisting Program was incorporated into the new dental school, located at the Medical Center in 1968. The Dental Assisting Program became fully accredited in its new facility, within the dental school.²⁹ The only changes from previous years was an increase in tuition from \$300 to \$600 for the one-year program, as well as the prerequisite of one year of biology in high school for all applicants.³⁰

In 1973, students completing the certificate program were eligible to take the Certification Examination administered by the Certifying Board of the American Dental Assistants Association.³¹ The Assisting Program would exist for another seven years before it was closed in 1980 due to students opting to attend community college programs that were more accessible and lower in cost.

ACCREDITATION IN DENTAL ASSISTING PROGRAM

Loyola University's Dental Assisting Program had enjoyed full accreditation since it began at the School of

²⁸Ibid., 6-8.

²⁹Loyola University School of Dentistry Catalog (1968-1969): 75

³⁰Loyola University School of Dentistry Catalog (1970-1972): 81.

³¹Loyola University School of Dentistry Catalog (1973-1975): 88.

Dentistry in 1968. The following information was recorded when the program was evaluated in 1976 in the Accreditation and Site Visit by the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs under the auspices of the American Dental Association.

Standard 1 - Educational Setting

The Dental Assisting Program was evaluated and accredited by the ADA Council on Dental Education in October, 1969. It received North Central Association approval in 1975. Its first class began in 1967 with "provisional approval"; only to obtain full accreditation upon moving to a broad new facility within the Dental School. The program granted a Certificate of Dental Assisting upon graduation.

The major objective of Loyola's Dental Assisting Program was to train health professionals to work in both private practice as well as the community at large.

Standard 2 - Administration

The administrative structure of the Dental Assisting Program came under the jurisdiction of the Dean of the Dental School and the Associate Dean. All dental school specialty departments were supervised by these two people. The dental auxiliary programs, such as dental hygiene and dental assisting programs, were part of the Specialty Department of Preventive Dentistry and Community Health. The administrators were responsible for all operations on a daily basis:

Curriculum development with faculty, preparation of the budget, class schedule, recruitment and selection of faculty, admission, committee service, students' counseling, scheduling of Certification Examinations for students and with organization of In-Service programs for faculty. The administrator also inspected extramural progress of students involved in them. Total evaluation of all components of the program was their domain.

Standard 3 - Financial Information

State grants received in 1976 totaled \$37,000 or 43.3 percent of the total budget. Student tuition and fees was \$48,371.00 or 56.7 percent of the total budget. Student tuition was \$1,320 per student with additional fees totaling \$1,658. Approximately seventy-five percent of all dental assisting students obtained financial aid through loans or scholarships.

Standard 4 - Faculty

According to the accreditation report, faculty did not hold a rank or special appointment; therefore, salaries were earned through merit, professional ability and length of employment at Loyola. Full-time faculty worked twelve months of the year. They put in a forty-hour week. The Dental Assisting Program employed only a full-time teaching staff. In 1976, there were five full-time members of the teaching staff.

Standard 5 - Admissions

Applicants were required to have an above average high school academic record, one year of Biology, and satisfactory ACT and/or SAT scores. All applicants were interviewed by the admissions committees. In June, 1976, thirty-five students were accepted to the program, which had space available for a maximum of forty students per year.

Standard 6 - Curriculum

Curriculum objectives were designed to prepare students both academically and clinically. The first term included coursework in Dental Materials, Pre-Clinical Science, English Composition, Dental Anatomy and Introductory Dental Assisting. The second term consisted of courses in Radiology, Office Management, Communications and Clinical Procedures. A five-week summer session included additional electives required in the program.

Clinical work was facilitated in the Dental School clinic. Dental assisting students, in their last semester, worked with Junior and Senior dental students. These students rotated through each Specialty Department. Extramural opportunities were provided for all students, in their last semester, in private dental offices. The student visited two dental practices for five-week intervals, two days per week.

Standard 7 - Achievement Standards

Students having difficulty with the program were placed on academic probation by the Promotions committee. A "C" average was required of all students for all coursework. Students who did not show the committee that they were proficient in the skills necessary to interact and motivate patients were placed on probation and assigned an academic advisor. Students were evaluated routinely with promotion or dismissal a reality in the program.

Standard 8 - Library

The Dental Assisting Program, as well as the Dental Hygiene Program, shared in the usage of the Loyola Medical Center Library. Medical and Dental students, faculty and alumni had library privileges. This description was explained in the section on the dental hygiene program earlier in this chapter.

Standard 9 - Instructional Equipment

Instructional equipment was available through the Audio-Visual Department. Slides, films and tapes were provided by two full-time employees. Special learning films were available to teach certain concepts in dental assisting: such as Instrumentation, Rubber Dam placement or Vacuum proficiency. Closed circuit television was used on a daily basis for the Assisting Program, Hygiene and Dental Programs.

Standard 10 - Facilities

There were 286 operatories used for the Dental Assisting Program; and fourteen radiology rooms. The laboratory stations were separated into 428 labs; of which there were 280 techniques labs and 148 sit-down labs. There were six classrooms used for dental assistants and four faculty offices. Private lockers, fifty in all, were available for the students for placement of personal goods, while attending classes.³²

As one can see, Loyola's dental auxiliary programs had flourished from 1970 through 1990. The Dental Hygiene and Dental Assisting Programs have made a major contribution to both the dental profession and society. Dental students of the 1970s and 1980s had more educational material to digest than those in the earlier years. This fact was also true for dental assistants and dental hygienists. Hygiene's Plan B offered coursework toward the Bachelor of Science in Dental Hygiene following the trend toward a more highly trained auxiliary, prepared to meet the educational and clinical challenges of the 1990s. As reported earlier in this chapter, the Dental Hygiene Program at Loyola Dental School was a very strong program that continued to attract well-qualified applicants in suitable numbers to remain open. The closure of the Dental School, due to increasing deficits and poorly

³²Commission on Accreditation of Dental and Dental Auxiliary Educational Programs Manual. American Dental Association (1976).

qualified applicants, necessitated an end of a long tradition of quality health care provided to the dental community by Loyola's dental students and auxiliaries.

In 1970, there were fifty-three dental schools in the United States, which graduated 3,749 dentists. In 1980, the number of schools rose to sixty with 5,256 graduates. By 1990, it dropped to fifty-eight schools with 4,233 graduates. These figures tell us that the field of dentistry had remained constant for this twenty year period.³³

In 1990, approximately ninety percent of all dentists nationwide employed a full or part-time auxiliary staff. Over fifty percent of the dental profession employed one or more full or part-time Assistants.³⁴ These nationwide trends showed that the entry of auxiliary personnel into the field of dentistry may have changed from year to year. However, the need for dental auxiliary educational programs such as the one found at Loyola University Dental School, would be necessary if the profession wished to prepare for the next century.

Chapter four will focus on another Chicago area Dental School: Northwestern University Dental School.

³³The 1990 Survey of Dental Practice. The Bureau of Economic and Behavioral Research. American Dental Association. Chicago, Illinois.

³⁴Ibid., 4-5.

CHAPTER IV

NORTHWESTERN UNIVERSITY

Northwestern University traces its beginnings to the mid 1800s, approximately one hundred and forty-three years ago. In 1851, John Evans, a physician and researcher, became one of its most prominent founders as they pursued their dreams of creating a superior educational institution. The area to be served by this first-class university was the original Northwest Territory; made up of Wisconsin, Indiana, Ohio, Michigan, Minnesota in part, and Illinois. The original charter was drafted in a private office at Lake and Dearborn streets in Chicago. This charter was drafted without a school, campus, teachers or students and with a budget of \$9.62.¹

Before long, farmland near the edge of a swamp close to Lake Michigan, 379 acres in all, was purchased just twelve miles from Chicago. The town of Evanston grew as the University developed. In 1855, Northwestern University, an independent institution, enrolled ten male students. Its faculty, two in all, would make history since the school was

¹Northwestern University Undergraduate Catalog, vol. xvi, no. 2 (1993-1995): 2.

the first educational institution in northeastern Illinois to grant a degree upon completion of coursework.²

This first building became known as Northwestern's College of Liberal Arts and was located in Evanston, Illinois. Evanston was the site chosen due to its location along Lake Michigan and close access, only twelve miles, to Chicago. This was important in the early days since it was part of frontier country. It derived its name from one of the founding members, John Evans, a researcher as well as a prominent physician. He held a position as teacher at Rush Medical College in addition to his founding of the Illinois Medical Society and Indiana Mental Hospital. John Evans, after founding Northwestern University, became governor of Colorado, and established the University of Denver there. He was also a great railroad and real estate magnate in his later years, 1870 to 1897, the year that he died. His contributions to medicine, education and leadership in the Chicago area will be long remembered.³

In the 1800s, colleges often merged with larger institutions in order to attract quality faculty and remain economically secure. In 1873, Evanston College of Women merged with Northwestern University establishing Northwestern

²Harold F. Williamson and Payson S. Wild., Northwestern University A History: 1850-1975. Evanston, Illinois (1976): 1.

³Northwestern University Undergraduate Catalog, vol. xvi, no. 2 (1993-1995): 2.

as a pioneer in the education of women as well as securing the future of the College.⁴ In the next twenty-five years, six undergraduate and graduate schools would be added to its first undergraduate liberal arts college. By 1900, its graduate professional schools would include Medicine, Law and Dentistry. The Evanston campus grew to approximately 700 acres, in addition to its existent professional schools in the Chicago area. The Medical and Law Schools were established in 1859. In 1887, the Dental School came into existence at the Chicago campus. Enormous growth resulted in student enrollment rising to 2,700 with a budget of over \$200,000 by 1900.⁵

By 1910, Northwestern had developed its Graduate School. Graduate and Undergraduate instruction was provided through the German model which emphasized research and teaching.⁶ This feature would be instrumental in making Northwestern a prominent University. It required every faculty member to do research and teach both undergraduate and graduate students.⁷

At the present time, the Graduate School offers educational programs on both the Evanston and Chicago

⁴Ibid., 2.

⁵Northwestern University FACTS booklet (1993).

⁶Northwestern University Undergraduate Catalog, vol. xvi, no. 2 (1993-1995): 3.

⁷Ibid., 3.

campuses. More than 800 faculty members teach and do research; some faculty have been recognized nationally and internationally. The School offers the following degrees: Masters of Arts, Master of Fine Arts, Master of Science, and Doctor of Philosophy. The statutes of the university demand strict supervision over all programs leading to these degrees. Some exceptions to this rule are degrees granted in the schools of Medicine, Dentistry, Journalism, Management, Music, Speech and Education and Social Policy.⁸ These Schools have autonomy over all of their programs. Research conducted by the faculty and students was funded by the university through grants, corporate and foundation bequests, and personal endowments.

The J. L. Kellogg Graduate School of Management received a "number one" rating in 1988, 1990, and 1992 by BUSINESS WEEK. The Media Center of Columbia University rated the Medill School of Journalism "number one" in a recent survey. Northwestern University also holds membership in the Association of American Universities, which includes twenty-eight private and twenty-eight public universities that have distinguished themselves through research and fine graduate programs.⁹

⁸The Graduate School Bulletin (1993-1995): 11-12.

⁹Northwestern University Undergraduate Catalog, vol. xvi, no. 2 (1993-1995): 3.

The Evanston Campus, adjacent to Lake Michigan is approximately twelve miles north of downtown Chicago. Since the 1964 lakefill project, the campus added eighty-four acres totaling 239 acres of university space. In 1993, approximately 11,000 full-time students attended the College of Arts and Sciences, School of Education, School of Engineering and Applied Science, Schools of Speech, Journalism, Music as well as the J. L. Kellogg School of Management and the Graduate School.¹⁰

The Chicago campus is located along Lake Michigan and in close proximity to Michigan Avenue's prestigious "Magnificent Mile." There are approximately 2,100 full-time students at the Medical, Dental, Law and Graduate School. An evening part-time program in University College, Kellogg's Management Program and the continuing education programs all comprise the Chicago campus on twenty acres. The McGaw Medical Center of Northwestern University, including several hospitals, are included at this campus.¹¹

Northwestern's libraries have been ranked "tenth" among private university libraries in the United States, with more than three million books, approximately 37,000 periodicals as well as over two million microfilm discs. Its special collections include the Dental School Library and American Bar

¹⁰Northwestern University FACTS (1993).

¹¹Ibid.

Association Archives, Transportation and African Studies Libraries.¹²

Northwestern University has seventeen varsity teams with scholarships available to students who compete. In addition to its charter membership in the Big Ten Conference, it is also the only private school in the Big Ten. In 1992, Northwestern had five teams finishing at the top one-third in Conference competition: three included women's teams.

There are over 100,000 active alumni supporting the activities at the university. In 1993, a recent financial and economic survey ranked the university ninth in its educational success for producing the leading businessmen in the nation. Its alumni have become famous in theater, business, academic and as CEOs of large corporations according to the Fortune 500 magazine report in 1990.¹³

Northwestern University Dental School

The founding of the Dental Department of Northwestern University took place in 1887. Eight private citizens took the initiative to establish the private school under the name of University Dental College. They were Greene Vardiman Black, Thomas L. Gilmen, W. V. Ames, George Cushing, Edmund Noyes, Edgar D. Swain, Arthur Freeman and Arthur E. Matteson. Its first dental class consisted of six pupils who received

¹²Ibid.

¹³Ibid.

educational and clinical training in a two-floor structure at Indiana and 22nd Street in Chicago. In four years, 1891, University Dental College was reorganized and renamed Northwestern University Dental School, officially becoming a part of the University.

One of its founding members, Dr. Greene Vardiman Black, from Jacksonville, Illinois, traveled four out of seven days per week to teach in the new dental school. He, and the other founders established the first three-year dental program at Northwestern. It was the first school in the United States to set curriculum criteria for dental schools to a three-year formal program. This pioneer program would become the official curriculum for all dental programs as dentistry became standardized under the jurisdiction of the National Association of Dental Faculties.¹⁴ The new dental students were taking coursework in Anatomy, Physiology, Chemistry and Materia Medica as soon as they were admitted to the Dental School.

The years 1893 through 1926 marked considerable expansion and progress at the Dental School. The Dental School and Medical School shared facilities at Dearborn Street near 24th Street for three years. By 1896, two floors were needed to accommodate all dental students, so another move

¹⁴Liz Gondela, "Illinois Dental Schools: The Journey to the Present." Illinois Dental Journal, vol. 58, no. 2 (March-April 1989): 79.

became necessary; to Madison and Franklin Streets. In 1902, the Lake and Dearborn Street facility, containing two large floors, was obtained. Its merger with the American College of Dental Surgery in 1896 necessitated a move to the Tremont Hotel on Lake Street where it was located in Chicago until 1926. Enrollment expanded to 600 students at that time.¹⁵

Due to the generous gift of three million dollars by Mrs. Montgomery Ward, the Ward Building was erected with the dental school occupying six floors of the Gothic nineteen-floor building.¹⁶ In 1978, the growth of the dental school required an additional clinical educational facility. The Dental School clinics moved into the new Northwestern Health Sciences Building. Seventeen million dollars, acquired through private funds once again, produced a beautiful modern dental facility for Northwestern University Dental School. It was located across the street from the Ward Building on Huron Street.

In keeping with Northwestern's Mission Statement for its dental school to attract students desirous of leadership roles in dentistry, to promote excellence in service and care to all patients, to contribute to the advancement of the dental profession through research; founder Dr. G. V. Black

¹⁵Northwestern University Dental School. The Bridge. "A Century of Progress. (Summer 1991): 4.

¹⁶"Northwestern University Dental School." Illinois Dental Journal, vol. 49, no. 1 (January-February 1980): 61.

emphasized the pledge for all professionals was to be the pursuit of continued education.¹⁷

In order for this to become operationalized, the Dental School developed a Dental Hygiene Program in 1922 as well as a special clinic especially for children and a new Department of Orthodontics. The pedodontic clinic was the first of its kind in a dental school. The Index to Dental Literature was developed establishing the first formal system of classifying dental publications to facilitate research. Today, the American Dental Association has incorporated it into its classification system. This great accomplishment was the work of Dr. Arthur Black, Dean of the Dental School in 1917. It expanded faculty research as well as making Northwestern a leader in dental research at that time. In 1922, Northwestern became the first dental school in the nation to begin a Graduate program leading to a Masters of Science Degree. Today, its Dental School is ranked by the American Dental Association as being among the nation's top fifteen dental facilities who are recipients of federal funding for dental research.¹⁸

From the 1920s through the 1970s, the Dental School shared the facility in the Ward Building with the Medical

¹⁷Northwestern University Dental School. The Bridge (Summer 1991): 2.

¹⁸Liz Gondela, "Illinois Dental Schools: The Journey to the Present." Illinois Dental Journal, vol. 58, no. 2 (March-April 1989): 80.

School. In 1978, the Health Sciences Building became the home of both the Medical and Dental Schools once again. This joint relationship flourished as the Chicago campus became the center for the Nursing and Law programs, Kellogg Graduate Management Program, University College's part-time classes as well as three of five hospitals in the Foster McGaw Medical Center: Northwestern Memorial Hospital, the Rehabilitation Institute of Chicago, and the Veterans Administration Lakeside Hospital. The other two off-campus hospitals affiliated with the McGaw Center are Children's Memorial Hospital and Evanston Hospital.

In the years 1940 through 1950, in keeping with its research policies, Northwestern began to attract students from many foreign countries. Dental students from Northwestern, at the present time, practice in all states nationwide as well as in forty-four countries.¹⁹

Dental Library

Northwestern University's library services include the main library in the Montgomery Ward Building and the Satellite Dental Library in the Health Sciences Building, a non-circulating one. Reserve books and important periodicals including board examination files and sixty-three important dental journals are stored there on microform.²⁰ The library

¹⁹Ibid., 81.

²⁰Ibid., 81.

holdings in the Ward Building house over 60,000 volumes making it one of the largest collections of dental works in the world. Students, faculty, researchers, and alumni, as well as dental professionals from all over the world have access to its 40,000 or more books on a daily basis. Its enormous volume collection; totaling more than 60,000 to date, are classified in the Black and National Library of Medicine classifications, dating from 1915 to the present time. The first dental journals, from 1839, are also found here. There are 17,000 pamphlets, 2,500 photographs, hundreds of manuscripts, slides and tapes that total more than 5,000 articles to date.²¹

In addition to a complete audiovisual department, a TWX terminal is available. This on-line search service accesses major databases for its users in the life, social and physical sciences and the field of education, economics, business and news media. LUIS is also available through a second terminal making the entire library holdings available to all who use it.²²

Early masterpiece literature, a very rare collection, totals more than 1,000 volumes in the English language and ten other languages. Governmental grants have guaranteed the

²¹Northwestern University Dental School Bulletin (1990-1992): 8.

²²Ibid., 8.

continuous listing of the collection and any restoration needed.

Students of Dentistry and Dental Hygiene have also been allowed to use the Law and Medical libraries at Northwestern as well as the University College library located on the Chicago campus. All in all, the holdings on both campuses in Evanston and Chicago total 3,270,000 volumes, 1,753,000 microforms, and 32,300 journals and publications.²³

Curriculum and Admission

Admission policy to the Dental School requires sixty semester hours of college credit or three to four years of pre-dental study in an undergraduate program. Success on the Dental Admissions Test (DAT) is evaluated by the admissions committee and interviews advised. Each freshman student must have a hepatitis vaccination before acceptance. The sixty semester hours must include at least one year in the following subjects: English, Zoology or Biology and Botany, Organic Chemistry, Inorganic Chemistry, and Physics; with all science courses having a laboratory as a requirement.

The dental program is a four-year course leading to the degree of Doctor of Dental Surgery. Postgraduate programs include the degree of Master of Science, special clinical subjects as well as degree and certificate programs for dental

²³Ibid., 9.

hygienists. The academic year contains three trimesters, inclusive of the summer months.²⁴

Upon completion of the second year of dental school, the student must pass the National Dental Board Examination taken in two parts: Part I in the second year, Part II in the fourth year. These examinations must be taken in the state in which the dentist wishes to be licensed to practice.

In 1965, the Medical and Dental Science Departments decided to merge as part of a plan to maintain high accreditation standards. This was accomplished through the efforts of Dean George W. Teuscher of the Dental School and Dean Richard H. Young of the Medical School. In 1968, a visit by the Accreditation Commission of the American Dental Association suggested a renovation of both clinics--Medical and Dental--as well as an in-depth curriculum survey in order to continue its high accreditation rating. It was at this time, 1972, that Northwestern Dental School installed its seventh and present Dean of the Dental School, Dr. Norman H. Olsen.

Dean Olsen took immediate measures to ensure full accreditation from the 1970s through the 1990s. In addition to rehiring former distinguished faculty and planning the new Health Sciences Building, in 1978 he developed the Outreach Program and the Peoples Clinic. In the Outreach Program, elderly patients were treated by dental students in the

²⁴Ibid., 10.

clinics while the underprivileged were treated by students and faculty volunteers in the Peoples Clinic. The Health Sciences Building became home to the Dental School, Northwestern Memorial Hospital and the Cancer Research Institute.²⁵

Curriculum changes during this twenty year period (1970-1990) necessitated a continuous four-year curriculum including summers. Northwestern was the first dental school to implement this innovation.²⁶ The continuous four-year curriculum, including summer sessions, began in the new dental clinic. A restructuring of the academic calendar allowed for early enrollment as well as early graduation. These innovative changes were necessary in order to enhance career opportunities for new students. The old dental school facility was unable to accommodate the changes of the 1980s.²⁷

In the late 1980s, the Ph.D. Oral Pathology Program was reorganized with an additional new program, the Master's Program in General Dentistry, added in 1986. That year, a Program in Geriatric Dentistry was added through the Medical Center's Aging Fellowship Program for dentists as well as physicians.²⁸

²⁵Northwestern University Dental School. The Bridge (Summer 1991): 8.

²⁶Ibid., 8.

²⁷Ibid., 9.

²⁸Ibid., 9.

Dental Assisting Program

Dental Auxiliary Programs at the Dental School of Northwestern University evolved in the 1920s. On Tuesday, October 3, 1922, programs for Dental Assistants, Dental Hygienists and Dental Mechanics began. Dr. G. V. Black's son, Arthur D. Black, Dean of the Dental School, pursued his father's wish for establishing programs for auxiliary education. He felt it was vital to the profession to work with trained personnel in the dental office. In 1922, the Dental School established a children's clinic where dental assistants and dental hygienists could teach preventive oral education to the young. It was estimated that approximately ten thousand children would receive prophylactic services through this clinic.

Admission into this early dental assisting program required two years of high school, with admission restricted to women only. The program consisted of two semesters. Students studied Dental Anatomy, Chemistry, Materia Medica, Asepsis and Surgical Assistance, Office Routine and Management as well as Operative Assistance. The second semester included Anesthesia, Bacteriology, Radiology, Oral Hygiene, Anatomy and Physiology, Mouth Examination, Office Procedures, Ethics and Prosthetic Assistance. All of the above subjects in both semesters included laboratory experience for all dental

assistant students. Tuition was \$260.00 per year for this early training.²⁹

The Dental Assisting Program continued until 1948 when it was phased out, leaving only the Dental Hygiene Program intact. Women were now enrolling in Dental Hygiene Programs or seeking other career opportunities available to them in the 1950s.

Dental Hygiene

The first Dental Hygiene Program in the state of Illinois was established at Northwestern University Dental School in 1922.³⁰ It was established in conjunction with the Dental Assistants Program. The children's clinic would provide training in preventive educational techniques, enabling these new auxiliaries to teach mouth hygiene in schools, state institutions and industrial ones, as well. It granted a certificate upon completion of a one-year curriculum. Admission required all applicants to be women who had graduated from high school.

The first semester included coursework as well as laboratory study in Dental Anatomy, Oral Prophylaxis, Chemistry, Materia Medica, Asepsis and Surgical Assistance, Public Speaking and Social Service. The second semester

²⁹Northwestern University Dental School Bulletin (1920-1929).

³⁰Northwestern University Dental Hygiene Bulletin (1988-1990): 4.

consisted of courses in General Hygiene, Anesthesia, Bacteriology, Radiology, Oral Pathology, Anatomy and Physiology, Oral Hygiene, Ethics and Dietetics.³¹

In 1939, Dental Hygiene education grew into a two-year program granting a diploma in Dental Hygiene. During the period from 1970 to 1990, the program was expanded to offer an eight-trimester Baccalaureate Degree in only three years.³² While the traditional eight-semester program over four years was successful, students could receive the Bachelor of Science in Dental Hygiene Degree in either the three year or four year program.

Another Bachelor Degree Program available was the Bachelor of Science in General Studies. After the two-year hygiene program, students enrolled in University College on the Chicago campus in order to complete their credits towards this degree. The Bachelor of Science in Health Education was possible after completion of the two-year hygiene program. Students were required to enroll in the School of Education and Social Policy located on the Evanston campus. Completion of this program led to the granting of a teacher's certificate by the state of Illinois. The Bachelor of Arts degree could be obtained after the two-year certificate program with

³¹Northwestern University Dental School Bulletin (1920-1929).

³²Northwestern University Dental Hygiene Bulletin (1988-1990): 4.

admission into the College of Arts and Sciences on the Evanston campus.³³

Admissions

A high school diploma or a GED certificate was required of all applicants. SAT or ACT test scores as well as the Dental Hygiene Admissions Test score was required. One year of General Biology and Basic Algebra was required. General Chemistry was highly recommended as a prerequisite but not a requirement of incoming students. Like the dental school applicants, all entering hygiene students were required to receive hepatitis vaccines.³⁴

Curriculum

Northwestern's Dental Hygiene Program was an approved educational curriculum sanctioned by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs. The dental school is part of a national organization; therefore, its hygiene programs required preparation that enabled dental hygienists to relocate anywhere in the United States. As stated earlier in this study, every hygienist, as well as all dentists, must pass state board examinations in the state of their residence for licensure. Therefore, dental hygiene curriculums had to provide subjects that covered material to meet a variety of

³³Ibid., 7.

³⁴Ibid., 9.

educational, community, and institutional requirements. The years 1970 through the 1990s have been an example of this with the challenge of expanded function for dental hygienists as well as all auxiliary personnel.

Teaching Facilities

In 1978, with the establishment of a new clinical facility in the Health Sciences Building, directly across the street from the existing dental school in the Ward Building, the Dental Hygienist Program became part of this modern \$17 million structure.

It was an ideal setting for the Dental Hygiene Department with its facilities easily accommodating clinical, educational, and laboratory instruction. Additional clinical experience was provided by the McGaw Medical Center of Northwestern University. The part-time dental instructors within the older dental facility were replaced with a different type of teacher in the newer building. The private office and new research areas easily accommodated the full-time career oriented instructors that replaced the voluntary services of the past.

Ultra-speed air turbine dental drills, operating at 350,000 revolutions per minute, replaced older belt-driven handpieces so popular prior to the 1970s. New contour dental chairs replaced older obsolete chairs and cuspidors. Approximately 150,000 patients could be handled within 300 dental operatories. Elevators and escalators connect all

floors within about 124,000 square feet just for dental services. Each operatory is approximately 100 square feet

Education in dental hygiene, as well as dentistry, was also changing at this time. The 1970s and 1980s required new educational techniques. Computerized and auto-tutorial instruction was replacing formal lectures in classrooms. The Health Sciences Building provided this space; as it easily accommodated study carrels, audio-visual centers and computer technology.³⁵

Student Life

Dental hygiene students had access to both the Evanston and Chicago campuses; however, the dental hygiene facility was on the Chicago campus. Housing was provided in two university residence halls. Abbott Hall and Lake Shore Center are coeducational eighteen-story buildings. Lake Shore Center is newer than the fifty-five year old Abbott residence. Lake Shore Center was renovated and purchased in 1977. It has music rooms, a swimming pool, gymnasium, lounges and party rooms.

All students were automatic members of the Student American Dental Hygienists' Association affiliated with the American Dental Hygienists' Association nationwide.³⁶

³⁵Northwestern University Dental School. VIP Tour Guide., 4.

³⁶Northwestern University Dental Hygiene Program (1988-1990): 17.

Sigma Phi Alpha, the national Dental Hygiene honor society, was founded in 1959 by Evelyn Mass at Northwestern. She served in the program as both an instructor and supervisor of more than twenty years. The Northwestern chapter had the distinction of being the first chapter ever established. Later, over one hundred chapters were begun nationwide due to Ms. Mass's leadership. For membership, students had to rank in the upper twenty percent of their class and have the recommendation of their faculty. The focus of the group stressed scholarship, service, leadership and fine character.³⁷

Accreditation in Dental Hygiene Program

In 1982, the Dental Hygiene Program at Northwestern University Dental School became fully accredited, once again by the Commission on Dental Education. As the study revealed early on in this chapter, the dental school and hygiene department's facilities were becoming antiquated. In 1978, with the facilities of the new Health Sciences Building, the Dental Hygiene department was better able to meet the Commission's Ten Standards and Guidelines as changes developed in the 1970s and 1980s.

³⁷"History of Sigma Phi Alpha." Northwestern University Dental School Library, 311 East Chicago Avenue, Chicago, Illinois, Tenth Floor. Pamphlet File: Archives (1975).

Standard 1 - Educational Setting

The Dental Hygiene Program existed within the Dental School where the Department of Hygiene was a distinct Department. The faculty were faculty of the dental school. The Dental School was accredited by the Commission on Dental Accreditation of the American Dental Association. The University was accredited by the North Central Association of Colleges and Schools. The University has been fully accredited since 1913. The last accreditation visit was in 1991. In 1992, there were approximately 14,000 students enrolled at Northwestern University on both campuses.

Standard 2 - Community Resources

This standard required an adequate professional and population resource to support the hygiene program. Patients were recruited through the Public Relations Department. They advertised special programs within the school: Kids Day, Senior's Day, Senior-Dent Outreach Program; special rates were given for Dental Hygiene services to groups within the community. Hygienists were invited to present health education to grade school children as well as speak within the community on dental health. Special services to cancer patients, handicapped, children and veterans who are ill were all helped by the Dental Hygiene students at Northwestern Memorial Hospital, Children's Memorial Hospital, Veterans' Administration, Lakeside Hospital, Prentice Women's and Illinois Masonic Hospitals.

The advantage for the students was that all locations were within walking distance of the dental school; therefore, rotation scheduling for students and faculty was easily facilitated.

A weakness of the program lies in the occasional budget cuts which necessitated closure of certain facilities. One example was The Rehabilitation Institute's closing of its dental clinic. Another weakness was the unavailability of resources or rotation in nursing or retirement homes. This special, elderly population were not regularly visited by hygiene programs due to the facilities inability to provide such services.

Standard 3 - Administration

The Hygiene Department chairman was part of the Council for Clinics and the Administrative Council as well. The hygiene director was Chairman of Dental Hygiene and Auxiliary Programs. The post-certificate program as well as the Dental Auxiliary Utilization (DAU) Clinic and TEAM Clinic came under her jurisdiction also. The dental hygiene faculty, twelve in all plus four part-time dentists, had input to all committees through an elected dental school representative.

Standard 4 - Financial Support

The Commission on Accreditation expected the institution to possess adequate financial support to ensure fulfillment of Dental Hygiene Program objectives. In addition

to student tuition, a grant from the Illinois Department of Higher Education was obtained. It was based on the number of Illinois students in the program. It supported salaries of the faculty and ensured the quality of teachers in the program. In addition to this grant, the alumni fund, increased over the years, provided more continuing education for faculty.

The program had enough faculty and resources to continue the high quality of its curriculum. The program scored in the top ten percent of all hygiene programs nationwide on the National Board Examinations the previous year--1981.

Standard 5 - Curriculum

Accreditation standards were guidelines for the hygiene program. In Liberal Arts, English, Psychology, Sociology and Speech were minimal requirements. The term was on the quarter system and was comprised of eleven weeks. First quarter students took: English, Biochemistry, Gross and Oral Anatomy, Principles and Orientation to Dental Hygiene. Second quarter courses covered English II and Biochemistry II, Physiology, Microbiology, First Aid, Principles of Hygiene II as well as Head and Neck Anatomy. Third quarter courses included Dental Materials, Introduction to Periodontics, Microanatomy, Pharmacology, Applied Biochemistry, Radiology, Dental Health Education, Speech and Clinics I. Fourth quarter continued with Clinic II, Applied Radiology, Care for Special Patients,

Dental Specialties, Orthodontics and Clinic Seminar I. Fifth quarter students took Pathology, Nutrition, Clinic Seminar II, Community Dental Health, Hygiene Clinic III, Oral Pathology and Psychology. Sixth quarter continued with Hygiene Clinic IV, Applied Nutrition, Local Anesthesia and Pain Control, Therapeutics, Sociology, and Community Health. The last quarter consisted of coursework in Hygiene Clinic V, Applied Dental Materials and Legal Issues. The total number of hours was 122.

The above curriculum provided students with background knowledge in the basic and dental sciences as well as those necessary for Dental Hygiene practice and skill development.

Maximum enrollment in the program was twenty-five students who utilized twenty operatories. The overflow rotated within other departments in the dental school as well as extramural rotation previously mentioned.

Standard 6 - Admissions

Admission was met by the requirement of graduation from high school with above-average status. One year of Biology and Chemistry was required as well as scores on the Dental Hygiene Aptitude Test, ACT or SAT tests. A personal interview was also required for entrance into the program.

Standard 7 - Faculty

There were twelve full-time faculty and four part-time faculty members in the Dental Hygiene Program. All twelve

possessed Bachelor of Science degrees with the four part-time positions filled by dentists. The average teaching load was 532 hours per year. The faculty operated under job descriptions and yearly contracts with opportunity for professional development. Most of the faculty were working towards advanced degrees, published regularly and gave oral presentations at specific intervals.

Outstanding performance was rewarded by promotion; financial compensation and tenure.

Standard 8 - Facilities

In 1978, the Dental Hygiene Program moved into the new Health Sciences Building with the dental students. The dental students and hygiene students utilized the new clinical facilities there. Instruments were sterilized in another area and delivered to each operatory eliminating congestion and waiting for necessary instruments during busy days in the clinic. There was a call and buzzer system with lights for dental students to solicit the help of the auxiliary student. Classrooms were located on non-clinical floors; however, conference rooms were located along the sides of clinical areas for consultation with patients.

The library and classrooms in the Ward Memorial Building are still functional for both dental and medical students and faculty in addition to the modern laboratories and operatories in the new Health Sciences Building. The facilities provided a traffic-free climate due to the spacious

reception area on each floor of the clinic areas. Internal corridors facilitated patient flow; external corridors were used by faculty, staff, and students.

Emergency equipment located in the Dental Hygiene clinic included oxygen tanks, emergency buzzer systems and emergency drug kits for ill patients. In addition to these items, the dental school and hygiene clinic had the advantage of sharing these facilities with the medical students and doctors of Northwestern Memorial Hospital's emergency room.

There were only two instances when the hygiene clinic was shared with other persons who were not hygienists: The Dental Auxiliary Utilization Program (DAU) and the Introductory Course Clinic I. These times consisted of approximately sixty-six hours per year using eight chairs in the clinic.

Tentative plans were made to renovate the technique laboratories in the Ward Memorial Building; however, they have not been realized to date.

Standard 9 - Learning Resources

The major collection of books and periodicals utilized by the Dental Hygiene Program were found in the main dental library in the Ward Memorial Building. Additional books and periodicals were also kept in the satellite library and hygiene department in the Health Sciences Building.

Faculty used both libraries approximately two times per week. Hygiene students comprised seventy-five percent of the

total student attendance in the library system; for the academic year 1980-1981, this percentage represented approximately 22,384 hygiene students visits.

The hours of the libraries assured the hygiene students accessibility for research and study. It was open from 8:00 A.M. to 10:00 P.M. Monday through Thursday, 8:00 A.M. to 6:00 P.M. on Friday and 9:00 A.M. to 3:00 P.M. on the weekends.

Standard 10 - Students

Student data were missing from the manual.³⁸

As one can well realize from reading the accreditation report, Northwestern University's Dental Hygiene Program was an asset to the community and provided many Chicago area dentists with well-trained and qualified dental hygiene personnel. It existed for over sixty years maintaining high standards in its curriculum as well as the experience provided in a dental school setting. The early 1990s marked the program's closure due to competition from community college programs. There was a wide margin in tuition rates between Northwestern's high quality program in a dental environment versus a program that was organized as part of an educational program alone.

The dental school still remains open and continues to thrive into the 1990s. Chapter five will attempt to describe

³⁸Northwestern University Dental School. Dental Hygiene Education Program. Commission on Dental Education. October 1982.

the comparisons and contrasts between Northwestern University's program in dental hygiene and Loyola University's program that most recently closed also.

CHAPTER V

COMPARISONS AND CONTRASTS BETWEEN LOYOLA AND NORTHWESTERN UNIVERSITY: A HISTORICAL PERSPECTIVE

Loyola and Northwestern University Dental Schools can both trace their roots back to the 1800s in the Chicago area. Before these schools developed their dental curriculums, dentistry was practiced by preceptorships. This was a tutorial relationship whereby the student learned the art of tooth extraction from a teacher, usually a physician or artisan in America or Europe. The founding of the Baltimore College of Dental Surgery in 1840, as well as others that followed, paved the way for formal preparation towards the degree of Doctor of Dental Surgery.¹

The founding of Loyola and Northwestern Dental Schools were similar historically with Loyola beginning as the Chicago Dental Infirmary on Adams Street in 1883. The founding fathers believed that all applicants must possess a medical degree prior to dental school acceptance. Soon, they realized it severely limited their enrollment and the M.D. degree requirement was dropped after one year. In 1884, they

¹Robert J. Bruckner, et al., "Dental Preceptorship of the 19th Century: What Were They Like?" Bulletin of the History of Dentistry, vol. 36, no. 1 (April 1988): 12.

established the Chicago College of Dental Surgery. It became the largest dental school the world over at that time. It also had the distinction of being the first dental school in Illinois.² It became the largest dental school at that time due to the huge increase in applicants once the M.D. degree requirement was removed.

The Chicago College of Dental Surgery moved about the Chicago area, as the school grew. It became affiliated with Lake Forest University in 1889, necessitating another move to Michigan and Randolph Streets. After several expansions and affiliations with yet another school, Valparaiso University, it finally merged with Loyola University, a Jesuit Institution since 1870, in 1923.

Northwestern University Dental School was founded in 1887, four years after Loyola's beginning. This historical fact made Northwestern the second dental school founded in Illinois. It was established by a group of private citizens. Loyola's, in contrast, was a product of the merger from the early Infirmary's connection with Lake Forest University; Rush Medical College, affiliated with the Chicago Dental Infirmary was the Medical School; Chicago College of Dental Surgery became the dental department. This established the Medical/Dental connection that was prevalent in the 1800s.

²Liz Gondela, "Illinois Dental Schools: The Journey to the Present." Illinois Dental Journal, vol. 58, no. 2 (March-April 1989): 76.

The faculty of Rush Medical School, composed of physicians and dentists, became the founders of Loyola's Dental School.³

Northwestern, like Loyola, experienced growth in its early student body, necessitating its first dental school, University Dental College, to relocate several times in the Chicago area. In 1891, University Dental College became Northwestern University Dental School, making it the first dental school to be established within an Illinois university. It did not require its applicants to have an M.D. degree for acceptance into the Dental School. Early requirements preferred the applicants to be high school graduates or possess a teaching certificate. Other applicants were expected to pass an examination in the following subjects: English, Mathematics, Geography, Latin, German or Physics.⁴

Loyola and Northwestern University Dental Schools each shared facilities with their respective Medical Schools during this early period. At Northwestern University, President Henry W. Rogers, merged the Medical School, Law and Pharmacy Schools with the Northwestern University Dental School in 1891. With Dr. Edgar D. Swain as its first dean, very high educational standards were instituted giving dental students a strong foundation in medicine. He was also responsible for

³American Dental Association Library. Historical Documents. 19th Floor, 211 East Chicago Avenue, Chicago, Illinois. EDUCATION HISTORY FILE.

⁴"Crowning 100 Years." Northwestern Perspective (Winter 1991): 4.

the recruitment of prominent faculty, such as: Dr. Greene Vardiman Black and Drs. George Cushing, Edmund Noyes, Edgar Swain and W.V.B. Ames.⁵

The founders of Loyola University's Dental School were also strong advocates of the Medical/Dental connection.⁶ Drs. G. Nichols, T. Brophy, F. Gardner, A.W. Harlan and E. Talbot, all charter members, were responsible for filling the positions on Loyola's Board of Directors. This Board had representatives from six of Chicago's Medical Schools, as well as faculty from both the Medical and Dental profession.⁷

An interesting similarity among these prominent men was that Dr. G. V. Black taught at Loyola Dental School during its first seven years of existence. He also established Northwestern's Dental School a few years later, becoming the second dean of the school.⁸ Edgar D. Swain, first dean of Northwestern as well as Edmund Noyes served on the faculty of Loyola as well. Loyola paid tribute to Edmund Noyes by bestowing an honorary degree on him in the first graduating

⁵"A Century of Dental Progress." The Bridge. Northwestern University Dental School (Summer 1991): 3.

⁶"1883-1983. A Century of Service." Loyola University School of Dentistry (1983): 5. Early applicants in 1883 were required to have an M.D. Degree for entrance into the Dental School. This requirement was dropped in one year due to the founders' recognition that they must open the school to students with a variety of backgrounds.

⁷Ibid., 5.

⁸"In the Schools: 1905-1955." Illinois Dental Journal, vol. 24 (May 1955): 330.

class of 1883.⁹ Loyola and Northwestern Dental Schools gained the reputations of attracting some of the finest teachers to their schools. This made them quite distinctive in dental circles and also similar to each other.

Curriculum at Loyola and Northwestern Dental Schools

Dental and medical students took most basic science classes together at both Loyola and Northwestern Dental Schools in the early years. Northwestern moved from the two-year educational program in 1896, with Loyola following in 1905, to the three-year program that would be recommended in the 1926 Gies Report for all dental schools of the future.

The Gies Report, in 1926, evaluated dental education in the same manner that The Flexner Report surveyed medical education. It was also sponsored and published by the Carnegie Foundation. Dr. William Gies, a biochemist from Columbia University, as well as an authority on dental education, recommended the two-three year plan for all schools nationwide. It required two years of pre-dent college coursework toward admission to a three-year program in a dental school.

It was very important in that it influenced the university programs and finally, placed the financial burden

⁹Ibid., 330.

on society to provide good dental education for all students.¹⁰

As time passed, the American Association of Dental Schools (AADS) recommended the two-year pre-dental requirement with a four-year curriculum of 4,400 hours by 1935. In 1938, the Council on Dental Education became the regulatory agency for all dental education. In 1940, it published its official requirements for all dental curriculums: a four-year program of 3,800 to 4,400 clock hours.¹¹

Historically, there have been only two times when several schools changed their curricular programs from four years to three. One was the World War II era. It became a three-year continuous program without summer breaks. The second period, the late 1960s and early 1970s, became the time of a health manpower crises. It was precipitated by federal funding that encouraged early three-year graduation to fulfill the need for more dental personnel. In addition, dental insurance made dental care affordable to those who were unable to have access to it in the past.

As great as it seemed, most schools reverted to the four-year curriculum by 1978. This was due, in part, to the loss of summer income for students as well as the institutions

¹⁰Ibid., 69.

¹¹Don L. Allen, "The History and Current Status of Curriculum Length in United States Dental Schools." Journal of Dental Education, vol. 45, no. 10 (October 1981): 702.

having to include the prescribed coursework of four years into a three-year program.¹²

Both Chicago dental schools were ahead of other schools nationwide with regard to the changes made in their educational programs. At the present time, 1994, Northwestern dental students still begin the dental program in the basic sciences sharing the facilities with the medical students as they did in the late 1800s. Loyola dental students, differing from the dental students at Northwestern, were self-contained in the new facility in Maywood, Illinois.

Northwestern Dental School was first to change its three-year program to the current four-year program in 1917.¹³ Loyola, unlike Northwestern, officially incorporated its dental education into the four-year program in March, 1935. While continuously upgrading its educational standards in the early 1900s, Loyola had graduated more than 6,000 dentists by 1933, its Golden Jubilee.¹⁴ Admission requirements included sixty hours or two years of college credit toward the BS Degree at this time. Northwestern required only one year of college.

Both dental schools had access to dental and medical libraries within the structures of the schools. From 1926 to

¹²Ibid., 702-3.

¹³"Crowning 100 Years." Northwestern Perspective (Winter 1991): 4.

¹⁴"1881-1983. A Century of Service." Loyola University School of Dentistry." (1983): 14.

the 1950s, the dental programs were subject to the influence of the Gies findings, stressing a need for more science in the classroom as well as more coordination between clinical technique and coursework. There were great similarities between the two schools as each established scientific programs and recruited scientists for faculty members. In 1924, the Department of Research was organized at Loyola, under Dr. E. H. Hatton. This was the first department of its kind within a dental school.¹⁵ In 1935, the Foundation for Dental Research was instituted and funded by a special trust fund. Dr. Sicher and Dr. Orban were two international teachers brought to Loyola through these efforts. Northwestern established the Masters of Science Degree in 1922, the first one in the United States. Two great researchers and scientists, Dr. Skinner and Leonard Fosdick, joined Northwestern in its effort to raise its standards.¹⁶

Continuous education was another important factor in both research oriented institutions. Loyola had the first four-week course for dental practitioners in 1889; while Northwestern, in 1921, developed fifty-three one-week courses in addition to three ten-week courses.¹⁷

¹⁵William P. Schoen, Jr., "The Modern History of Loyola Dental School: Chicago Dental Society Review, vol. 76, no. 3 (June 1983): 18.

¹⁶Frank J. Orland, "Our Dental Schools 1905-1980." Illinois Dental Journal, vol. 49, no. 1 (January-February 1980): 63.

¹⁷Ibid., 63.

Dental Auxiliary Education

Another similarity between the dental schools revolved around the importance of training auxiliary personnel in university settings. Northwestern became the first dental school in Illinois to develop a Dental Hygiene curriculum. This became possible under Dean Arthur Black in 1922. He was extremely supportive of this group urging Springfield officials to pass laws expediting their licensure.¹⁸

Additionally, their program included a one-year Dental Assistant course that began with the school's founding; however, it was discontinued in 1948.

Loyola's Dental Assisting Program began in 1965, and ended in 1980. Its Hygiene Program was instituted in 1968 within the new facility that was built. It remained strong until the dental school closed in June, 1993. At that time, it was the only dental school in Illinois with a Dental Hygiene Program. Dean Schoen, like Dean Black at Northwestern, had the vision to prepare for the demands of the future years--1970 through 1990--when the nature of dentistry would change due to advanced technology, dental insurance, and prevention in health care.

Both hygiene schools offered membership to its students in the Sigma Pi Alpha Honor Society. It was founded by Evelyn Mass, a Dental Hygiene Supervisor at Northwestern in 1951.

¹⁸The Bridge. Northwestern University Dental School (Summer 1991): 6.

Both schools offered a two-year certificate program; however, Loyola offered the Baccalaureate Degree in Dental Hygiene, becoming the first university to develop the Bachelor of Science Degree in this program. In the early 1980s, Northwestern introduced the Post-Certificate Degree Completion Program. Its lack of popularity eventually resulted in the closure of the Hygiene Program in 1990. Women in the 1990s were entering dental school in greater numbers causing four-year degree programs in hygiene to wane.

Both Hygiene Programs were fortunate to have access to patients nearby. At Northwestern, hygiene students worked on patients at Foster McGaw Hospital, Northwestern Memorial Hospital, Rehabilitation Institute of Chicago and the Veterans Administration Lakeside Hospital. Loyola students saw patients in the hygiene clinic from Hines Veterans Hospital, Madden Mental Clinic, Foster McGaw Hospital, as well as those participating in the Migrant Workers Program. The patients from this program obtained dental services from a dental van by dental students and hygiene students.¹⁹

In the 1960s and 1970s, both dental schools required new facilities for their dental students and hygiene students. In 1968, Loyola University Dental School became a reality in Maywood, Illinois. In 1978, Northwestern University Dental

¹⁹Kiki Richman, "Loyola's Dental Hygiene Program Celebrates its 20th Birthday." History-Sketch-Folder. 1970-1980, no. 2 F. Elizabeth Cudahy Memorial Library. University Archives. Room 219, 6525 North Sheridan Road, Chicago, Illinois 60626, 10.

School moved into the new Health Sciences Building across the street from the Ward Memorial Building. While each school needed improved additional space for clinical technique and coursework; it was critical to the schools' accreditation. It was apparent to the Commission on Dental Accreditation that visited each school at regular intervals, that new facilities were a necessity. Unlike Loyola, Northwestern Dental School shared the new building with the Medical School. Loyola received federal funding for its new school; while Northwestern's Health Sciences Building was funded through private sources.

The 1960s, 1970s, and 1980s were times of enormous growth in the demand for the services of dental auxiliaries and dentists as well. However, this growth brought with it a period of change in the late 1980s. Problems of declining enrollment, underqualified applicants, drop in dental caries due to success of preventive education, all contributed to both dental schools' concerns for their future.

Loyola, like Northwestern, developed a Strategic Plan in 1986 to address these changes. Northwestern's Strategic Plan was developed by 1989. Both schools evaluated their situations with a plan to overcome any problems resulting from the changes in the dental profession. Declining enrollment caused funding shortages and resulted in the closure of Loyola's Dental School in 1993.

Northwestern's Dental School, unlike Loyola, has been able to remain open until the present time due to their changes. These include limiting enrollment to sixty students with more curricular options open to them. The student may take the path toward research, management, restorative, general dentistry or stomatology. Continuing education was encouraged by a new Implant Center established in the school.²⁰ However, the Dental Hygiene Program was closed in 1990, while Loyola's Hygiene Program remained strong until the Dental School closed in 1993.

Achievement at the Dental Schools

Both Dental Schools have shared many similarities as well as some differences; however, both have been distinctive in their achievements and contributions to the field and profession of Dentistry. Much of this activity was made possible by the loyal and industrious alumni from both dental schools. In addition, research was pursued with great fervor at the schools as a method to produce talented dental personnel who were able to satisfy the demands of the times. In addition to the achievements already mentioned in this study, Loyola was the first American dental school to utilize modern closed-circuit television as part of their educational program.

²⁰The Bridge. Northwestern University Dental School (Summer 1991): 9.

In the early period, the Chicago College of Dental Surgery was the first institution in the country to develop a complete apparatus for the cultivation of microbes for the benefit of the students. This was a great step in the treatment of dental caries. The junior year students had access to the prosthetic department before graduation. They became very skilled in the mechanics of making restorations and dentures in this way.²¹

Dr. Gustav W. Rapp formulated the first toothpaste that contained chlorophyll. The dental school research department developed alginic acid as an aid to stop bleeding after the extraction of teeth. Research contributing to the causes and cures of mouth cancer were begun at Loyola as well.²²

In 1954, the school pioneered a program at the Chicago Dental Society Midwinter Meeting called "Teaching Dentistry with TV." It continues until the present time.²³ Other achievements in the early period were courses provided for practitioners in continued education as early as 1889. Freshman students were provided with practical instructions in dental school techniques, especially tooth preparations.

²¹Vice-President. Dean of Faculties. Finding Aids. Box 2 of 19. D4A1. Accession 81-63. Loyola University Archives. Elizabeth Cudahy Memorial Library. Room 219, 6526 North Sheridan Road, Chicago, Illinois 60626. 2.

²²Ibid., 2.

²³William P. Schoen, Jr., "The Modern History of Loyola University Dental School." Chicago Dental Society Review, vol. 76, no. 3 (June 1983): 19.

Clinics were prepared by distinguished lecturers for the benefit of senior students at Loyola's dental school.²⁴ In 1978, every senior dental student was required to treat a handicapped patient in the clinics. In 1981, William Wrigley presented Loyola's Research Department with a \$100,000 grant to develop an anticariogenic chewing gum.

The above represents some of the achievements of Loyola's Dental school. The distinctions of the Dental School at Northwestern University were quite similar to Loyola as both schools strived for excellence.

Northwestern's accomplishments not previously mentioned are as follows: Procaine was first used in oral surgery in 1898 by Professor Herbert A. Potts. In 1914, Omicron Kappa Upsilon, the international honorary society in dentistry was founded at Northwestern University. The current Index of the Dental Periodical Literature, published by the American Dental Association, was created by Dr. Arthur Black, fourth dean of the dental school. The Rota-Seat, used in sit-down dentistry, was developed by Dr. Carroll W. Johnson of Northwestern's dental class of 1924. Later, the first contour dental chair was developed at the school and is still used at the present time. Dental schools around the world use the first textbook in dental materials written by a Northwestern faculty member, Dr. Eugene W. Skinner. In the early 1950s, another professor,

²⁴"1883-1983 A Century of Service." Loyola University School of Dentistry (1983): 12.

Dr. Leonard Fosdick, Ph.D. discovered "Gardol," an active ingredient used in toothpaste as a plaque preventive. Most recently, in 1987, Professor S. Joseph Leibovich, a researcher and biologist, localized the tumor necrosis factor-alpha (TNF-a) an inducer of new blood vessel growth.²⁵

As this study has progressed one can see from the achievement of both dental schools, that progress and research by talented, dedicated faculty became the norm in the Chicago area over the past one hundred years in dentistry. Chapter six will address current issues of the 1990s that are of concern to society as a whole.

²⁵The Bridge. Northwestern University Dental School (Summer 1991): 10-12.

CHAPTER VI

CONTINUING ISSUES, SUMMARY, AND CONCLUSIONS

There are several issues that impact the contemporary dental field. Probably two of the most important ones are administration of dental care to an aging population and infection control, with the advent of the disease AIDS. These issues will require dental personnel who have been properly trained educationally and clinically.

The AIDS issue has made the dental practitioner especially vulnerable to malpractice litigation on the part of the patient. AIDS, or acquired immunodeficiency syndrome, is a disease caused by a retrovirus known as human immunodeficiency virus type 1 (HIV-1).¹ The symptoms are manifested by fever, rash, diarrhea, fatigue or flu-like symptoms and the disease itself is perceived as a serious threat to dental professionals. The threat could also come from exposure to secondary infection such as Hepatitis B, Herpes simplex, and CCMV (cytomegalovirus). Furthermore, research has provided us with strong evidence that this disease can be transmitted through contact with blood and body secretions. This raises the question of whether AIDS's

¹Thomas J. Zwemer, Boucher's Clinical Dental Terminology (Missouri: Mosby-Year Book, Inc., 1993), 4.

patients can be treated safely in the dental office and what methods should be taken to insure protection for the health professional treating them.

Since AIDS is a condition of the natural immune system's failure to respond to diseases and infections that pose a threat to all individuals, two diseases have surfaced in AIDS's patients recently. One is Pneumocystis Carinii Pneumonia and the second most common disease is Kaposi sarcoma. The Pneumocystis is caused by a parasite that infects the lungs; while the Sarcoma is a cancer that attacks the blood vessels.² These diseases, and others as well, all show manifestations in the oral cavity as these patients present themselves for dental treatment in the office.

The magnitude of the AIDS issue is most significant to this study, because it was discovered in 1981; therefore, its impact will be felt beyond the 1990s, as more cases are diagnosed every day.

In three short years--1981 to 1984--more than 2,600 new cases of the disease have surfaced, according to the United State Public Health Service.³ Of these 2,600 cases, 1,000 or more resulted in death. Furthermore, investigations have reported that the patients who survive have not regained their lost immunity, even though they are under treatment. In 1991,

²Jeanna L. Fair, et al., "AIDS: A New Concern in Dentistry," Dental Hygiene, vol. 58, no. 11 (November 1984): 502.

³Ibid., 502.

the United States Public Health Service reported approximately 1,000,000 infectious Hepatitis B carriers (HBV) with increases of two to three percent yearly.⁴

In addition to the enormous growth of the infectious Hepatitis B virus, the AIDS virus increase has also escalated in the 1990s. Almost two million Americans have been infected as of this study, with over 201,775 deaths from the complications of AIDS. The Federal government is contributing more than one billion dollars to research a cure at the present time. While a vaccine has yet to be developed, three drugs have helped inhibit its growth. AZT, DDI and DDC have been successful in slowing the virus down in some patients, but researchers are still looking for a breakthrough in gene therapy.

According to the Centers for Disease Control (CDC), National Institutes for Health, the leading cities with active AIDS cases as of September, 1993 were New York (54,716), Los Angeles (21,704), San Francisco (17,397), Washington (9,366), Miami (9,303), Chicago (9,251), Houston (9,225), Newark, NJ (7,229), Philadelphia (7,082), and Atlanta (6,836). Percentages of total exposed to the disease are as follows: fifty-four percent from male homosexual behavior; twenty-seven percent among intravenous drug use; nine percent from heterosexual contact; eight percent was unknown; and only one

⁴Kim Stabbe and Mary Elizabeth Kaz, "OSHA and the Healthcare Worker." Journal of Dental Hygiene (January 1991): 33.

percent from blood transfusions and hemophilia blood disorders respectively.⁵

While it has been established that AIDS and the related viral diseases are not transmitted through casual contact, they can be passed through blood or body secretions. Herein lies the concern for all healthcare workers, especially dentists, dental assistants, and dental hygienists.

This brings into focus the need to protect the dental health care workers and the patients as well. Prevention is the best method using the barrier protection standards that have been established. In addition to the requirement of a thorough medical dental history for each patient on the first visit to the dental office, disposable gloves, masks, protective glasses and gowns should be worn by the dentist and hygienist with each patient. Proper sterilization of all instruments and treatment rooms should be followed with chlorine bleach used to disinfect non-disposable clothing or other contaminated items.

In addition to the Occupational Safety and Health Administration (OSHA), established in 1970, implementing the Standard on Occupational Exposure to Bloodborne Infectious Diseases, the Centers for Disease Control and Prevention (CDC) and the American Dental Association (ADA) have instituted policy and guidelines for infection control.

⁵Peter Gorner and Michael L. Millensen, "Clinton picks his team to renew AIDS battle." Chicago Tribune (December 1 1993): 1, 21.

The ADA has included OSHA's Standard in the Accreditation Manual specifying that all educational programs must present a curriculum that prepares students to provide oral health care services to patients with bloodborne infectious diseases. This standard has become part of the ADA's accreditation standard for both Dental Assisting and Dental Hygiene Programs nationwide. It was granted approval in December, 1991 with implementation occurring on January 1, 1993.⁶

Another consideration of the AIDS issue revolves around the increased operating cost of providing barrier protection for all dental personnel and patients alike. Clinical Research Associates (CRA) performed a study on disposable and non-disposable items, excluding special remodeling costs for sterilization areas necessary in some offices. Infection control for only one clinician, the dentist, costs approximately nine dollars per patient. Based on an average practice of 3,600 patients seen per year with at least \$6,000 added per year for each auxiliary employed, this amount came

⁶Accreditation Standards For Dental Assisting Educational Programs. American Dental Association: Council on Dental Accreditation. January, 1993. STANDARD "X"-BLOODBORNE INFECTIOUS DISEASES. Each Program must present a curriculum that prepares its students to provide and/or support health care services to patients with these diseases. Each student must understand the ethical, legal and regulatory issues concerning these patients as they provide oral health care services to these patients with bloodborne infectious diseases, 27.

to over \$30,000 paid annually for infection control in the dental office.⁷

Clinical Research Associates advised dentists to raise fees or institute an infection control surcharge so that the patient may share the cost with them. All dental personnel must educate the patient to what their office is doing to protect them from infectious disease. Not only will this make them feel more secure, but it will help the dental care provider with the high maintenance cost of this protection.⁸

If dental practitioners and auxiliary personnel take specific precautions to protect themselves from the AIDS virus as well as other viruses, research has shown that this disease will not be spread by routine contact in the dental office, where specific precautions include proper use of sterilization, gloves, mask, gowns and glasses. Immunizations for Hepatitis and other diseases have become available and should also be obtained by all health care workers.

Since the first cases of AIDS began surfacing in 1981, authorities have learned recently that the incubation period from initial infection from HIV to full-blown AIDS is about ten years. This provides incentive for all dental personnel to take the necessary precautions to halt this dreaded

⁷Gordon J. Christensen and Rella P. Christensen, "Practice Costs are Up-How Do We Pay the Bills?" Journal of American Dental Association, vol. 124 (March 1993): 42.

⁸Ibid., 43.

disease.⁹ Health education programs have arisen nationwide due to the fears surrounding this disease, especially in the ten year period where the individual appears healthy.

The Robert Crown Center for Health Education, in 1985, began an AIDS educational program for fifth and sixth graders. It focuses on how the disease is spread explaining safe and high-risk behavior. Since its inception, the program has proved quite successful.¹⁰

This program and others have been instituted to stop the spread of infectious diseases among individuals. Dental auxiliaries and the dentist can play an important role in the early diagnosis of the HIV virus. It will also save the lives of persons who have already contracted the disease, through proper medical care before it is too late.

The second issue that is directly related to dentistry and the importance of auxiliaries is the provision of dental treatment to the segment of society that includes the over-65-year-old age group. The middle-aged group as well as the population of retirement age will determine the future of dentistry in the 1990s.

Due to the success of preventive education, tooth decay has been reduced drastically. Despite the decline in dental

⁹William A. Husack and Leslie Zide-Selbovitz, "Case of the HIV-Infected Patient: A Dental Perspective." The Dental Assistant, vol 62, no 3 (Third Quarter 1993): 13.

¹⁰John Zaremba, "Educating 9 and 10 year olds about AIDS." The Doings (November 24 1993): 23.

caries, the direct result of fluoridation in the drinking water, dental demands have increased in the United States. According to the American Dental Association, governmental funding has increased to meet these demands for dental health care.

In 1900, there were only three million people in the over sixty-five age group in the United States. This figure tripled by 1940 and reached over twenty-two million by 1975. It is estimated that this number will increase by approximately 400,000 per year. By the year 2000, there will be close to twenty-nine million people sixty-five years and beyond.¹¹

In addition to these statistics, July, 1983 was the first time in history that the over sixty-five age group surpassed the number of people under twenty-five and under. More importantly, the seventy-six million Americans known as the baby boom generation, born between 1945 and 1964, will be sixty-five in the years 2010 to 2030. Therefore, the only age group that will experience enormous growth will be those over fifty-five.¹²

How will this affect society and dental health care? What training will dental auxiliaries be required in order to

¹¹Marcel A. Fredericks and Ralph R. Lobene, Dental Care in Society (North Carolina: McFarland and Company, Inc., 1980), 113.

¹²Rosetta Gervasi, "The Aging of America." The Dental Assistant, vol 56, no. 3 (May-June 1987), 9.

provide oral care to this special group? The one undisputable fact is that the aging of Americans will change the way we work, live, travel and what types of services we will seek. In healthcare, there will be increased interest in prevention of disease, as senior citizens look to the possibility of increased longevity. With the mortality rate for the over sixty-five group at approximately thirty years, this means there will be close to thirty million senior citizens seeking sophisticated dental treatment in a few years.

Dental health care workers must be adept in treating a wide range of diseases, in addition to the dental caries and the periodontics of the past. Once an individual reaches fifty-years old, the risk increases for contracting cancer, diabetes and neurological disorders. Since these conditions all show symptoms in the oral cavity, it is imperative that dental personnel recognize these life-threatening conditions when they present themselves in their offices.

Some studies, surveying dentists attitudes, most recently in 1992, reported a lack of interest among dentists and physicians to treat the elderly. While this can become a period of withdrawal, depression, loss of self-esteem and self-confidence for some patients; great emphasis has recently been placed on this special group of patients. The improvements in dental implants alone have made fixed prosthodontics possible for many patients who, in the past,

would have been doomed to removable prosthodontics or dentures.

The maintenance of one's teeth, especially in the later years, will be reflected in one's health and longevity. Good nutrition can be maintained when the patient has her/his own teeth to masticate food. It also provides the patients with a sense of well-being and confidence, as they cultivate a feeling of control in their lives.

Education for auxiliaries, namely dental assistants and dental hygienists, will take on various forms and include the following: promotion of behavioral change, understanding the patients' viewpoint and everyday problems, improvement of listening techniques, educating the patients in the act of aesthetic dentistry. These procedures include bonding, veneers, tooth-colored restorations, tooth bleaching as well as other periodontal therapies.

The team approach in providing the above treatment to patients is vital, as the dentist cannot provide cosmetic dentistry alone. The assistant's role is an important one in the delivery of care to the elderly patient. She/he must assist and explain all procedures to the patients, to alleviate any misunderstanding they may have regarding new procedures.¹³ Any new experience or illness will cause stress to patients, especially dental treatment. Dental auxiliaries

¹³Paul Landman, "Cosmetic Dentistry in the Nineties." The Dental Assistant, vol. 60, no. 6 (November-December 1991): 8.

must be prepared to assure the patients that they will be well after dental treatment.¹⁴

Most recently, a training simulation program in geriatric dentistry was developed by Mulligan and Wood. It simulated dentist-geriatric patient interaction; while it taught students how to make clinical decisions. The auxiliary plays a vital role in assessing the health of the elderly patient. All members of the health care team must stress good oral care to these patients.¹⁵

Proper collection of information data by competent staff members is important in treating the geriatric patient. Periodontal disease becomes more prevalent as one ages, but many elderly patients still remain uninformed about periodontal treatment that is readily available to them to stop tooth and bone loss.

As times change in dentistry, the need for dentures is declining and fixed prosthodontics is a service many elderly patients need. Dental implants have made fixed prosthodontics a reality in patients who have sustained tooth loss or bone loss through periodontal disease. Adult orthodontia is

¹⁴Marcel A. Fredericks, et al., "A Model for Teaching the Components of the Family in Dental Care." Educational Directions, vol. 2, no. 1 (February 1977): 27.

¹⁵Ruth Davidhizar, "Tender Loving Care." RDH Magazine, vol. 13, no. 10 (October 1993): 53.

commonplace today as people over sixty-five have significant resources to pay for this cosmetic treatment.¹⁶

Currently, the middle-aged or elderly patient is quite young-minded and willing to follow the recommendations of the well-informed dental educator. Many of them golf, play tennis, and exercise at health clubs, while working at jobs once held by young adults or teenagers.¹⁷ In addition to dental care, over fifty percent of Americans over sixty-five will need long-term care during their lifetimes.¹⁸ Growing concerns for the future of Social Security, Medicare and other support systems have resulted due to the fact that such a large group of senior citizens will depend on them to live. Younger people will be faced with the fact that benefits may be cut drastically when they will need them in their later years.

Other statistics, presenting an upside to these facts, report the average income to be approximately \$30,000 for fifty to sixty-five year olds. Persons in this same age bracket possess seventy-seven percent of America's total assets, such as stocks, bonds and bank savings. While seventy-nine percent are homeowners, over eighty percent of

¹⁶Gordon J. Christensen, "The Future of Dentistry? Treatment Shifts to the Older Patient." Journal of American Dental Association, vol. 123, (May 1991): 90.

¹⁷Charles M. Madigan, "Racing Into The Future." Chicago Tribune Magazine (March 11 1990): 28.

¹⁸U.S. News and World Report (January 23 1989): 1.

the over sixty-five age group have their homes paid off completely. This information points to the fact that they control a great portion of the resources in the United States and most definitely have the means to pay for dental care, as previously mentioned in the study.¹⁹

The intelligent dental practitioner of the future will educate herself/himself in the concepts of dentistry for the older patient through continuing education. More educational avenues for the patients, such as video, television, books and pamphlets can contribute to this process. Also a necessity for the future is the utilization of the properly trained and educated dental auxiliaries, who will help the dentist to meet the needs and demands of those sixty-five years of age and older.

Summary and Conclusion

The educational training of Dental Assistants and Dental Hygienists at Loyola University and Northwestern University from 1970 through 1990 traces its beginnings to the 1800s. While dentistry in ancient times was practiced through the preceptorship method; it was not until 1840, with the founding of the first dental college, that formal educational training became available at the Baltimore College of Dental Surgery. This occurred at a time when it was unheard of for women to take their place in dental schools. In fact, there

¹⁹Rosetta Gervasi. "The Aging of America." The Dental Assistant, vol. 56, no. 3 (May-June 1987): 11.

was no formal training for Dental Assistants or Dental Hygienists during this evolutionary period in health care.

As populations began to grow into towns and cities, a strong desire on the part of the citizenry began to grow toward the improvement of human life. From 1880 to the early 1900s, several dental schools were founded; however, the quality of their educational programs and capability of the faculty left much to be desired.

Dentistry's growth as a profession began to influence the need for a dental assistant in the office. The discovery of nitrous oxide anesthesia by Dr. Horace Wells in 1842, as well as the use of x-rays for prevention and diagnosis by Dr. Edmund Kells in 1896, was the beginning of a move away from apprenticeship to professionalism.

The founding of the American Dental Association in 1859 began the progression of auxiliaries into dental education. The ADA established National Board Examinations for dentists first; and soon afterward, for assistants and hygienists.

In the late 1800s, the first dental assistants were trained by dentists in their offices. Many of them becoming dental hygienists as progress was made toward formal education. In 1906, Dr. Alfred C. Fones, began the informal training of his dental assistant, Irene Newman. By 1914, he had trained twenty-seven graduate hygienists from his six week course, developed in 1913. Other dentists from Connecticut, home of Dr. Fones, supported him and pushed for additional

training of hygienists. In 1916, Columbia University began the first university course with licensure to follow in 1917 in Connecticut. In 1923, the American Dental Hygienists' Association was founded. By 1950, all states granted licensure to Dental Hygienists.

Dr. Edmund Kells, like Dr. Fones, persuaded his colleagues in New Orleans that Dental Assistants were vital to the practice of dentistry. However, it was Juliette Southard in New York City, who became the first President of the American Dental Assistants Association in 1924. By 1947, the Certifying Board of Dental Assistants was established. Finally, educational standards were unified for Assistant credentialing.

Northwestern University Dental School was first to institute a Dental Hygiene and Dental Assistant Program. In 1948, the Assistant program was discontinued; however, the hygiene department existed from 1923 until 1990. Loyola's Dental School began its Assistant Program in 1965 and it continued until 1980. The Dental Hygiene Program began in 1968, in the new school, and continued to be a successful program, until it was phased out when the dental school closed in 1993.

The one-girl auxiliary dental offices were becoming obsolete as modern technology evolved in the delivery of health care. High-Speed handpieces, evacuation machines and

the four-handed sit-down concept were now accepted in all modern dental offices by the 1950s.

The climate of the 1960s included enormous growth in populations and prepaid dental insurance programs for dental patients. The Federal government was also becoming strongly involved, through funding to dental schools. In 1968, Loyola built a new dental school in Maywood, Illinois. This made their auxiliary programs a reality, whereby dental students worked together with trained dental auxiliaries. This was made possible through the Dental Auxiliary Utilization (DAU) program, Training in Expanded Auxiliary Management (TEAM), and Expanded Function Dental Auxiliary (EFDA) programs. These three programs were implemented in all dental schools throughout the United States.

A new dental school was built by Northwestern University in 1978, due to funding from private sources. The three dental auxiliary programs were very successfully implemented there, as well.

By 1976, over forty-six million persons or twenty-two percent of the population possessed prepaid dental insurance. By 1980, the Council on Dental Care projected over sixty million Americans would have dental treatment funded by one type of insurance or another.

The educational programs at Loyola Dental School included Dental Assistant and Dental Hygiene training. The Assistant Program was one year of coursework and clinical work

leading to a certificate. Entrance was through a required aptitude test, as well as a high school diploma and biology a required high school course. It was a fully-accredited program with students expected to pass the Certification Examination, prior to graduation.

The Dental Hygiene Program began as a two-year certificate course. Applicants were expected to have completed a four-year college preparatory high school curriculum, the Dental Hygiene Aptitude Test, and sit for an interview. In the second year, the hygiene students were expected to pass the Dental Hygiene National Board Examination.

After one year, from 1968-1969, Loyola offered another alternative hygiene program. It became Plan B whereby students spent an additional two years in the program toward a Bachelor of Science Degree in Dental Hygiene. Its objective was to prepare Hygienists for other auxiliary roles, in schools and community work. The two-year program focused on hygienists assuming positions in private practice only.

Dental Auxiliary Programs at Northwestern University Dental School began in the 1920s, almost fifty years before Loyola's Assistant Program in 1965. In 1922, both programs began at the Dental School. The dental school, in that same year, established a children's clinic; so that the hygiene and assisting students could teach oral education as a preventive measure to thousands of children on a daily basis.

Admission into the assisting program was through a requirement of two years of high school and open to females only. The course ran for one year and existed until 1948, when it was phased out.

The hygiene program ran from 1922 until 1990. In the beginning, it consisted of a one-year program for females only. Students worked in the children's clinic teaching preventive education; along with the Dental Assistant students and dental students. The admission requirement consisted in the applicant having a high school diploma. In 1939, hygiene education at Northwestern grew into a two-year certificate program. Due to the demand for hygienists in the 1970s, and 1980s, a three-year Baccalaureate Degree Program was instituted in the late 1980s, as well as the traditional four-year program leading to the Bachelor of Science in Dental Hygiene, established in 1979. Additionally, other programs included the Bachelor of Science in General Studies or Health Education, and the Bachelor of Arts Degree.

Admission requirements grew over the years, requiring students to have biology, algebra and chemistry in their high school curriculums. In the 1980s, with the advent of infectious diseases on the rise, entering hygiene students were required to receive Hepatitis vaccines. Hygienists were required to pass the State Board Examination in the state of their residence for licensure.

During the period 1970 through 1990, both Loyola and Northwestern Universities' Dental Schools provided their assistant and hygiene students with new facilities. Their success has been attributed to their ability to adapt to this period of great change in the field. Computerization and auto-tutorial instruction replaced formal lectures, from time to time. High-speed technology meant dental services facilitated faster and better health care delivery than in the years prior to the 1970s. Both schools enjoyed full accreditation by the American Dental Association's Council on Education, for the duration of their dental auxiliary programs.

The dental assistant and dental hygienist, especially since 1970, have become a united team in the dental office as they work together with the dentist to provide quality health care to the patient. Both are health educators and co-therapists in controlling disease in the mouth. Assistants and Hygienists have been trained, not only clinically, but psychologically as well, to promote behavior in patients that will result in proper mouth care. This will only be achieved through education of all patients by Dental Auxiliaries.

Loyola and Northwestern Universities auxiliary programs have produced some of the finest auxiliary personnel in the Chicago area, as well as throughout the United States.

The degree of professionalism these two groups have achieved has been amply shown through their adherence to high

standards in interpersonal, professional, interprofessional and community relationships. Dentistry today has become relatively "painless and fear free" due to advanced technology; but most importantly, because of the efforts of dental auxiliaries who help eliminate any fear the patient may associate with dental treatment.

While the paths to education and achievement have been forged, there are still some areas that have met with obstacles. Salaries and benefits have remained low; in addition to the fact that dentists have been reluctant to delegate duties.

Effective delegation is very cost-effective for the dental practice, resulting in higher job satisfaction and loyalty, increased salaries, and reduced fees for patient services.

It seems vital to the dental profession, as a whole, that we continue to train Dental Assistants and Dental Hygienists in accredited programs, so that increasing dental health care demands in the future will be met. Hopefully, through the lifting of dental restrictions, the quality of dental personnel will remain on the job to accommodate the great demands that will be expected in health care by the year 2000.

APPENDIX A
DEFINITION OF TERMS

APPENDIX A

- ALLOY** Metals that are mutually soluble in a liquid state. The product of the fusion of two or more metals.
- ANTERIOR** Situated in front of. A term used to denote the incisor and canine teeth or the forward region of the mouth.
- ANXIETY** A condition of heightened and often disruptive tension accompanied by an ill-defined and distressing aura of impending harm or injury. Anxiety can disrupt physiologic functions through its effect on the autonomic nervous system. The patient may assume a tense posture, show excessive vigilance, move the hands and feet restlessly, and speak with a strained uneven voice. The pupils may be widely dilated, giving the appearance of unrestrained fright, and the hands and face may perspire excessively. In extremely acute forms the patient may have generally visceral reactions of respiratory, cardiac, vascular, and gastrointestinal dysfunction. The dentist must recognize the existence of anxiety, seek its etiology and relation to dental treatment, and determine ways that the patient's defenses against anxiety can be used to facilitate rather than inhibit treatment.
- ARTICULATION** A joint. The relationship of cusps of teeth during jaw movement.
- BRUSH, POLISHING** An instrument consisting of natural, synthetic, or wire bristles, mounted on a mandrel or in a hub to fit on a lathe chuck; used to carry abrasive or polishing media to polish teeth, restorations, and prosthetic appliances.
- COST-EFFECTIVE** The minimal expenditure of dollars, time, and other elements necessary to achieve the health care result deemed necessary and appropriate.
- CREVICE** A narrow opening due to a fissure or a crack.
- CURET, CURETTE** A periodontal or surgical instrument having a sharp, spoon-shaped working blade; used for debridement. The periodontal curet, available in many sizes and shapes, is used for root and gingival curettage.
- CURETTAGE** Scraping or cleaning with a curet.
- CUSP** A notably pointed or rounded eminence on or near the masticating surface of a tooth.

- DEBRIS Foreign material or particles loosely attached to a surface.
- DECIDUOUS That which will be shed. Pertaining specifically to the first dentition of humans or animals.
- DENTAL Relating to the teeth.
- DENTAL FLOSS Waxed or plain thread of nylon or silk used to clean the interdental areas; an aid in oral physiotherapy.
- DENTITION The natural teeth in position in the dental arches.
- DENTITION (SECONDARY DENTITION, PERMANENT TEETH) The 32 teeth of adulthood that either replace or are added to the complement of deciduous teeth.
- DENTITION (PRIMARY) The teeth that erupt first and are usually replaced by the permanent teeth.
- DISCLOSING SOLUTION A material, usually some form of dye, applied to the teeth to stain bacterial and mucinous plaque on the tooth surface.
- EDENTULOUS Without teeth; lacking teeth.
- EFFECTIVENESS The degree to which action(s) achieve the intended health result under normal or usual circumstances.
- EFFICIENCY Operation of a dental practice in such a way that both business and professional services are performed in a minimum amount of time without sacrificing quality of work, sympathetic attitude, and kindness.
- ESTHETICS The branch of philosophy dealing with beauty, especially with the components thereof, i.e., color and form.
- ETCHING A process used to decalcify the superficial layers of enamel as a step in the application of sealants or bonding agents in preventive dentistry and orthodontics. The agent of choice is phosphoric acid in concentrations of 30% to 40%.
- ETHICS The science of moral obligation; a system of moral principles, quality, or practice. The moral obligation to render to the patient the best possible

quality of dental service and to maintain an honest relationship with other members of the profession and mankind in general.

GINGIVA(E) The fibrous tissue covered by mucous membrane that immediately surrounds the teeth.

GINGIVITIS Any inflammation of the gingival tissue.

GOLD An alloy, principally gold, used for cast restorations.

HANDPIECE An instrument used to hold rotary instruments in the dental engine or condensing points in mechanical condensing units. It is connected by an arm, cable, belt, or tube to the source of power (motor, air, water).

HANDPIECE (HIGH-SPEED) A type of rotary or vibratory cutting tool that operates at speeds above 12,000 rpm. It is propelled by gears, a belt, or a turbine. Generally classified as an air turbine, or a high-speed handpiece on a conventional dental engine.

HYDROCOLLOID The materials listed as colloid solids with water; used in dentistry as elastic impression materials. Hydrocolloids can be reversible or irreversible.

IMPLANT A device, usually alloplastic, surgically inserted into or on to the jawbone. To be used as a prosthodontic abutment, it should remain quiescent and purely incidental to local tissue physiology.

IMPRESSION An imprint or negative likeness of an object from which a positive reproduction may be made.

INDEMNITY BENEFIT A contract benefit which is paid to the insured to meet the cost of dental services received.

INLAY Restoration of metal, fired porcelain, or plastic made to fit a tapered cavity preparation and fastened to or luted into it with a cementing medium.

INSURANCE A contract (policy) whereby, for a stipulated consideration (premium), one party (insurer or underwriter) promises to compensate the other (insured or assured) for loss on a specified subject (insurable interest) by specified perils (risks).

- METHOD** A manner of performing an act or operation; a technique.
- PUMICE** A type of volcanic glass used as an abrasive. Prepared in various grits and used for finishing and polishing in dentistry. Also used in the prophylaxis of natural teeth.
- SALIVA** The clear, slightly acid mucoserous secretion formed in the parotid, submaxillary, sublingual, and smaller oral mucous glands. It has lubricative, cleansing, bactericidal, excretory, and digestive functions and is also an aid to deglutition.
- VACUDENT** Trade name for high-volume suction apparatus designed to remove strongly but gently any fluids and debris from an operating field.

APPENDIX B
CHRONOLOGY OF SIGNIFICANT EVENTS

APPENDIX B

- 1840 - Baltimore College of Dental Surgery founded.
- 1859 - American Dental Association established.
- 1891 - Northwestern University Dental School founded.
- 1913 - 1st formal dental hygiene course given in Connecticut by Dr. C. Fones.
- 1923 - Loyola University Dental School founded.
- 1923 - Northwestern University Dental Assistant and Hygiene programs established.
- 1923 - American Dental Hygienists' Association established in Ohio.
- 1924 - American Dental Assistants' Association established in New York.
- 1926 - GIES Report recommended three-year dental curriculums in university settings. A two-year pre dental program was also a recommendation of this report.
- 1935 - American Association of Dental Schools recommend two-year pre dental training with four-year curriculums in all dental schools.
- 1947 - Certifying Board of American Dental Assistants' Association established.
- 1956 - Dental Auxiliary Utilization programs begin in dental schools. It was a Federally-funded program.
- 1960 - Accreditation begins for all Dental Assisting programs throughout the United States.
- 1963 - 1st male hygiene student accepted into a hygiene program in Ohio.
- 1965 - Loyola University Dental Assistant Program established.
- 1969 - Loyola University Dental Hygiene Program established.
- 1970 - Occupational Safety and Health Administration established.

- 1975 - Commission on Dental Accreditation for Hygiene Programs established.
- 1980 - Dental Assisting National Board established.
- 1990 - Northwestern University Hygiene Program closure.
- 1993 - Loyola University Dental School and Hygiene Program closure.

BIBLIOGRAPHY

Archival Collections:

Archives of the Dental Assisting National Board. Chicago, Illinois. Historical File-American Dental Assistant Association.

Archives of the American Dental Association. Library. 19th Floor. Chicago Education History File.

Council on Dental Education. 18th Floor. Chicago, Illinois.

Dental Auxiliary Education Reports. 1967-1993.

Loyola University Archives History Sketch-Folder. 1870-1980.

Loyola University of Chicago Archives. Undergraduate Bulletins. No. 2F. 1929-81, 1993-1995. School of Dentistry Bulletins. 1934-1991. Dental Hygiene Program Manual for Self-Analysis. 1984. Commission on Dental Accreditation. Dental Assisting Program Educational Program Manual. 1976. Commission on Dental Auxiliary Accreditation.

Office of the Vice President/Dean of Faculties. Records 1954-1976. Box 2 Accession #81-63 D/4A1. Box 7 Accession #81-63 D/4A2. Father Robert Mulligan, S.J. Records 1958-1980. Dr. Richard A. Matre, Ph.D. Box 12 Folder 1 and 2 D/4A4-5. Ronald E. Walker Records 1966-1983. Accession #87-18 D/5C1-2.

Loyola University Medical Center. Dental School Archives. Provost Office Bldg 101. Room 1727. Inter-Office Communication. 1972.

Loyola University School of Dentistry Colleges and Departments. Accession #90-27. Location: D/4D4-6. Box 1 Dentistry. Box 4 Professional Schools.

Northwestern University Archives. Chicago, Illinois. School of Dentistry Library Bulletins. 1887-1990. Historical Documents File Pamphlet File. 1975.

Other Collections:

Dental Hygiene Program Manual for Education Program. 1982.
Commission on Dental Education.

Dr. Clifton Dummett Historical File. Los Angeles,
California.

Northwestern University Library. Evanston, Illinois. Deering
Room 110. Greene Vardiman Black Collection.

Books:

American Dental Association. Accreditation Standards for
Dental Assisting Education Programs. Chicago. 1980.

Accreditation Standards for Dental Hygiene Education
Programs. Chicago. 1991.

Comprehensive Policy Statement Dental Auxiliaries.
Illinois. 1988.

Council on Dental Education. New Faces for Allied
Dental Education. Chicago. 1990.

Legal Provisions for Delegating Functions to Dental
Assistants and Dental Hygienists. Chicago: Division of
Educational Measurements Publisher, 1988.

Report of the Special Higher Education Committee to
Critique the 1976 Dental Curriculum Study. Chicago:
Council on Dental Education, 1980.

Anderson, Pauline C. and Martha Burkard. The Dental
Assistant. New York: Delmar Publishers, Inc., 1987.

Barton, Roger E. et al., The Dental Assistant.
Philadelphia: Lea and Febiger, 1988.

Bremner, M. D. K. The Story of Dentistry. New York: Dental
Items of Interest Publishing Co., 1946.

Campbell, Ralph H. The Dental Hygienist in Private Practice.
Iowa: Wm. C. Brown Publisher, 1964.

Chasteen, Joseph E. Essentials of Clinical Dental Assisting.
St. Louis: The C. V. Mosby Company, 1989.

Four-Handed Dentistry in Clinical Practice. St.
Louis: The C. V. Mosby Company, 1978.

Chernega, Janet B. Emergency Guide for Dental Auxiliaries.
New York: Delmar Publishers, 1987.

Commission on Dental Accreditation. Accreditation Standards
for Dental Assisting Education Programs. Illinois:
American Dental Association, 1993.

_____ Accreditation Standards for Dental Hygiene Education
Programs. Chicago. 1993.

Dummett, Clifton and Lois D. Dummett. The Hillenbrand Era.
Maryland: American College of Dentists, 1986.

Dunlap, J. E. Ten Trends-Dentistry's Emerging Directions.
Oklahoma: Penn Well Books, 1986.

Fredericks, Marcel A., Ralph Lobene and Paul Mundy.
Dental Care in Society. North Carolina: McFarland and
Co., 1980.

Gurley, John E. The Evaluation of Dental Education.
American College of Dentists. Missouri: Ovid Bell
Press, Inc., 1960.

Ingersoll, Barbara D. Patient Management Skills for Dental
Assistants and Hygienists. Connecticut: Appleton-
Century-Crafts Pub., 1986.

Jensen, James R. and Shirley Pratt Schwarzrock. Effective
Dental Assisting. Iowa: William C. Brown Company,
1982.

Kilpatrick, Harold C. Functional Dental Assisting.
Philadelphia: W. B. Saunders Company, 1977.

Lobene, Ralph R. and Alix Kerr. The Forsyth Experiment: An
Alternative System for Dental Care. Massachusetts:
Harvard University Press, 1979.

Loyola University of Chicago. Discover Loyola. Chicago:
Loyola University, 1993.

_____ Loyola Magazine. Chicago: Loyola University, 1993.

_____ Loyola University of Chicago Alumni Directory.
Chicago: Loyola University, 1977.

_____ School of Dentistry Catalogue. Chicago: Loyola
University, 1980-1982

_____ School of Dentistry Catalogue. Chicago: Loyola
University, 1990-1991.

- The Loyola Fact Book. Chicago: Loyola University,
1993.
- Loyola University School of Dentistry. 1883-1983 A Century
of Service. Chicago: Loyola University, 1983.
- The Bur. Chicago: Loyola University, 1983, 1987,
1993.
- Milgrom, Peter et al., Treating Fearful Dental Patients.
Virginia: Reston Publishing Co. Inc., 1985.
- Morton, Judy C. et al., Dental Teamwork Strategies. St.
Louis: The C. V. Mosby Company, 1980.
- Motley, Wilma E. Ethics Jurisprudence and History for the
Dental Hygienist. Philadelphia: Lea and Febiger, 1976.
- History of The American Dental Hygienists
Association, 1923-1982. Illinois: American Dental
Hygienists' Association Publisher, 1983.
- National Institute of Dental Research. Broadening the Scope.
Long-Range Research Plan for the Nineties. Maryland:
Public Health Services, 1990.
- Northwestern University Dental Hygiene Program. Northwestern
University Dental School. Chicago: Northwestern
University, 1988-1990.
- Northwestern University. FACTS. Evanston: Northwestern
University, 1993.
- Graduate School Bulletin. Evanston: Northwestern
University, 1993-1995.
- NORTHWESTERN. Evanston: Northwestern University,
1992-1994.
- School of Dentistry Catalogue. Chicago:
Northwestern University, 1988-1990.
- Undergraduate School Bulletin. Evanston:
Northwestern University, 1993-1995.
- Park, Virginia R. et al., A Textbook for Dental Assistants.
Philadelphia: W. B. Saunders Co., 1975.
- Patt, Jerry and Betty F. Finkbeiner. Practice Management for
the Dental Team. St. Louis: Mosby Year Book, 1991.

- Peterson, Shailer. The Dentist and his Assistant, 7. St. Louis: The C. V. Mosby Company, 1972.
- Reap, Charles A. Complete Dental Assistant's, Secretary's and Hygienist's Handbook. New York: Parker Publishing Co., 1973.
- Richardson, Richard E. and Roger E. Barton. The Dental Assistant. New York: McGraw-Hill Book Company, 1978.
- Rothstein, Robert J. The Dental Health Team. Philadelphia: J. B. Lippincott Company, 1970.
- Ryan, William and Cheryl Wiles. Communication for Dental Auxiliaries. Virginia: Reston Publishing Co., 1982.
- Steele, Pauline F. Dimensions of Dental Hygiene, 493. Philadelphia: Lea and Febiger, 1966.
- The 1990 Survey of Dental Practice. The Bureau of Economic and Behavioral Research. American Dental Association. Illinois. 1990.
- U. S. Department of Health and Human Services. Description and Documentation of the Private Practice Dental Delivery System. Maryland. 1980.
- Wilkins, Esther M. Clinical Practice of the Dental Hygienist. sixth ed. Philadelphia: Lea and Febiger, 1989.
- Wood, Norman. The Complete Book of Dental Care. New York: Hart Publishing Company, Inc., 1978.
- Woodall, Irene R. Comprehensive Dental Hygiene Care. St. Louis: The C. V. Mosby Company, 1989.
- Zwemer, Thomas J. Boucher's Clinical Dental Terminology. Missouri: Mosby-Year Book, Inc., 1993.

Journals:

- "A Century of Dental Progress." The Bridge. Northwestern University Dental School (Summer 1991): 3.
- Adelson, Richard et al., "The Dental Hygienist-A Member of the Team?" Dental Hygiene, vol. 50, no. 1 (January 1976): 26.

- Allen, Don L. "The History and Current Status of Curriculum Length in United States Dental Schools." Journal of Dental Education, vol. 45, no. 10 (October 1981): 702.
- American Dental Association and American Association of Dental Schools. Select-A-National Career Program. "Dental Assisting Today." Chicago, Illinois.
- Breitbart, Alan R. and Philip Aftoora. "A Brief History of Dentistry and Dental Education." CAL, vol. 42, no. 3 (September 1978): 5-7.
- Brine, Pauline. "A New Career Emphasis for Baccalaureate Dental Hygiene Education." Dental Hygiene, vol. 53, no. 6 (June 1979): 271.
- Brown, William E. "The Present Status of United States Dental Education." Journal of Dental Education, vol. 45, no. 10 (1981): 631.
- Bruckner, Robert J. "Dental Preceptorships of the 19th Century: What Were they Like?" Bulletin of the History of Dentistry, vol. 36, no 1 (April 1988): 12-13.
- Burke, Sherry W. "Accreditation: An Overview of Historical and Factual Information as it Relates to Dental Hygiene Education." Council of Education Services and Research, American Dental Hygienists' Association (June 1984): 2.
- _____ "Current Status and Future Trends in Dental Hygiene Education." Journal of Dental Education, vol. 55, no. 3 (1991): 205.
- "Changing Times in Dentistry: Report of a Workshop." The American Academy of Dental Practice Administration. Chicago (February 11-13 1976): 126.
- Christensen, Gordon J. "Boosting Practice Activity and Patient Service." Journal American Dental Association, vol. 124 (May 1993): 109.
- _____ "Educating Patients: A New Necessity." Journal American Dental Association, vol. 124 (August 1993): 86.
- _____ "The Enemy is Us." The Dental Assistant, vol. 122 (October 1991): 9.
- _____ "The Future of Dental Practice." Journal of Dental Education, vol. 50, no. 2 (1986): 116.
- _____ "The Future of Dentistry." Journal American Dental Association, vol. 123, (May 1992): 89.

- _____ "The Key to an Active Practice?" Journal American Dental Association, vol. 123 (July 1992): 77
- "Comprehensive Policy Statement on Dental Auxiliaries." American Dental Association. Chicago (1988): 1-6.
- Conger, Suzanne X. "The Law and Dental Hygiene Practice." Dental Hygiene, vol. 57, no. 9 (September 1983): 14.
- "Crowning 100 Years." Northwestern Perspective (Winter 1991): 4.
- Davidhizar, Ruth. "Tender Loving Care." RDH, vol 13, no. 10 (October 1993): 54.
- Dental Assistant National Board. "Position Paper of American Dental Assistants Association on Credentiability." Chicago, 17 July 1987, 3.
- "Dental Assisting Pioneers." The Dental Assistant, vol. 50, no. 1 (January-February 1981): 26.
- _____ The Dental Assistant, vol. 50, no. 27 (March-April 1981): 44.
- "Dental Auxiliary Evaluation: A Historical Perspective." Dental Assistant, vol. 53, no. 5 (September-October 1984): 19.
- Durocher, Roy T. et al., "The Changing look in Dental Education." Journal of American Dental Association, vol. 80 (May 1970): 1018.
- Fair, Jeanna L. "AIDS: A New Concern in Dentistry." Dental Hygiene, vol. 58, no. 11 (November 1984): 502.
- Fones, Alfred C. "The Origin and History of the Dental Hygienists Movement." Journal of American Dental Association, vol. 13 (December 1926): 9.
- Fredericks, Marcel A. et al., "A Model for Teaching the Components of Bureaucracy." Educational Directions, vol. 1, no. 1 (January 1976): 16.
- _____ "A Model for Teaching the Components of the Family in Dental Care." Educational Directions, vol. 2, no. 1 (February 1977): 25.
- _____ "A Model for Teaching Social Concepts to Dental Auxiliaries." Journal of Dental Education, vol. 35, no. 4 (April 1971): 234.

- _____ "Analysis of Board Certification examination scores and personality characteristics of dental assisting students." The Dental Assistant, vol. 40, no. 10 (October 1971): 18.
- _____ "Dental Auxiliaries and the Poor: A Study of Expressed Willingness to serve." The Dental Student, vol. 51, no. 5 (February 1973): 423.
- _____ "Social Attitudes of Students of Dental Assisting." Part II, The Dental Assistant, vol. 39, no. 7 (July 1970): 16.
- _____ "Social Attitudes of Students of Dental Assisting." Part III, The Dental Assistant, vol. 39, no. 8 (August 1970): 19.
- _____ "Social Attitudes of Dental Hygiene Students." The Journal of The American Dental Association, vol. 45, no. 3 (May-June 1971): 165.
- _____ "Social Attitudes of Dental Hygiene Students." Part II, The Journal of The American Dental Association, vol. 45, no. 4 (July-August 1971): 238.
- _____ "Social Attitudes of Dental Hygiene Students." Part III, The Journal of The American Dental Association, vol. 45, no. 5 (September-October 1971): 320.
- _____ "Teaching Dental Auxiliaries The Interactional Aspects of Social Concepts." Journal of Dental Education, vol. 36, no. 1 (April 1972): 37.
- _____ "The Relationship between social class, stress, anxiety, responses, academic achievement and professional attitudes of students of dental assisting." Dental Assistant, vol. 40, no. 8 (August 1971): 11.
- _____ "The Student Dentist and the Poor." Journal of American College of Dentists, vol. 39, no. 2 (April 1972): 86.
- _____ "The Teaching of Demographic Components in the Behavioral Sciences to Dental Hygienists." Dental Hygiene, vol. 49 (August 1975): 352.
- _____ "How dental auxiliary students look at dentists, dentistry, and community dentistry." Dental Student, vol. 51, no. 3 (December 1972): 32-33.
- _____ "Social Attitudes of Students of Dental Assisting." The Dental Assistant, vol. 39, no. 5 (May 1970): 17.

- Galogan, Donald J. "Back from the Brink-How and Why U. S. Dental Schools Rebuilt." Dental Survey, vol. 54, no. 5 (May 1978): 14.
- Gervasi, Rosetta. "The Aging of America." The Dental Assistant, vol. 56, no. 3 (May-June 1987): 9.
- Gondela, Liz. "Illinois Dental Schools: The Journey to the Present." Illinois Dental Journal, vol. 58, no. 2 (March-April 1989): 79.
- _____. "The Closing of Loyola University School of Dentistry." Illinois Dental Journal (July-August 1992): 241.
- Gorner, Peter and Michael L. Millensen. "Clinton picks his team to renew AIDS battle." Chicago Tribune, vol. 1, 1 December 1993, 21.
- Gurenlian, JoAnn R. "Professional Development of Dental Hygiene Educators." Dental Hygiene, vol. 61, no. 1 (January 1987): 31.
- Hamilton, Penny and Alexander Hamilton. "Sex and the Dental Practice: A Reinterpretation of the History of Dental Hygienists." Bulletin of the History of Dentistry, vol. 28, no. 2 (October 1980): 65.
- Helgeson, Bee. "1924-1974: American Dental Assistants Commemorate 50th Anniversary." Journal of American Dental Association, vol. 88 (September 1974): 539-40.
- Henderson, Lillian V. "Behavioral Sciences in the Dental Hygiene Curriculum." Dental Hygiene, vol. 50, no. 6 (June 1976): 259.
- Hillenbrand, Harold. "Fast and Forecast: Dental Hygiene." Journal of American Dental Association, vol. 43, (1963): 207.
- Husack, William G. and Leslie Zide-Selbovitz. "Case of the HIV-Infected Patient: A Dental Perspective." The Dental Assistant, vol. 62, no. 3 (Third Quarter 1993): 13.
- "In the Schools: 1905-1955." Illinois Dental Journal, vol. 24 (May 1955): 330.
- Kauffmann, Joseph H. "The World's First Dental College." New York State Dental Journal, vol. 42, no. 6 (June-July 1976): 349.

- Keevil, Joan M. "Faculty Openings and Recruitment in Dental Hygiene Education." Journal of Dental Hygiene (July-August 1992): 255-6.
- Kelley, Richard A. "The General Education versus the Dental Hygiene Emphasis in a Teacher Preparation Program." Journal of Dental Education 25 (September 1961): 225.
- Kerr, Lawrence I. "The Changing Character of Dental Practice and its Impact on Dental Education." Journal of Dental Education, vol. 45, no. 10 (1981): 639.
- Landman, Paul. "Cosmetic Dentistry in the Nineties." The Dental Assistant, vol. 60, no. 6 (November-December 1991): 8.
- "Legal Provisions for Delegating Functions to Dental Assistants and Dental Hygienists." American Dental Association. Division of Educational Measurements. Chicago (May 1988): 1-14.
- LeGallee-Byle, Bunny L. "Trends in Dental Assistant Utilization: A Comparative Study." The Dental Assistant, vol. 58, no. 1 (January-February 1989): 18.
- Lobene, Ralph R. "The Role of Dental Auxiliaries in the Future Dental Care Delivery System." Dental Hygiene, vol. 50, no. 8 (August 1976): 359.
- Lyons, Steven. "Soldiers for Dental Hygiene." ACCESS, vol. 5, no. 5 (May-June 1991): 14-15.
- Madigan, Charles M. "Racing into the Future." Chicago Tribune Magazine, 11 March 1990, 28.
- Morris, Alvin L. "Who is to do what work in Dentistry." The Dental Assistant, vol. 47, no. 2 (March-April 1978): 24.
- Motley, Wilma E. "American Dental Hygienists' Association: 50 years of growth." Journal of Dental Hygiene, vol. 87 (November 1973): 1125.
- _____. "Dental Hygiene at 75." Journal of Dental Hygiene, vol. 62, no. 9 (October 1988): 463.
- McReynolds, John E. "Educate or Abdicate." The Dental Assistant, vol. 61, no. 4 (November-December 1992): 32.
- North, George F. "Expanded Duties What, Why, When, and How." The Dental Assistant, vol. 49, no. 1 (January-February 1980): 18.

- Novak, Darlene Eaton. "Dental Auxiliary Evaluation: A Historical Perspective." The Dental Assistant, vol. 53, no. 5 (September-October 1984): 19.
- _____. "Future Alternatives for Dental Practice." The Dental Assistant, vol. 53, no. 2 (March-April 1984): 18.
- Nowell, William. "The Male Role in Dental Assisting." The Dental Assistant, vol. 43, no. 2 (February 1974): 23.
- Paarmann, Carlene S. "Dental Hygiene Curriculum Model for Transition to Future Roles." Journal of Dental Education, vol. 54, no. 3 (1990): 201.
- Pontecorvo, Debra A. "Expanded Duties: Results of ADAA's Nationwide Survey." The Dental Assistant, vol. 57, no. 4 (July-August 1988): 9.
- Randolph, Kenneth V. "The Four-Year Baccalaureate Dental Hygiene Program." Journal of American Dental Association, vol. 42 (January-February 1968): 27-28.
- Reiter, Colleen. "The Present Status of Dental Assisting Education." The Dental Assistant (September-October 1983): 33.
- Richman, Kiki. "Loyola's Dental Hygiene Program Celebrates its 20th Birthday." The Bur, vol. 92, no. 1 (Spring 1990): 10.
- Saline, Linda M. "Personality Characteristics and Career Choice Among Dental Hygiene Students Enrolled in Non-Baccalaureate Programs." Journal of Dental Hygiene, vol. 65, no. 3 (March-April 1991): 133-34.
- Santangelo, Mario V. "The History and Development of United States Dental Education." Journal of Dental Education, vol. 45, no. 10 (October 1981): 624.
- Schoen, William P. Jr. "The Modern History of Loyola University Dental School." Chicago Dental Society Review, vol. 76, no. 3 (June 1983): 23.
- "75 Years of Dental Hygiene Education." Dental Hygiene, vol. 54, no. 3 (1980): 116.
- Southard, Juliette A. "American Dental Assistants Association: Crystals of History." Dental Assistant (September-October 1984): 30.
- Stabbe, Kim. "OSHA and the Healthcare Worker." Journal of Dental Hygiene (January 1991): 33.

- "The History of the American Dental Hygienists' Association." Bulletin of Michigan Dental Hygienists' Association Chicago (March 1983); 9.
- "The Dental Auxiliary Utilization Program." Journal of American Dental Association, vol. 76 (May 1968): 957.
- "Trends in Dental Assistant Utilization: A Comparative Study." The Dental Assistant, vol. 58, no. 1 (January-February 1989).
- U.S. News and World Report, 23 January 1989, 1.
- Vann, William F. Jr. "Evolution of the Dental School Curriculum-Influences and Determinants." Journal of Dental Education, vol. 4, no. 2 (1978): 67.
- Waldman, Barry H. "Dental Auxiliaries Wanted." The Dental Assistant (July-August 1991): 5.
- Waldman, Barry H. and Paula A. Waldman. "From Four-Handed Dentistry to Prophylaxis ... Who's Going to do the Work?" The Dental Assistant, vol. 58, no. 1 (January-February 1989): 29-31.
- Zaremba, John. "Educating 9 and 10 year olds about AIDS." The Doings, 24 November 1993, 23.

Interviews:

- Dr. Bluit, Dean Juliann. Interview by Author, 17 September 1993. Northwestern University School of Dentistry. Health Sciences Building. Chicago, Illinois.
- Dr. Solt, Karen. Past Director of Dental Hygiene. Interview by Author, 20 May 1993. Northwestern University School of Dentistry. Health Sciences Building. Chicago, Illinois. Room 1311.
- Keating, Janice. Assistant Director, Dental Hygiene. Interview by Author. 19 May 1993. Loyola University Dental School. Maywood, Illinois.
- Sauer, Susan. Director of Dental Hygiene. Interview by Author. 27 May 1993. Loyola University Dental School. Maywood, Illinois. Room 2913.

VITA

Marie Anne Macaluso is the daughter of Josephine J. Mele and the late Andrew Mele. She was born in Chicago, Illinois.

She attended the Chicago School of Dental Nursing and the University of Illinois Certification Program one year after graduation from the Notre Dame High School for Girls in Chicago. The following thirty years were spent as a Certified Dental Assistant in private practice. Experience in general dentistry as well as endodontics, periodontics, pedodontics, orthodontics, prosthodontics and surgery was obtained over these years in the dental field. Ms. Macaluso presented clinics at the Midwinter Meeting in Chicago, the largest international dental meeting in the world. She served on the executive board of the local chapter of the Chicago Dental Assistants Association for several years.

After completing over 400 hours of continued education in the dental field, Ms. Macaluso completed her education toward a bachelor's degree in Applied Behavioral Science from National-Louis University in August, 1985. In 1990, a masters degree in political science was completed at Loyola University, Chicago. She began doctoral study in Educational

Leadership and Policy Studies at Loyola University, Chicago in 1990, and was awarded a Doctor of Philosophy Degree in May, 1994.

In October, 1993, Ms. Macaluso presented a research paper at the Illinois and Wisconsin Sociological Meeting in Rockford, Illinois on continuing issues of the 1990s pertinent to the dental field. She has been granted life membership in the American Dental Assistants Association and has been Certified by the Dental Assisting National Board since 1961; one of the first students during the early historical period. She has mentored other auxiliaries to continue their education at the university level while she participated in dental programs at educational meetings both nationally and internationally during her career.

The Dissertation submitted by Marie A. Macaluso has been read and approved by the following committee:

Dr. Gerald Gutek, Director
Professor, Educational Leadership and Policy Studies
Loyola University, Chicago

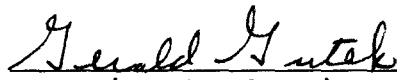
Dr. Steven Miller
Professor, Educational Leadership and Policy Studies
Loyola University, Chicago

Dr. Marcel Fredericks
Professor, Sociology and Anthropology
Loyola University, Chicago

The final copies have been examined by the director of the Dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the Dissertation is now given final approval by the Committee with reference to content and form.

The Dissertation is, therefore, accepted in partial fulfillment of the requirements for the degree of Ph.D.

March 22, 1994
Date


Director's Signature