Approved: March 12, 2001
Date

MINUTES OF THE HOUSE COMMITTEE ON HEALTH AND HUMAN SERVICES.

The meeting was called to order by Chairperson Garry Boston at 1:30 p.m. on March 7, 2001 in Room 210 Memorial Hall

All members were present except: Representative Willa DeCastro, Excused
Representative Geraldine Flaharty, Excused
Representative Doug Patterson, Excused
Representative Gwen Welshimer, Excused

Committee staff present: Dr. Bill Wolff, Kansas Legislative Research Department
Renae Jefferies, Revisor of Statute's Office
June Evans, Secretary

Conferees appearing before the committee: Kevin Robertson, Executive Director, Kansas Dental Assn.
Dr. Steve Haught, President, Kansas Dental Board
Dr. Roger Rupp, President, Kansas Dental Board
Melanie Mitchell, President, Kansas Dental Assistants Association
Leah Sperry, Dental Assistant, Garden City
Natalie Eastman, RDH, Wichita
Dr. Ted Maples, Ulysses
Ron Gaches, Kansas Hygienist Association
Denise Maus, Hygienist
Teresa Higgs, Hygienist

Others attending: See Attached Sheet

The Chairperson opened the hearing on **SB 50 - Elimination of Dental Assistance Sunset Provision.**

Kevin Robertson, CAE, Executive Director, Kansas Dental Association, testified as a proponent to **SB 50**, stating the bill would remove the July 1, 2001 sunset on the ability of dental assistants to scale on the coronal surfaces of the teeth, above the gumline, under the direct supervision of a dentist, after completing a course of study approved by the Kansas Dental Board that meets certain requirements. This bill was recommended by the Healthcare Reform Legislative Oversight Committee which spent a full day discussing and studying this and other dental issues in September.

In January 1998, with the threat that the Dental Board would vigorously enforce AG's opinion regarding the current law, the KDA brought the basic ad hoc committee proposal to the legislature for approval in an attempt to ease a growing problem. **HB 2724** contained provisions to allow dental hygienists to work under general supervision of a dentist, increase the size of the dental board, created a task force to investigate the dental hygiene shortage and report back to the legislature, allowed dental assistants to polish teeth, and allowed dental assistants to coronal scale above the gumline after completing a course of study approved by the Board. The latter provision sunsets on July 1, 2001 and was added in conference committee as a compromise when the House and Senate versions of the bill differed on the coronal scaling issue. The House version of the bill contained the provisions that permanently created the dental assistants ability to scale. The conference committee report passed both houses of the Kansas legislature 31-9 and 93-29 respectively (Attachment 1).

Stephen R. Haught, President, Kansas Dental Board, testified as a proponent to **SB 50**. The Kansas Dental Board developed rules and regulations for a special support worker in the dental office. The maturation of the regulations was directly affected by the insight given to the dental board by the Joint

Committee of Administrative Rules and Regulations in the August 11, 1998, letter to the Executive Director. The regulations are contained in Article 6 - DENTAL AUXILIARIES of the Kansas Dental Board's Administrative Regulations. Contained in the five parts of Article 6 are the rules by which dental practitioners, course of instruction schools, and the trained workers must act to be part of this special extension of care.

The impact on Kansans has been healthy. In addition to the positive personal changes of the trained providers of above the gum line scaling treatment, the Kansas Dental Board has been vigilant in our investigation of reported violations. As stated earlier, in reports against non-certificated providers of the supragingival scaling, five dentists were found in violation. Consent agreements with fines and additional stipulations have been signed. The dentists have ceased the service until properly trained workers could provide the care. Three other reported violations involved the display of the certificate of completion and not unauthorized care. The Kansas Dental Board has not been lax in the new rules enforcement, or "soft" on violators of the regulation (Attachment 2).

Dr. Roger Rupp, President, Kansas Dental Association, testified as a proponent to **SB 50**, stating the continuation of the dental assistant supragingival scaling program is directly tied to the shortage of dental hygienists and because of the shortage the supragingival scaling program must be continued. According to popular dental literature, dentists from around the country continue to be hampered by an inadequate supply of hygienists. The Kansas Dental Association is keenly aware of the shortage of dental hygienists and has been striving for over five years to increase the number of graduating dental hygienists (Attachment 3).

Melanie Mitchell, Dental Assistant Program Specialist, Wichita Area Technical College, testified in support of **SB 50**. Legislation passed 3 years ago allows experienced dental assistants, with appropriate training, to perform supragingival scaling. A 90 clock hour course was designed for experienced dental assistants to expand their skills in preventive dentistry, specifically to provide instruction in supragingival scaling and polishing. Currently, 5 technical/community colleges offer the course. Three of these institutions also offer entry-level dental assistant programs that are accredited by the Commission on Dental Accreditation of the American Dental Association. All participants must provide proof of one of the following eligibility pathways: (1) Graduate of an ADA accredited dental assistant program and Certified Dental Assistant and 6 months of experience OR (2) Two years of chairside dental assisting experience and CDA OR (3) Three years of previous chairside dental assisting experience within the past five years.

Student curriculum materials include a dental hygiene textbook and approximately 55 instructional modules from the University of Kentucky that include content in tooth and periodontal anatomy, collecting patient information, instrumentation and scaling, polishing, periodontal disease, nutrition, patient education, communication skills and radiology. The University of Kentucky also has videos and slides to supplement instruction. These are being utilized as well as additional teaching aids from other sources. The supragingival scaling course is approximately 50% didactic and 50% hands-on skill practice. Demand for dental services continue to grow while there continues to be a shortage of dentists and dental hygienists. **SB 50** allows the dentist to continue to more fully utilize the skills of the dental assistant to provide patient care (Attachment 4).

Leah Sperry, Certified Dental Assistant, Garden City, testified supporting **SB 50**, stating this scaling course enabled her to deliver quality care to patients and patients in rural areas to receive the care they need without traveling to a large city. There is a huge shortage of dental hygienists in the area and many dentists have advertised for hygienists to move to the area with no response. Dental assistants are not trying to take jobs away from hygienists (Attachment 5).

Natalie Eastman, Registered Dental Hygienist, Wichita, testified in support of **SB 50**, stating the bill provides competent care and reaches more people throughout the state. Ms. Eastman testified she also teaches a supragingival scaling course for dental assistants at the Wichita Area Vo-Tech College (Attachment 6).

Dr. Ted Maples, Ulysses, a proponent and a practicing dentist since 1970 stated during those thirty years he has been able to employ a part-time hygienist most of the time. They generally have been willing to work two or three days a week. Before the new interpretation of our Dental Practice Act, the dentist had latitude in training our assistants. Over time, as they developed their skills, we could delegate some procedures to them that were reversible. Because of the sparse population and the rather large distances between towns, many of our patients travel for approximately an hour or more for treatment. To minimize the trips, usually several family members want to be seen simultaneously. Should they have to wait until a hygienist is there? There just aren't many hygienists available in western Kansas; even if they receive training in Colby or Garden City, they do not stay. The following recommendation is: (1) fund a new registered dental hygiene program in Garden City (2) continue with the supragingival scaling course for assistants in Garden City and (3) to allow dentists the flexibility of delegating some of the prophylaxis procedures to qualified staff–some of which may still be waiting in line to take the expanded duties course. Without this flexibility, the preventive procedures which could and should be available to all of the patients won't be done at all, or at best, in a very limited way (Attachment 7).

Ron Gaches, Gaches, Braden, Barbee & Associates, an opponent to **SB 50**, stated in1995 the Attorney General rendered an opinion regarding the Kansas Dental Practice Act and who was authorized under the Act to polish and scale teeth. Attorney General Stovall issued an opinion that the only persons authorized under the Act to polish and scale teeth were dentists and dental hygienists. At the time, many dentists were using dental assistants to polish and scale teeth. There was not available at the time an immediate supply of dental hygienists to take the place of all the dental assistants who were working in violation of the law.

In 1998 the Kansas Dental Association asked for introduction of a bill to allow dental assistants to polish and scale teeth. The Kansas Dental Hygienists Association opposed the bill arguing that there was not a significant shortage of dental hygienists, only a distribution problem; that dental assistants lacked the education in dental health to replace dental hygienists; and that only licensed and certified dental professionals should be given the authority to polish and scale teeth. Compromising the quality of care of Kansans should be the last choice. There are many options available rather than passing **SB 50** in its current form (Attachments 8, 9, 10 & 11).

Denise Maus, KDHA Legislative Chairperson, testified as an opponent to **SB 50**, stating a Registered Dental Hygienist is a specialist in preventive oral health services, who is a graduate of a minimum two-year college program. Dental hygiene education includes over 800 clock hours of classroom studies and labs consisting of general education and academic subjects emphasizing basic sciences including microbiology, chemistry, pathology, anatomy, physiology, as well as dental and dental hygiene sciences.

Dental hygiene students participate in over 700 clock hours of extensive supervised clinical experience. This is the portion of the program during which dental hygiene students learn their skills. The students gain their clinical experience at the dental hygiene clinic based on the college campus during which the students are closely monitored and rigorously evaluated.

Basically, a new category of dental personnel was temporarily created who are able to provide direct, hands on patient care. Kansas is and remains the only state to allow unlicenced, unregulated dental personnel to perform scaling procedures (Attachment 12).

Teresa C. Higgins, RDH,BS, President of the Kansas Dental Hygienists' Association, testified as an opponent to **SB 50**, stating the sunset provision would have a tremendously negative public health outcome as well as being detrimental to the profession of Dental Hygiene and Dentistry. Three years ago legislation was passed creating an unlicenced, unregulated dental scaling assistant as a temporary measure to allow the dental hygiene educators and The Kansas Dental Board time to increase the dental hygiene population. A sunset provision was wisely applied so as not to create a new level of care but to help address access-to-care in rural and underserved areas of Kansas. The state also identified and labeled three regions of Kansas as underserved. These three regions were Northwest, Southwest and Southeast Kansas. The Kansas Dental Hygienists' Association has grave concerns about what impact this is going

to present to the citizens of Kansas. Three questions need to be addressed: (1) Does the permanent creation of the scaling assistant really affect the access-to-care problem (2) will this level of care do any harm and (3) how will this affect the dental hygiene workforce (Attachment 13)?

Written testimony provided by: Dr. Rita Burnett, Kansas City, Kansas a proponent(Attachment 14) and a paper "The Influence of Anatomic and Iatrogenic Root Surface Characteristics on Bacterial Colonization and Periodontal Destruction: A Review (Attachment 15).

The meeting adjourned at 3:05 p.m. and the next meeting will be March 8.

HEALTH AND HUMAN SERVICES

DATE March 7, 2001

NAME	REPRESENTING
Ron Gaches	KDHA
Tamra Hyman RDH, BS	Pres. KDHA
Denise A Mann, RDH, BS	KDHA Legis. chair
Margaret (Marga) Mann, R.D.H	KDHA
Jack Glaves	KDHA
Pat Collins, RDH, MS	KDHA
Karen Calhoun	KDHA
Heather Benson	KDHA
Jeri Fred	KS Dental Bd.
Steve Haught	KS Dental Bd.
KEVIN ROBERTSON	KS DENTAL ASSN
Melanie Mitchell	KS. Dental Asst. Assoc. & Wichita Area Tech College
Leah Sperry CDA	KS Dental Assn
Natalie Eastman RDH	KS Dental Assoc.
Roger Rupp DDS	Pres. KS Dental Assn.
Ted J Maple, DDS	KDA
Paula O. Maple	KDA
Mildred Bernstein	KDHA
Jane R. Lamb, RDH	KDHA
Jennifer Schultejans RDH	KDHA
Ken Barone	Hein/Weir Cpts
Lisa Thurman	KDA
James Eisman	KDA
Denise VanSickel	KDA
STEF GOLDBERG	SPEAKER PRO TEM'S OFFICE
Tracy Linson	KDA
Jeffrey Donnelly	KDA

HEALTH AND HUMAN SERVICES

DATE March 7, 2001

NAME	REPRESENTING
Tracie Kuhles	KDA
Anita Murray-Clary DDS	KDA
Ron Kittle DDS	KDA
Sherry Montgomery	DiCE Worker
Angela Landa	KDA
Sheri Dyche CDA RDA	KDA, KDAA
Roberta Halstead CDA	KDA
Ronnie G Lemmel DDS	KDA
Shirley Miller	Rottenberg Assoc.
Karen Burkhart RDH	Tri County DH Assoc KDHA
Elizabeth Feyerabend RDH	Tri County DH Assoc KDHA
Teresa Duncan	KRDH
Kim Knowland RDH	KDHA
Jayna Dyer RDH	KDHA
[illegible]	KDA
Karen P. Lakin RDH	KDHA
Gail A. Estes, R.D.H.	KDHA
Karen Marshall RDH	KDHA, JCDHA
Dena E. Anderson, RDH	KDHA
Nancy Ringwall	
Matthew Berry	
Andy M Roby	
Dillon Curtis	
Blake Pingrall	
Bridget Christian	UMKC student - Dental Hygiene
PHILIP HURLEY	PAT HURLEY & CO. / KATL
Ted Jowett DDS	KDA

HEALTH AND HUMAN SERVICES

DATE March 7, 2001

NAME	REPRESENTING
Michael Danley	KDHA

KANSAS DENTAL ASSOCIATION

Date: March 7, 2001

To: House Committee on Health and Human Services

From: Kevin J. Robertson, CAE
Executive Director

Re: SB 50 – Removal of Sunset on Dental Assistant Scaling Program

Chairman Boston and members of the Committee I am Kevin Robertson, executive director of the Kansas Dental Association (KDA) which represents about 80% of Kansas' practicing dentists. I am here today to testify in support of SB 50 which would remove the July 1, 2001 sunset on the ability of dental assistants to scale on the coronal surfaces of the teeth, above the gumline, under the direct supervision of a dentist, after completing a course of study approved by the Kansas Dental Board that meets certain requirements. SB 50 comes to you as a recommendation from the Healthcare Reform Legislative Oversight Committee which spent a full day discussing and studying this and other dental issues in September. The bill was passed by the full Senate by a vote of 33-7 without amendments.

The KDA began working to ease the problem of the dental hygiene shortage in Kansas in 1995-96 after the evidence indicated this was a major problem for dental access across Kansas as dentists simply could not find dental hygienists to work in their practices. About that time the KDA began courting schools across Kansas to either expand or open a new school of dental hygiene. These efforts paid off in the fall 1998 when Colby Community College opened its dental hygiene school thanks largely to the persistence of the KDA, Dr. Roger Rupp (who you will hear from later), and many dedicated persons at Colby CC. The KDA provided Colby CC $37,000 in funds to assists with start up costs and was instrumental in securing dental chairs and their clinical instruments necessary to complete Colby CC's dental hygiene clinic.

Also in 1996, the Attorney General provided an opinion on duties that could be performed by dental assistants. In a nutshell, that opinion ruled that only a dentist or dental hygienist could perform any part of a prophylaxis (cleaning). This was contrary to the common practice at that time as many dental assistants in dental offices across Kansas were routinely polishing teeth with a rubber cup, and scaling off cement around crowns, orthodontic appliances, etc. The AG's opinion further clarified that dental assistants could scale teeth if the procedure was not considered part of a cleaning. It is not overly dramatic to say that the opinion sent the dental community into turmoil as dentists contemplated how they would deliver care to their patients without the use of dental assistants performing these procedures. As dental hygienists were not easily found, many dentists were faced with the unenviable option of reducing their ability to deliver care, or continuing to practice as they had by using dental assistants and risk disciplinary action from the Dental Board.

In the summer of 1997 the KDA, Kansas Dental Hygienists Association (KDHA), Kansas Dental Assistants Association (KDAA), and Kansas Dental Board met in several meetings with the blessing of their organizations to explore ways to meet the oral health needs of Kansans and

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develop solutions to the 1996 AG opinion. Among the committee recommendations were the two listed below that were eventually included in 1998 HB 2724.

1. Allow dental assistants to supragingival scale and polish above the gumline (called an expanded hygiene dental assistant);
2. allow dental hygienists to perform their duties under general supervision in order to address the shortage of qualified dental professionals in rural and elderly populations;

The final report included specific requirements, laid out a course of study, etc. for the dental assistant scalers. The membership of the KDHA rejected the proposal, and frankly, the KDA membership had concerns with some points of the recommendation as well.

In January 1998, with the threat that the Dental Board would vigorously enforce AG's opinion regarding the current law, the KDA brought the basic ad hoc committee proposal to the legislature for approval in an attempt to ease a growing problem. HB 2724 contained provisions to allow dental hygienists to work under general supervision and administer local anesthesia under the supervision of a dentist, increase the size of the dental board, created a task force to investigate the dental hygiene shortage and report back to the legislature, allowed dental assistants to polish teeth, and allowed dental assistants to coronal scale above the gumline after completing a course of study approved by the Board. The latter provision sunsets on July 1, 2001 and was added in conference committee as a compromise when the House and Senate versions of the bill differed on the coronal scaling issue. The House version of the bill contained the provisions that permanently created the dental assistants ability to scale. The conference committee report passed both houses of the Kansas legislature 31-9 and 93-29 respectively.

Following passage, the Kansas Dental Board went about its business preparing the rules and regulations for the program. The plans calling for a new registered position of "Preventive Dental Assistant," specific enrollment prerequisites, and dentist sponsorship of a dental assistant were all rejected by the Joint Committee on Rules and Regulations in favor of a more streamlined program that is in force today.

Initially Wichita ATC, Flint Hills ATC, and Salina ATS, all schools with ADA accredited dental assisting programs, were approved to deliver the course of study. Since that time Concorde Career College in the KC area, Garden City CC, and Coffeyville CC have been approved for the course. Coffeyville has yet to hold any courses. Salina ATS has been inactive for about one year. To date about 190 dental assistant scaler graduates are working in 40 counties across Kansas.

Let me conclude my comments by addressing the issue of distribution – both for the 190 new dental assistant scalers (for lack of a better term) and the increase in the number of dental hygienists in Kansas since January 1998. I think you would all agree that the four congressional districts represent a near even distribution of the state's population. On the chart below you can see that the 190 dental assistants who have completed a course of study to coronal scale are disproportionately located in the two most rural of Kansas' congressional districts - the 1st and 2nd Districts. In fact, 50% more dental assistant scalers are located in the 1st and 2nd Congressional Districts than the considerably more urban 3rd and 4th Districts where an overwhelming majority of the states dentists reside. In contrast, the opposite is true of the state's increase in dental hygienists as 66% are concentrated in the 3rd and 4th Districts while a mere 35% have located in the rural 1st and 2nd Districts. Of which, only 11% have located in the most rural 1st District.

Congressional District	Dental Assistant Distribution	Increased RDH Distribution
1st District	31%	11%
2nd District	30%	24%
3rd District	20%	34%
4th District	20%	32%

The KDA does not believe the shortage of dental hygienists is confined t the state's most rural counties. We agree with the definition contained 2001 HB 2312, a dental hygiene scholarship bill introduced by the Kansas Dental Hygienists Association that defines "service commitment area" for areas that dental hygienists could meet its "service" obligation by practicing in underserved areas of Kansas. "Service commitment area" in that bill is defined as the entire state with the exception of four counties. Even in these four counties dental hygienists could qualify for treating undeserved by serving certain populations. This seems to indicate that the KDHA believes the entire state is underserved by dental hygienists as well.

You will now be hearing from proponents: dentists, dental assistants, program instructors, and others, all whom have first hand knowledge of the dental assistant scaling program. They will discuss the training, prerequisites for program admission, Dental Board criteria, who is using the dental assistants, the successes of delivering a higher level of care to more persons-rural, underserved, and urban, and the KDA's past and ongoing commitment and effort to get a new school of dental hygiene in Kansas. We will all show that this 2 ½ year program is working as advertised.

Thank you for your time. The KDA requests that each of you **support SB 50 favorably for passage**.

STATE OF KANSAS

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GOVERNOR

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KANSAS DENTAL BOARD

Legislative Testimony – Senate Bill 50

Stephen R. Haught, President
March 7, 2001

Senate Bill 50 has the support of the Kansas Dental Board. The Kansas Dental Board developed rules and regulations for a special support worker in the dental office. The maturation of the regulations was directly affected by the insight given to the dental board by the Joint Committee on Administrative Rules and Regulations in the August 11, 1998 letter to the Executive Director. The regulations are contained in Article 6 – DENTAL AUXILIARIES of the Kansas Dental Board's Administrative Regulations. Contained in the five parts of Article 6 are the rules by which dental practitioners, course of instruction schools, and the trained workers must act to be part of this special extension of care.

K.A.R. 71-6-1 Definitions.

This part has two definitions that are noteworthy to understand the work of this special training. The first is "coronal". In a dental context, this is the part of a tooth that is visible. The special training course is directed at that anatomical part exclusively. Licensed individuals (hygienists) are educated in the care of all oral tissues, including tooth root surfaces and soft tissues. The dental board had no intention to condense the dental hygiene education experience into a 90-hour block of instruction.

The second definition involves supervision. Auxiliaries work directly with the dentist, who is responsible for the completion of the cleaning and evaluation of the procedure before dismissal of the patient. Hygienists perform their chairside duties under general supervision, and while their care is an integral component of dentistry, they may function without the direct supervision. They have had this right, general supervision to act in patient care in nursing home settings, since 1998. (K.A.R. 71-3-7)

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K.A.R. 71-6-2 Acts restricted.

The "acts restricted" part of the article has been a positive springboard for legal action. The dental board has investigated and reached five settlements with dentists who have violated this regulation by allowing a nonlicensed person whom had not completed the course of training to perform a prophylaxis. Fines for the violation ranged to $5,000. Three other complaints have been investigated, but found to be in compliance concerning the certificate on display part of this regulation.

K.A.R. 71-6-3 Approved instruction course.

The outline of the educational effort was designed to permit educational facilities to best meet the training goals and allow flexibility to meet the needs of the students of the training. The dental board suggests geographic considerations for enrollment and general course outline, including faculty ratios, which are to be within the American Dental Association standards for dental assisting programs. Examinations and minimum course hours are also part of the course approval requirements.

The effectiveness of the programs to date include: Trained dental assistants have returned to their office of employment and provided care, skill, and judgment to patients of record in the removal of hard deposits above the gum line. The data indicates an almost 100% return of the trained personnel to the office that sent them for the training. Practices across the state have these skills being applied in almost every conceivable mode, including doctor only, doctor and hygienist, and multi-doctor and multi-hygienist forms. The programs of training are utilizing training ratios of student/instructor that are in line with the general dental assistant Commission on Dental Accreditation (CODA) standards. Instructors are dental professionals or educators. Facilities for the training vary, but are consistent with good, safe environment as put forth in the CODA standards. The course content of each training program meets or exceeds the standards set forth in the Kansas Dental Board regulations.

Since the dental provider has been the only referral source for trainees, I feel very good about the qualifications of those entering the supragingival scaling program. Having participated in the

training at the Emporia site, I can positively support the faculty, facility, course content and students.

I am grateful that detailed registration and licensure/testing are not part of the requirements of the enabling legislative work. The administrative two-person work force of the Kansas Dental Board could not handle additional licensing/registration duties in its present configuration. Approved courses have been established in each congressional district. The newest approvals are in Coffeyville and Garden City Community Colleges, but have not completed courses as of this date.

K.A.R. 71-6-4 Subgingival scaling.

This provision restates the responsibility of the licensees (dentist or hygienist) to complete the subgingival part of the procedure. No complaints have been made to the Kansas Dental Board concerning a violation of this section. No complaint has been made concerning any less than competent care provided to a patient under Article 6.

K.A.R. 71-6-5 Duty to notify board.

The standard of notification has been upheld. The board has been notified that one trained person has moved from Kansas (family employment related) and another has left the referring dentist's employment and has not taken dental office employment.

I feel the impact on Kansans has been healthy. In addition to the positive personal changes of the trained providers of above the gum line scaling treatment, the Kansas Dental Board has been vigilant in our investigation of reported violations. As stated earlier, in reports against non certificated providers of the supragingival scaling, we have found five dentists in violation. Consent agreements with fines and additional stipulations have been signed. The dentists have ceased the service until properly trained workers could provide the care. Three other reported violations involved the display of the certificate of completion and not unauthorized care. The Kansas Dental Board has not been lax in the new rules enforcement, or "soft" on violators of the regulation.

STATE OF KANSAS

BEN F. BARRETT
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ASSOCIATE DIRECTOR
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August 11, 1998

Ms. Carol Macdonald
Kansas Dental Board
3601 SW 29th Street, Suite 134
BUILDING MAIL

Dear Ms. Macdonald:

At its meeting on August 5, 1998, the Joint Committee on Administrative Rules and Regulations reviewed for public comment rules and regulations concerning preventative dental assistants and procedures performed under general supervision. After discussion, the Committee expressed the following comments.

- General Comment. The Committee believes that the proposed regulations do not comport with legislative intent in the passage of 1998 H.B. 2724. Particularly, the creation of a new category of provider was rejected by the Legislature. Further, the regulations create an unnecessary bureaucratic structure for a program that has a statutory life of three years.

- K.A.R. 71-6-1. Delete, from all of the definitions, reference to a provider category of Preventative Dental Assistant, *i.e.*, delete subsection (i). The new law speaks of "individuals who are not licensed." Additionally, delete subsection (b) concerning an internship program. In subsection (c), delete "an approved preinternship course, and an approved PDA internship program." And, delete subsection (d).

- K.A.R. 71-6-2. Rewrite and delete references to a Preventative Dental Assistant and to a certificate issued by the Board.

- K.A.R. 71-6-3. Revise the regulation deleting reference to Preventative Dental Assistant, a PDA certificate, and to an orientation course.

- K.A.R. 71-6-4. Rewrite this regulation to provide that an unlicenced person would be qualified to provide services if that person has completed a course of instruction approved by the Board. The Board may require proof in the form of a certificate from the entity providing the course of instruction that the applicant has successfully completed. There should be no preinternship course or internship program.

- K.A.R. 71-6-5. Revise the regulation deleting references to PDA. Also, revise the regulation so that the course provides the appropriate training that will prepare the unlicensed person to perform scaling and coronal polishing.

- K.A.R. 71-6-6. Delete this regulation. Again, there should be no internship program.

- K.A.R. 71-6-7. Delete this regulation. There should be no certification given by the Board.

- K.A.R. 71-6-8. Delete this regulation. There should be no renewal since there is no initial certification and there is no need or authority for continuing education.

- K.A.R. 71-6-9. Delete this regulation. There should be no internship program.

- K.A.R. 71-6-10. Revise to delete reference to a PDA.

- K.A.R. 71-6-11. Revise to delete reference to receipt of a PDA certificate and to a PDA in the remainder of the regulation. The appropriate name is unlicensed person.

- K.A.R. 71-6-12. Delete this regulation. It should be made clear that the unlicensed person functions under the direct supervision of the dentist who is responsible and subject to discipline for the actions of the unlicensed person.

- General Comment. Perhaps the Board also should cite in the history section of the regulations its rulemaking authority in K.S.A. 74-1406.

Please make this comment a part of the public record on these regulations. The Committee will review the regulations which the agency ultimately adopts and reserves any expression of legislative concern to that review. To assist in that final review, please inform the Joint Committee in writing, at the time the rules and regulations are adopted and filed with the Secretary of State of any and all changes which have been made following the public hearing.

Sincerely,

William G. Wolff
Associate Director

WGW/jar

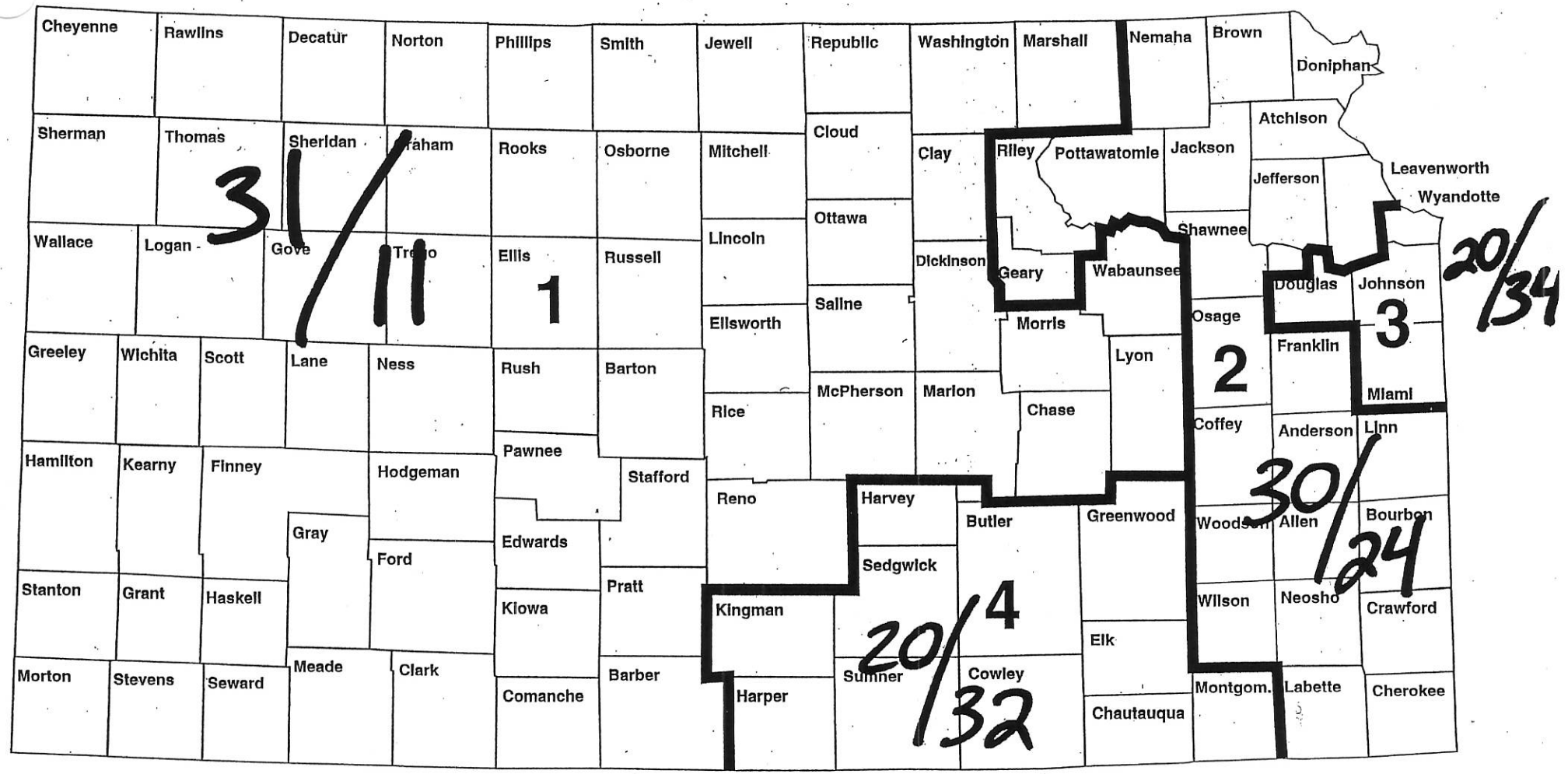
Kansas Dental Board Licensees

Dentists				Dental Hygienists			
Year	Exam	Credentials	TOTAL	Year	Exam	Credentials	Total
1996	42	20	62	1996	65	17	82
1997	49	14	63	1997	85	15	100
1998	54	14	68	1998	65	22	87
1999	27	22	49	1999	77	15	92
2000	39	16	55	2000	71	14	85

Note: These figures represent original licensure in Kansas and do not indicate the number of new licensees actively practicing in the state.

Source: Kansas Dental Board

U.S. Congressional Districts in Kansas: 1992



Top # = % of statewide dental assistants who have completed training

Bottom # = % of statewide increase in dental hygienists since 1998

Source: KS Dental Board
Steve R Haught

Rupp

SB 50

- The continuation of the dental assistant supragingival scaling program is directly tied to the shortage of dental hygienists
- Because of the shortage of registered dental hygienists in Kansas, the supragingival scaling program must be continued

The Shortage of Hygienists

- According to popular dental literature, dentists from around the country continue to be hampered by an inadequate supply of Hygienists. (Studstill, J Am Coll Dent; Cox, Ohio Dent J; Meskin, JADA.
- A survey of the Kansas Academy of General Dentistry found that 80% of Kansas dentists perceived a shortage of hygienists. (Rupp, 1996)

- A needs study done by Colby Community College found that 75% of the dentists responding felt there is a great need for a dental hygienist program in western Kansas (Mildrexler 1996)

Hygienist Shortage (cont.)

- The Kansas Dental Association is keenly aware of the shortage of dental hygienists and has been striving for over five years to increase the number of graduating dental hygienists
- We have been minimally effective

Kansas Dental Association(KDA) Efforts

- Wichita State University
- Johnson County Community College
- Colby Community College
- Cowley County Community College
- Fort Hays State University
- Lablette County Community College
- Flint Hills Area Technical College
- Kaw - Topeka
- Manhattan Area Technical College
- Hutchinson Community College
- Garden City Community College
- Pittsburgh State University
- Dodge City Community College
- Concorde Career Colleges

Kansas Hygiene Programs Enrollment and Graduates (Source: American Dental Association, Survey Center, 1998/99 Survey of Allied Dental Education)

JCCC 1st year capacity	26
1st year enrollment	27
2nd year enrollment	20
Graduates	21
WSU 1st year capacity	30
1st year enrollment	32
2nd year enrollment	28
Graduates	31

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Colby Community College 2001 Class

- 391 packets mailed
- 122 interested students in Colby's 14 county service area
- 186 interested if you stretch to Salina
- They have 30 meeting all requirements
- They have accepted 12 for the next class

Colby Community College Current

- First year class 12
- 2nd year class 9
- Graduates 4
- Pass rate on Central Regional Dental Testing Service – 100%

Prepared for KS Legislature 1/11/99

- 36 Kansas Counties have no practicing hygienists
- 13 Kansas Counties have no practicing dentists

House Committee on Public Health and Welfare

Melanie Mitchell, Dental Assistant Program Specialist
Wichita Area Technical College
3/7/2001

Testimony in support of Senate Bill 50

In response to the legislation passed 3 years ago, which allows experienced dental assistants, with appropriate training, to perform supragingival scaling, a 90 clock hour course was developed. This course is designed for experienced dental assistants to expand their skills in preventive dentistry, specifically to provide instruction in supragingival scaling and polishing.

Currently, 5 technical/community colleges offer the course. Three of these institutions also offer entry-level dental assistant programs that are accredited by the Commission on Dental Accreditation of the American Dental Association (CODA). This accreditation is an endorsement by the American Dental Association that dental assistant programs are meeting the educational requirements and maintaining the educational quality that is clearly specified in the program standards established by the Commission on Dental Accreditation of the American Dental Association. Initially, these three ADA accredited institutions jointly developed the supragingival scaling course in accordance with the Kansas Dental Board guidelines. Currently, all institutions offering the scaling course use basically the same curriculum and pre-requisites. All participants must provide proof of one of the following eligibility pathways:

1) Graduate of an ADA accredited dental assistant program and Certified Dental Assistant (CDA) and 6 months of experience **OR**
2) Two years of chairside dental assisting experience and CDA **OR**
3) Three years of previous chairside dental assisting experience within the past five years

To date, approximately 190 dental assistants have completed the program. Almost all of the dental assistants enrolling in the course were sponsored by their dentist employers and continued in their employ after course completion.

Student curriculum materials include a dental hygiene textbook and approximately 55 instructional modules from the University of Kentucky that include content in tooth and periodontal anatomy, collecting patient information,

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instrumentation and scaling, polishing, periodontal disease, nutrition, patient education, communication skills and radiology. The University of Kentucky also has videos and slides to supplement instruction. These are being utilized as well as additional teaching aids from other sources.

The supragingival scaling course is approximately 50% didactic and 50% hands-on skill practice. Skills are systematically evaluated with competency checklists, written exams are given over didactic material and a final written and clinical examination are administered. Evaluation instruments and required competencies have been developed and utilized in the same manner as in the entry-level accredited dental assistant programs. Even though there are no specific accreditation standards that apply to the supragingival scaling course, the same high standards required of any ADA accredited dental assisting program were and are utilized in determining curriculum, instructor qualifications, evaluation methods and student/teacher ratios. Course instructors are both registered dental hygienists and licensed dentists.

Demand for dental services continues to grow while there continues to be a shortage of dentists and dental hygienists. Senate Bill 50 will allow the dentist to continue to more fully utilize the skills of the dental assistant to provide patient care.

House Committee on Health and Human Service

Bill SB-50

My name is Leah Sperry.I am a certified dental assistant from Garden City, where I have lived my whole life and have been a dental assistant for 16 years. This scaling course enables me to deliver quality care to our patients and for the patients in rural areas to receive the care they need, without traveling to a large city. There is a huge shortage of dental hygienists in our area. Many dentists have advertised for hygienists to move to our area to with NO response.

Dental assistants are not trying to take jobs away from hygienists. There is a huge need for their expertise treating areas of the mouth we cannot work on. Graduates of the supragingival scaling program are held to the same standards within our area of treatment as hygienists. We feel like we are helping our hygienist by taking care of the needs of the kids and teenagers who do not usually need extensive treatment. This allows our hygienist to spend more quality time with the majority of our adults, new patients and those with gum problems.

Our office is one of the lucky few to have a full-time hygienist. I thank God everyday for her. There are 12 general dentists in Garden City and only two offices are able to have a hygienist on their team. My dentist feels that a hygienist frees him up to do more needed restorative dentistry just as an assistant frees up a hygienist to take care of adults and teens with more advanced gum problems. Thus more people will have access to the dental care they need and deserve. This is called team work!

When I took the supragingival scaling course there were 12 dental assistants in the class. We were in Wichita for a portion of our classes and one of the instructors, who happens to be a memeber of the Kansas Dental Board was amazed to find out that we had over 130 years experience in our class alone! Many of the dental assistants that are currently in the class in Garden City each have 10-18 years of experience.

I have an aunt in Oklahoma that used to be a teaching dental hygienist. I was explaining this course to her and she thought it would have been wonderful to have an assistant with the supragingival program helping her when she was a hygienist. She said it would have given her more time to spend with the patients that required her expertise and training.

We feel that if a hygiene program was to come to Garden City Community College, it would help with our shortage. A lot of dental assistants would like to go on to become a hygienist, but are unable to move due to a husband's job or family responsibilities!

Not all hygienists are against the program. Several hygienists in Wichita help teach and praised us for taking this course. Two hygienists in Garden City are also helping teach because they recognize the need in rural areas.

This course has increased the quality and access to care of the public in rural areas. If the sunset date is not lifted, are we asking people in rural areas to drive four hours every six months to have their teeth cleaned?????? Think of the impact this could cause on our area and the neglect that would occur.

I would like to thank the committee for listening to all sides of this difficult issue. Please let us continue to take the best care of our patients that we can. The patients are the only ones to lose if this program does not continue.

House Health and Human Services Committee
Testimony of Natalie Eastman
In Support of SB 50
March 7, 2001

Chairman, Representatives, my name is Natalie Eastman, a RDH from Wichita. I would like to first thank you for allowing me the opportunity to testify in favor of the dental assistant scaling program. It is important to give you some history about me, which leads to my stand in supporting SB 50.

I grew up in Fredonia, KS, which is a rural community in the Southeast part of Kansas. The last two years of high school I had the privilege of working in a dental office after school and during the summer months. At the time I began considering the profession, dental hygienists did not exist in my part of the state. It was the combination of the dentist and dental assistant who did all the cleanings for the patients. Today the supply of dental hygienists continue to be very limited and many communities cannot recruit a dental hygienist.

After receiving my bachelor's degree and becoming a Registered Dental Hygienist it was the hope of the dentist back home that I would return to the community and establish a career there. That was not the case; I married right after graduation and moved to Woodward, OK, where for a number of years I held both a Kansas and Oklahoma license. I was able to secure a job four months before moving there.

Remember the dentist back in Fredonia…4 years after I left, another young girl started working in his office and chose the same path that I took and she also did not return. Today they still do not have a dental hygienist working in their office but they have taken the opportunity to send one of their dental assistants through the supra gingival scaling course!

I have been a dental hygienist for 14 years and out of those I have worked for the same dentist for 12 years in Wichita, Kansas. Yes, I am one of those statistics that did not stay very long in the rural setting after completing my degree. This is one of the most important reasons why the SB 50 was introduced…to provide competent care and reach more people throughout our state of Kansas. In our office we have 4 Registered Dental Hygienists and 5 dental assistants, 3 of those who have gone through the suprgingival scaling coarse. I also have significant knowledge of what is being taught in the supragingival scaling coarse that is being given to the dental assistants, as I am one of the instructors. The past two classes that I have taught at the

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Wichita Area Vo-Tech College have given me continuous interaction with the students in the classes. I can stand here proudly and give you reassurance that the quality of skills that these students acquired while attending the courses is outstanding. Both classes had 11 students who completed the courses and the average number of years of dental assisting experience was between 8-10 years, with many having over 15 years of experience. The feedback that the students gave us was unbelievable and the enthusiasm they had for learning and study was very positive. The dental profession should be proud of these highly skilled individuals. I would encourage any dental hygienist that has concerns about the quality of the program to review the training material or better yet, sit in on some of the lectures or attend the clinical sessions. It has been a great review for me, even as a dental hygienist, and it is very important in any field that we continue the learning process.

In a perfect world I'm sure that it would be best to have a Registered Dental Hygienist in every dental office. However the stark reality is that there will never be enough dental hygienists to fill the demands in all the far-reaching areas of Kansas. I know that after being in this profession for many years that there will always be a need for highly trained dental assistants in this state. Hence there will always be a need for continual training including the supragingival scaling course for the dental assistant.

I would like to leave you not with figures and quotes but a thought. You see, I view the dental profession, as a whole, like being in a choir. The choir requires each section to be in harmony with each other. This supragingival scaling coarse is like adding another note in each cord to produce an even greater degree of harmony in the dental office, thus providing the best possible care for the patients who have life long dental needs.

House Committee on Health and Human Services:

Greetings from way out west where the deer and the antelope play and seldom is heard a discouraging word. I am grateful for the opportunity to perhaps illustrate the unique dental-health care situation in southwestern Kansas.

I have been practicing dentistry in Ulysses since 1970. During those thirty years I have been able to employ a part-time hygienist for most of the time; they generally have been willing to work two or three days a week. We have had several maternity leaves during this time because the good Lord has blessed their homes with seven children. Bless their hearts--I love every one of them.

Please allow me to illustrate the problem. Everyone in my practice is in agreement--the hygienist wants to do the prophies (cleanings), the assistants want the hygienist to do the prophies, the patients want the hygienist to do the prophies, and I want the hygienist to do the prophies. Everyone wants the hygienist to do the prophies!! But the reality is in the four southwestern Kansas counties where Ulysses, Hugoton, Elkhard, Johnson and Syracuse are located, I employ the only registered dental hygienist there is and she will work only two days a week. She is married to an attorney and has two small children and two days a week is all that she chooses to be away from her family. As laudable and proper as this decision is, what am I to do with the patients on the other days of the week? Is my patient flow limited to availability (or unavailability) and the amount of hours my hygienist decides to work?

Before the new interpretation of our dental practice act, the dentist had latitude in training our assistants. Over time, as they developed their skills, we could delegate some procedures to them that were reversible. Most of my assistants were in my employment for several years. As of a few months ago the staff tenure was 22 years (includes three years with an orthodontist), 17 years, 16 years, and 12 years. These girls became quite gifted and could masterfully do many delegated assignments which, incidentally, were more demanding than polishing teeth.

Because of our sparse population and the rather large distances between towns, many of our patients travel for approximately an hour or more for treatment. And to minimize the number of trips, usually several family members want to be seen simultaneously. So the scenario is--if dad and mom come with two or three kids for their six month checkups, do they have to wait until they can be seen only on a day when the hygienist is there? And do they have to wait in the reception room until she can see every one in order (vertically) or can I use my professional judgement to make a decision for their best care? In this case, while the hygienist is doing the recalls for the adults, one of our more

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experienced assistants can be doing the children (horizontally). Even though I thoroughly check all of the patients at the end of the prophies--during this treatment time I am having to care for someone who has a broken tooth, or needs treatment that only the dentist can provide.

Let us focus on a solution. The supragingival-scaling course is good and I applaud it. But it is not the sole solution to the problem. For example, one of my assistants who had been with me for seventeen years was in the first class held in Garden City and Wichita. I paid for her tuition and supplies, motel, food and mileage, plus her regular hourly wage while she was in school. Approximately thirty days after receiving her certification she quit as a result of a conflict with another employee and went to work for another dentist. All of this happened while my part-time hygienist was on maternity leave. So all of last summer, until she returned in September, I had no employee who was certified to do prophies--even though I still had two assistants with a combined tenure of 38 years. Ladies and gentleman, there is definitely something wrong with this picture!!

I cannot leave patients who are needing broken teeth repaired, root canals for pain and swelling, or teenagers who need to have their bite orthodontically corrected, to take bitewing x-rays, give oral hygiene instructions, and polish the teeth of a young patient who really does need this service.

This debate is NOT about money. We are not trying to make hygienists out of assistants. If I could employ one or two full time hygienist today, I would jump up and down and click my heels together. But there are NONE available. I pay $30 an hour plus a $25 commission for each patient seen over five for each half day.

I can understand it--if I were a young, recently graduated R.D.H. I wouldn't stay in western Kansas either. Not when Denver, Amarillo, Wichita and Kansas City are beckoning. Even with the addition of the hygiene program in Colby and, hopefully, in Garden City--the real trick is to get the girls to stay in western Kansas after graduation. The supragingival-scaling course is a help, but the results are limited, expensive and uncertain.

The best scenario is to allow each dentist to use his or her professional judgment to delegate those reversible tasks to the staff who have been properly trained on site. This is how the dentists in southwestern Kansas practiced for decades and so did I until the change in the interpretation of the practice act. My recommendation for the optimum dental health care of our wonderful residences in southwestern Kansas is:

1) to fund a new Registered Dental Hygiene program in Garden City

2) to continue with the supragingival scaling course for assistants in Garden City

3) to allow dentists the flexibility of delegating some of the prophylaxis procedures to qualified staff--some of which may still be waiting in line to take the expanded duties course. Without this flexibility, the preventive procedures which could and should be available to all of the patients won't be done at all, or at best, in a very limited way.

My wife made a little bar graph of the preventive need in the S.W. 5 counties and the available hygiene services. The illustration speaks for itself.

Sincerely,

Ted J Maple, DDS

Gaches, Braden, Barbee & Associates

Governmental Affairs & Association Management

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Testimony of Ron Gaches
On behalf of Kansas Dental Hygienists Association
Regarding SB 50 – Eliminating the Sunset of the Dental Assistant Scaling Program
House Health and Human Services
Wednesday, March 7, 2001

BACKGROUND. In 1995 the Attorney General rendered an opinion regarding the Kansas Dental Practice Act and who was authorized under the Act to polish and scale teeth. Attorney General Stovall issued an opinion that the only persons authorized under the Act to polish and scale teeth were dentists and dental hygienists. At the time, many dentists were using dental assistants to polish and scale teeth. There was not available at the time an immediate supply of dental hygienists to take the place of all the dental assistants who were working in violation of the law.

In 1998 the Kansas Dental Association asked for introduction of a bill to allow dental assistants to polish and scale teeth. The Kansas Dental Hygienists Association opposed the bill arguing that there was not a significant shortage of dental hygienists, only a distribution problem; that dental assistants lacked the education in dental health to replace dental hygienists; and that only licensed and certified dental professionals should be given the authority to polish and scale teeth.

Following a hard-fought lobbying effort by both sides, the Legislature ultimately passed a bill that authorized the Kansas Dental Board to approve training programs to teach dental assistants to polish and scale teeth above the gum line. Per the bill, the training programs were to be consistent with Commission on Dental Accreditation standards. The bill did not require any certification, licensure or standardized testing of the scaling assistants. Dentists who had been using dental assistants to provide polishing and scaling procedures prior to the change in law were never identified or penalized by the Dental Board.

REASONS TO OPPOSE SB 50. Continuing the dental assistant scaling program is not the correct solution to the shortage of dental providers. In fact, continuing the scaling assistant program may put Kansas' consumers at long-term risk of reduced dental health.

Dental assistants are not being adequately educated to perform the scaling of teeth.

Dental assistants are not authorized to scale teeth beneath the gum, which is the procedure essential to dental health.

Polishing and scaling above the gum line is only a cosmetic procedure. It makes our teeth look and feel good but does nothing to prevent periodontal disease.

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KDHA does not believe that dentists have the time, or will take the time, to properly complete the scaling work beneath the gum. As a result, many patients will never receive proper preventive dental care.

The scaling assistant programs being approved by the Kansas Dental Board do not meet CODA standards for dental assistants' training and are in violation of the 1998 law. There are no CODA standards specific to dental scaling assistants and no other state has authorized dental assistants to scale teeth. The Kansas programs don't meet even the minimum CODA education standards for an accredited dental assistant program.

188 scaling assistants have graduated from scaling assistant training programs to date. Apparently none of these assistants has ever failed the program and there are no state testing or continuing education requirements for these assistants.

Most of the scaling assistants are located in urban areas in which there is not a shortage of dental hygienists. Instead these scaling assistants are taking jobs that otherwise would be filled by dental hygienists.

According to data provided by the Kansas Dental Board, 73% of the scaling assistants are working in areas that were not defined as underserved in 1998. Only 27% are working in underserved counties.

Moreover, a large number of these scaling assistants are concentrated into relatively few offices in primarily urban areas. Of the 188 scaling assistants, 84 are working in 33 offices that employ more than one scaling assistant. One office in Topeka with two dentists employs seven scaling assistants and no dental hygienists.

It is true that there are dentists, particularly in some rural parts of our state, who have had difficulty hiring a dental hygienist. It seems likely that some, perhaps many, of these dentists were allowing dental assistants to polish and scale teeth prior to the Attorney General's opinion.

Despite the assurance of dentists and staff from scaling training programs, KDHA believes the education scaling assistants receive is inadequate to properly perform the services expected of them.

Kansas is not unique in having a shortage of dental health care providers. But the primary shortage is the number of dentists. Nationally, the number of dentists is declining each year. Eighteen states, including Kansas, have no dental schools and six schools have closed in recent years.

In the meantime, the number of dental hygiene schools and dental hygienists is increasing significantly. In Kansas, there are 177 new dental hygienists in just the last two years.

It is worth noting that Kansas is the only state that allows unregulated staff to scale teeth on patients. No other state had in place a scaling assistant program similar to ours prior to 1998 and no other state has duplicated our program since its passage.

Ironically, these 188 scaling assistants do not represent new dental care personnel. Virtually all of them were already serving as dental assistants. In most instances their dentists are paying the cost of the scaling training program. Many are paid their wages while attending these programs. We assume many of these scaling assistants are the assistants who were previously providing scaling procedures in violation of the law prior to 1998.

There is a financial incentive for a dentist to employ a scaling assistant instead of a registered dental hygienist. The typical Kansas salary for an experienced Registered Dental Hygienist is $20-30 per hour and the average salary is about $22. Dental assistants make several dollars less per hour. A dental office that employs several scaling assistants in lieu of registered dental hygienist can reduce its labor costs by thousands of dollars per year.

More importantly, most of the scaling assistants are working in urban areas, where there is not a shortage of dental hygienists, instead of the rural parts of the state where professional dental staff are in short supply.

There appears to be a finite number of dental assistants who have interest in becoming scaling assistants. Or, there appears to be a finite number of dental assistants who need to be trained as scaling assistants in order to address the legal issue raised by the Attorney General's opinion.

This is evident by the trouble that some scaling assistant programs are now having in attracting students. The Salina program does not currently have a class and has not since 1999. The Wichita program has recently cancelled a class due to lack of student interest.

Our concern is where do the remaining scaling assistants work? What positions are they filling? When do they start to fill positions that would otherwise be filled by dental hygienists?

And how do these scaling assistants help address the needs of the indigent and elderly? With limited training, they should never work with out the direct supervision of their dentist. They do not have the education to perform assessments or provide preventive education services.

The comparison between the scaling assistant and dental hygienist is similar to the difference between having an oil change done by the rookie employee at one of the jiffy lube facilities versus taking your car in for service from a qualified mechanic. The rookie may get your oil changed. With a little luck your car won't leak oil when the rookie has completed the job. But there is little the rookie can do or should do to assess what might be wrong with your car.

There is a final area of concern and that is adequate enforcement of the current law. We know there were dental assistants performing polishing and scaling work in violation of the law prior to the Attorney General's opinion. We don't know how many or where. Our concern is how many scaling assistants will continue to violate the law by completing the prophylaxis beneath the gum. This is a procedure that they are not trained or authorized to perform. As we have

listened to dentists describe their practice (the pressures they are under to see patients, the waiting lists and shortage of dentists) we believe there is a very legitimate question about enforcement of the law.

WHAT SHOULD BE DONE?

KDHA opposes continuation of the scaling assistant training programs. Determination of the adequacy of the scaling assistant training programs should not be a political decision and should not be based on the need for additional dental care personnel. Instead, the need for and adequacy of this program should be based on its contribution to the dental health of Kansans.

KDHA proposes that the sunset of the scaling assistant should be extended for one year while Legislative Post Audit conducts a comprehensive review of the effectiveness of the scaling assistant program. That study should include:

1. Has the 1998 law actually resulted in the addition of new dental staff and, if so, how many?
2. Are dental assistants receiving sufficient education and training to properly polish and scale teeth, make dental health assessments and educate patients in dental health to take the place of dental hygienists in a professional dental care setting?
3. Are patients aware of the difference in education and training between registered dental hygienists and scaling assistants?
4. Are patients informed of whether a registered dental hygienist or scaling assistant is polishing and scaling their teeth?
5. Are patients being informed of the need for scaling beneath the gums to adequately guard against periodontal disease?
6. Are dentists who utilize scaling assistants actually completing a full scaling of the teeth?
7. Does the Kansas Dental Board have in place an adequate inspection and enforcement program to ensure that scaling assistants are not scaling beneath the gum line and that dentists are completing the scaling beneath the gum line?

In 1998 the Legislature created the Dental Hygienist Training Committee to review the shortage of dental care providers. That Committee made several recommendations to increase the number of registered dental hygienists serving Kansas. Most of those recommendations have been ignored. The Legislature should act on those recommendations to ensure that all Kansans have the opportunity to receive proper dental health care and dental hygiene education.

Conducting a Legislative Post Audit study will give you the opportunity to collect data that is without bias. You will learn what is really going on in dental offices based on empirical evidence instead of assertion and opinion.

Based on the outcomes of the Post Audit study, you may be faced with the question of what to do with the scaling assistants who are already working in dental offices.

One option is to do nothing and allow the elimination of the scaling assistants authority to polish and scale teeth. That action would be wholeheartedly supported by KDHA, and we believe, in the best long-term interests of the dental health of Kansans.

A second option would be to pass Senate Bill 50, thereby allowing the expanding use of scaling assistants in Kansas dental offices. This option, we believe, poses risk to the long-term health of Kansans and will significantly discourage dental hygienists for wanting to practice in Kansas. Terrie Higgings will speak further about this point.

A third option would be to grandfather in all of the scaling assistants who have taken the 90-hour programs and allow them to continue to provide services under the current law and to discontinue the training of any additional scaling assistants.

This option would allow dentists who had relied on dental assistants to polish and scale teeth prior to 1997, and who have sent their assistants to scaling training since 1998, the opportunity to continue doing business as they have in the past.

And it allows the gradual replacement of those scaling assistant, do to retirement or otherwise, by registered dental hygienists who are continuing to increase in number in Kansas.

Other specific actions that should be taken include:

- Pass a loan scholarship program for dentist and dental hygienist modeled after the medical provider program
- Increase the Colby Community College Dental Hygiene program from a class size of 12 to 18.
- Provide financial assistance to dental hygiene education programs that are supplying registered dental hygienists to rural areas.
- Work with the Kansas Dental Association to increase the number of dentists serving the underserved parts of the state.

The Kansas Dental Hygienists Association wants to work the Legislature, Kansas Dental Board and Kansas Dental Association to create a balanced solution that provides for adequate dental care professionals while maintaining a high standard for quality of care. Compromising the quality of care for Kansans should be the last choice. There are many options available rather that passing Senate Bill 50 in its current form.

Teresa Higgins, President of KDHA, and Denise Maus, Chair of the KDHA Legislative Committee, will expand on several of the issues I have raised. Thank you for your time. I look forward to answering your questions following our testimony.

Distribution of Unlicensed, Unregulated Dental Scaling Assistants in Kansas

Region *(*identified as underserved at time of enactment of HB2724 and listed in order of highest need)*	**Number of unlicensed, unregulated personnel practicing**	**Percentage for each region** *(rounded)*
***Southwest Region** **Counties** -Clark (2) -Finney (14) -Ford (5) -Grant (2) -Hamilton (1) -Kearny (1) -Kiowa (1) -Scott (1) -Seward (1) -Stafford (3)	31	16%
***Southeast Region** **Counties** -Allen (1) -Anderson (2) -Bourbon (1) -Crawford (1) -Labette (1) -Lyon (9) -Montgomery (1) -Wilson (1)	17	9%
***Northwest Region** **Counties** -Decatur (1) -Ellis (1) -Mitchell (1-seeking employment) -Rooks (1) -Sheridan (1)	4	2%
Region *(not identified as underserved)*	**Number of unlicensed, unregulated personnel practicing**	**Percentage for each region** *(rounded)*

Northeast **Counties** -Atchison (6) -Dickinson (1) -Doniphan (1) -Geary (2) -Jefferson (1) -McPherson (2) -Marion (2) -Nemaha (1) -Osage (9) -Pottawatomie (1) -Riley (3) -Saline (1) -Shawnee (27)	57	30%
South **Counties** -Cowley (6) -Harvey (1) -Reno (4) -Sedgewick (25) -Sumner (1)	37	20%
Greater Kansas City **Counties** -Franklin (4) -Johnson (29) -Miami (1) -Wyandotte (9)	43	23%
Total:	188	100%

*** % practicing in underserved areas = 27%**
% practicing in areas not identified as underserved in 1998 = 73%

Source: Kansas Dental Board 1/1/01

Missing the Mark

Oral Health in America

C-

The Oral Health America National Grading Project

Funded in part by the W.K. Kellogg Foundation

Oral Health Report Card

Fall 2000/United States

GRADE: C–

PREVENTION: C

Fluoridation

State Oral Health Program

Sealants

Visits to Dentists
Adult/Older Persons

Use of Smokeless Tobacco

ACCESS TO CARE: D

Prevalence of Dentists

Prevalence Dental Clinics

Medicaid Dental Program

Dental Insurance Status of Adults

Dental Insurance Status of Elderly

HEALTH STATUS: C

Oral Health of Children

Adult Tooth Loss

Edentulous Elderly

Oral Cancer Rate
Male/Female

9-2

Teacher Comments

When it comes to oral health, America is like a student with straight "A" potential in danger of failure. The nation has made great progress over the decades in improving oral health. The nation's economy is moving at a record pace. Medical and scientific progress has opened a new understanding of oral health. Yet, serious gaps in prevention and access have halted progress and are putting the health status of the nation at risk.

This is why America's overall oral health report card grade is a "C-." There are ways the nation's oral health grade can be improved. A national effort to end what the U.S. Surgeon General has described as a "silent epidemic" of oral diseases should be undertaken. Failure to do so will result in serious, long-term health consequences to our nation, especially our children. There is much room for improvement:

- Tooth decay is the single most common chronic childhood disease—five times more common than asthma and seven times more common than hay fever.
- More than 90 percent of all systemic diseases have oral manifestations.
- By the age of 45, more than 99 percent of Americans have experienced tooth decay, which is largely preventable.
- Only 15 percent of the elderly have any type of dental coverage.
- Someone dies from oral cancer every hour in the U.S.

Oral health is the gateway to overall health. Good oral health should begin at birth and last a lifetime. This report card provides baseline measures of how the nation is meeting its oral health needs. It is a direct follow-up to the landmark report, *Oral Health in America*, issued earlier this year by the U.S. Surgeon General. It examines three critical areas: Prevention, Access to Care and Health Status. Looking at these three areas on a state-by-state basis will help to identify where there are strengths and where programs need to be strengthened.

PREVENTION

Prevention is the most effective way to maintain a lifetime of good oral health. The national grade of "C" must be improved. The 50 states and the District of Columbia have a very mixed track record. Some states have brought what has been described as the most powerful public health tool—fluoridation of drinking water—to their public water supplies. Other states have failed to bring this cost-effective prevention measure to even 10 percent of their residents. While there is much room for improvement, some states are starting to make a real commitment to establishing oral health programs. Illinois, New York, Hawaii and North Dakota stand out as leading examples of the difference a commitment to oral health can make. These states, among seven that received an "A" for their dental program, have expanded clinics, established school-based programs and initiated other innovative partnerships to improve oral health. Of concern in this category are the number of states that received a grade of incomplete.

ACCESS

Access to oral health care is a national problem. For this key category, the nation received its worse grade, a "D." Many states have too few dentists to fill the gap. Dental clinics are too few and far between. The Medicaid dental program is inconsistent from state to state. Perhaps the most significant access problem is the lack of dental insurance coverage. Private health insurance is designed to be the cornerstone of the American health care system. Dental insurance, however, is not part of that foundation. Over 108 million Americans have no form of dental coverage. For older Americans, the vast majority of states fail in providing even one in four with dental coverage.

ORAL HEALTH STATUS

Oral health status comprises the overall condition of the mouth and related diseases. For oral health status, the nation receives a "C." Too many children have too many cavities. Starting a child off with poor oral health can begin a downward health spiral that causes major problems later in life. The poor oral health of children often translates to more cavities for children, increased adult tooth loss and eventually the total loss of teeth as people age.

These trends can be reversed. It will take a national commitment coupled with strong local and state efforts. More attention to state-specific data will help track progress in this area. Some states will need to do more, but no state can afford to sit back and let these trends continue or these grades slide any further. With an increased effort to incorporate oral health as a key part of overall health, needed policy changes and increased public-private partnerships, America can make the grade.

Grading Scale

METHODOLOGY

Oral Health America gathered available public health information to develop the database for this report card. The most recent primary data sources possible were used. Whenever possible, centralized data sources from the Centers for Disease Control and Prevention, including oral health modules of the Behavioral Risk Factor Surveillance System, were utilized. State data were obtained from state dental directors whenever possible. Information was also obtained through reports of the Surgeon General, the Government Accounting Office, Campaign for Tobacco Free Kids, and the North American Association of Central Cancer Registries.

The grades scales are based upon both obtainable and desired levels of achievement for oral health. As indicated below, the national means for some categories are the basis for the measurement criteria. For other categories, a threshold is used to establish levels aimed at achieving optimal oral health.

The specifics for each category are:

PREVENTION

FLUORIDATION

Percentage of U.S. Public Water Supply Population Using Fluoridated Water

A = 90% +

B = 80 - 89%

C = 65 - 79%

D = 50 - 64%

F = 0 - 49%

STATE ORAL HEALTH PROGRAM

Grades are based upon size and scope of programs. Minimal requirements for a passing grade include having a dental director.

SEALANTS

Sealants are vital in preventing cavities, especially in young people. This category measures the percentage of children with one or more dental sealants. The collection of more consistent data on a national basis would enhance efforts to track this important category.

A = 70% +

B = 69 - 50%

C = 49 - 39%

D = 38 - 14%

F = 13 - 0%

Grading Scale Continued

VISITS TO DENTISTS

Dental visits are vital to maintaining and preventing good oral health. Although every person is supposed to have a check-up with their dentists every six months, many people do not even make a visit once a year. This category measures the number of individuals, both adults and older persons, reporting a visit to the dentist or dental clinic in the past year.

Adults	*Older Persons*
A = 100 - 80%	A = 100 - 80%
B = 79 - 66%	B = 79 - 66%
C = 65 - 51%	C = 65 - 51%
D = 50 - 40%	D = 50 - 40%
F = 39 - 0%	F = 39 - 0%

USE OF SMOKELESS TOBACCO

The use of smokeless tobacco can lead to a lifelong addiction to nicotine. This category measures the percentage of high school males who use smokeless tobacco products.

A = 0%

B = 1 - 10%

C = 11 - 19%

D = 20 - 29%

F = 30% +

ACCESS TO CARE

PREVALENCE OF DENTISTS

An adequate number of dentists to serve the population of each state are key to providing access to oral health care. The following scale, based upon the ratio of dentists to the state population, provides the basis of measurement for this grading.

A = 1 : 500

B = 1 : 501 - 999

C = 1 : 1,000 - 1,600

D = 1 : 1,601 - 1,999

F = 1 : 2,000 +

PREVALENCE DENTAL OF CLINICS

The availability of dental clinics is critical in measuring a state's ability to provide care for those who have no other means of obtaining care. For this category the number of community-based, low-income dental clinics is compared to the population of each state. The result is a ratio of number of people to one clinic.

A = 1 : 99,999

B = 1 : 100,000 - 500,000

C = 1 : 500,001 - 999,999

D = 1 : 1,000,000 - 2,999,999

F = 1 : 3,000,000

MEDICAID DENTAL PROGRAM

Access to the Medicaid Dental Program in each state is based upon the percentage of dentists accepting Medicaid reimbursement. Understanding that this is directly connected to providing dentists a fair level of compensation for services, grades were increased for higher levels of reimbursement in each state. An additional factor taken into account for this category is the Medicaid dental coverage provided for adults in each state. The level of the existing program, indicated as full, partial, or none, either raised or lowered this grade.

A = 90% +

B = 89 - 79%

C = 78 - 50%

D = 49 - 31%

F = 30 - 0%

DENTAL INSURANCE STATUS OF ADULTS

Private medical insurance is the gateway to care for most Americans. This scale measures the percentage of adults, 18 and over, in each state without dental insurance.

A = 0 - 25%

B = 26 - 36%

C = 37 - 49%

D = 50 - 59%

F = 60% +

DENTAL INSURANCE STATUS OF ELDERLY

Older people often have special oral health needs. As Medicare does not provide dental coverage, this measure examines the percentage of people age 65 and over without dental insurance.

A = 0 - 25%

B = 26 - 36%

C = 37 - 49%

D = 50 - 59%

F = 60% +

Grading Scale Continued

HEALTH STATUS

ORAL HEALTH OF CHILDREN

Good oral health begins at birth. Proper steps taken early on can ensure a lifetime of positive oral health for each person. However, too often poor dental habits begin in childhood with the pattern continuing to old age. The Oral Health of Children category measures the percentage of children with one or more cavities.

A = 0 - 35%

B = 36 - 46%

C = 47 - 59%

D = 60 - 69%

F = 70% +

ADULT TOOTH LOSS

Adult tooth loss is a major indicator of a lifetime of poor oral health. This scale is based on the percentage of adults, 18 and older, having lost six or more teeth.

A = 0 - 6%

B = 7 - 17%

C = 18 - 23%

D = 24 - 34%

F = 35% +

EDENTULOUS ELDERLY

This scale measures the percentage of people 65 and older without any natural teeth.

A = 0 - 14%

B = 15 - 22%

C = 23 - 33%

D = 34 - 44%

F = 45% +

ORAL CANCER RATES

Based upon the mean for each sex in all 50 states and the District of Columbia, the following scale measures mouth and throat cancer incidence rate per 100,000 people based upon data from the North American Association of Central Cancer Registries.

Male	*Female*
A = 0 - 11	A=0 - 3.8
B = 12 - 14	B = 3.9 - 4.8
C = 15 - 17	C = 4.9 - 5.9
D = 18 - 21	D = 6 - 6.9
F = 22 +	F = 7 +

The National Grades

Fall 2000 Oral Health Report Card:

	PREVENTION	Fluoridation	State Oral Health Program	Sealants	Visits to Dentists- Adults	Visits to Dentists-Elderly	Use of Smokeless Tobacco	ACCESS TO CARE	Prevalence of Dentists	Prevalence of Dental Clinics	Medicaid Program	Dental Insurance-Adults	Dental Insurance-Elderly	HEALTH STATUS	Oral Health of Children	Adult Tooth Loss	Edentulous Elderly	Oral Cancer-Male	Oral Cancer-Female	STATE GRADE
ALABAMA	C-	B	D	C	C	D	D	D	F	B	F	C	F	C	B	D	D	B	D	D
ALASKA	C-	D	f	i	B	B	D	C	C	C	C	B	D	C	I	B	C	B	F	C-
ARIZONA	C+	D	B	D	B	B	b	D	F	B	F	C	D	B	C	B	B	A	B	C+
ARKANSAS	D	D	D	C	C	D	D	D	D	B	D	D	F	D	D	D	D	I	I	D
CALIFORNIA	C-	F	D	D	C	B	B	C-	C	C	C	C	D	B-	B	B	B	B	D	C
COLORADO	C-	D	C	C	C	C	D	D	C	B	F	I	F	B-	B	B	C	B	C	C-
CONNECTICUT	C+	B	F	C	B	B	B	D	C	B	D	I	F	C-	I	C	B	B	D	C-
DELAWARE	I	C	C	I	I	I	C	D	F	B	F	I	I	I	I	I	I	B	F	C-
DIST. OF COLUMBIA	B-	A	F	I	B	C	B	I	A	I	I	I	I	D	I	B	B	F	F	I
FLORIDA	C+	D	C	I	B	B	C	D	C	D	D	I	F	C	I	C	B	C	D	C-
GEORGIA	C+	A	C	I	B	D	D	C-	C	B	F	B	F	C	I	C	D	B	C	C
HAWAII	B-	F	A	I	B	B	B	C-	F	B	C	I	C	C+	D	B	A	C	C	C+
IDAHO	D	F	D	I	C	C	D	C-	D	B	B	C	F	C	C	C	C	C	C	C-
ILLINOIS	C	A	C	D	F	C	B	C	A	A	C	F	F	B-	B	B	C	B	C	C+
INDIANA	C+	A	B	C	C	C	D	C-	D	B	C	C	F	B-	B	C	C	B	B	C
IOWA	C	A	C	I	C	b	D	C-	D	C	A	C	F	C	I	C	C	C	C	C
KANSAS	D	D	F	I	B	C	F	F	F	C	F	C	F	F	I	C	C	I	I	F
KENTUCKY	C-	A	F	I	C	D	D	F	D	F	C	I	F	D	I	D	D	C	C	D
LOUISIANA	D	D	D	C	C	D	C	D	D	B	C	I	F	C+	A	C	D	C	C	C-
MAINE	C-	D	C	B	C	D	C	C	A	B	B	F	F	C-	I	D	D	B	C	C-
MARYLAND	C+	B	D	C	B	C	B	C+	B	B	I	B	D	C-	C	C	C	C	D	C+
MASSACHUSETTS	C	D	D	C	B	C	B	C-	B	B	D	C	F	C	I	C	B	C	D	C
MICHIGAN	C	B	D	C	B	C	C	C-	C	B	D	I	D	C+	I	C	B	B	C	C
MINNESOTA	C+	A	D	I	B	I	D	C-	D	B	A	D	F	F	I	I	I	B	C	D
MISSISSIPPI	D	F	F	I	C	D	C	D	D	B	D	D	F	C-	I	D	D	B	C	D
MISSOURI	C	C	B	D	C	C	C	D	D	C	F	C	F	C	I	C	C	C	C	C-
MONTANA	D	F	D	I	B	C	F	C-	D	B	B	D	F	C+	I	C	C	A	C	C-
NEBRASKA	C-	D	C	I	B	C	F	C	C	C	A	I	F	C+	I	C	C	B	C	C
NEVADA	D	F	F	I	C	C	C	F	F	D	I	D	D	C+	D	C	C	A	C	D
NEW HAMPSHIRE	C-	F	D	I	B	C	C	C-	C	B	C	C	F	C+	I	C	C	B	C	C-
NEW JERSEY	C-	F	D	I	B	C	B	D	C	B	F	C	F	C+	I	C	B	B	C	C
NEW MEXICO	B-	C	A	B	B	C	C	D	F	A	D	C	F	B-	C	B	B	B	C	C+
NEW YORK	C	C	A	C	F	C	B	D	C	D	D	C	F	C+	I	B	C	B	C	C
NORTH CAROLINA	B-	C	A	C	B	I	C	D	F	B	D	I	I	B	A	C	I	B	B	C+
NORTH DAKOTA	B+	A	A	B	B	C	I	C-	F	A	A	D	F	B-	B	C	C	B	A	B-
OHIO	C+	B	B	C	B	C	C	D	D	B	D	C	F	C+	B	D	C	B	C	C
OKLAHOMA	C-	D	A	I	C	F	C	D	F	A	F	I	F	D	C	D	D	I	I	D
OREGON	C-	F	D	C	B	B	C	C+	C	B	A	C	F	C+	B	C	B	B	D	C
PENNSYLVANIA	C-	D	D	I	B	C	C	D	C	D	D	C	F	C	I	D	C	B	C	C-
RHODE ISLAND	C+	A	F	B	B	C	B	C-	C	B	C	C	F	C+	I	C	C	B	C	C
SOUTH CAROLINA	F	A	F	I	I	I	C	F	F	D	D	C	F	C+	I	B	B	C	D	D
SOUTH DAKOTA	C	A	F	B	B	C	D	C-	C	C	B	D	F	C	C	C	C	I	I	C
TENNESSEE	C+	A	I	I	B	C	D	D	D	I	I	C	F	C-	I	C	D	C	C	C-
TEXAS	C+	D	A	I	C	C	B	D	F	B	D	C	F	C+	I	B	C	B	C	C
UTAH	C	F	D	B	B	C	B	C-	C	B	C	C	F	B	C	B	B	A	B	C+
VERMONT	C	D	C	B	B	C	C	C-	D	I	A	C	F	C	B	C	D	B	D	C
VIRGINIA	C	C	D	C	B	C	C	D	D	C	F	C	F	B-	B	B	C	B	C	C-
WASHINGTON	C	D	F	C	B	C	B	C-	C	B	D	C	F	B-	A	B	B	B	D	C
WEST VIRGINIA	D	B	D	C	C	D	F	D	F	B	C	I	F	C-	C	F	F	B	B	D
WISCONSIN	B-	A	D	I	B	B	C	C-	C	B	C	C	F	B-	I	B	B	B	C	C+
WYOMING	F	F	F	I	C	C	F	C+	B	A	C	C	F	C+	I	C	C	A	C	C-

January 26, 2001

Honorable Senator Susan Wagle
Chair, Senate Public Health & Welfare Committee
Kansas State Capitol
Room #128-S
Topeka, KS 66612-1590

Dear Senator Wagle:

This communication is in regard to the sunset of KSA 65-1423 (HB2724) which was approved by the Kansas legislature in 1998 as a temporary measure for addressing manpower and access to oral healthcare for the citizens of Kansas until additional dental hygienists could be produced. Unfortunately when this law was passed in 1998 there was no evaluative component put into place to examine the impact of the legislation.

Data show that the number of licensed and practicing dental hygienists in the state has increased by 18.5% since 1998, while the number of licensed and practicing dentists has decreased by 13.2% (Kansas Dental Board, Dec. 2000). It should be clear from these numbers that the dental hygiene schools both in Kansas and the University of Missouri-Kansas City which provides dental hygiene graduates to the state each year, have worked vigorously to increase the number of graduates since 1998.

Further, this legislation has allowed the training of minimally prepared, entry level personnel that are unlicensed and unregulated. None of these programs have any articulation agreements with the dental hygiene programs in the state nor do they meet the minimal requirements of the American Dental Association Commission on Dental Accreditation. As a result, these entry level personnel have no avenue for advancement and therefore cannot meet the original intent of this legislation, which was to address manpower issues by producing additional dental hygienists for the state.

While we cannot comment for our respective institutions, as educators and providers of oral healthcare services we feel that this is poor legislation that does very little to address manpower and access to quality oral healthcare in Kansas. We do not feel that it is the purview of this group to become involved in the politics of dentistry. We lack the sophistication, time and resources that organized dentistry in Kansas brings to the political arena. However, we will continue to work tirelessly to graduate dental hygienists from our institutions to serve the needs of the citizens of this state. We also fear that this legislation could have a negative impact on dental hygiene as a profession in Kansas. While the intent was to produce more dental hygienists, the result could be that it makes dental hygiene a less desirable career choice. We urge you to please take a few minutes to consider our position. We would strongly recommend that if this legislation is continued that an independent study by the Legislative Post Audit Group be conducted to examine the impact of HB2724.

Thank you for your time in reading this letter and considering our position. Please distribute a copy of this letter to all committee members. We appreciate the hectic schedules that you must balance and hope that once and for all we call all stand for quality oral healthcare in Kansas.

Sincerely,

Cynthia C. Amyot, RDH, MS
Director, Graduate and Degree Completion Studies
University of Missouri-Kansas City

Margaret LoGiudice, RDH, MS
Director, Dental Hygiene
Johnson County Community College

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March 2, 2001

Chairperson Boston
House Health and Human Services Committee
Kansas Statehouse
Topeka, KS 66612

Honorable Representative Boston:

Please accept this letter as written testimony regarding Senate Bill 50, which would eliminate the sunset of the dental assistant scaling program. The KS dental hygiene educators do not support this program or the bill for multiple reasons.

First, let's look at the program itself. The technical schools, which offer the dental assistant scaling programs, are not accredited by the same accrediting agencies as the colleges; therefore, these credits can not be transferred to a dental hygiene program. So, completion of this course can not be used as credit for any dental hygiene courses.

In addition, the standards of the scaling programs are inadequate in comparison to those required by the American Dental Association Council on Dental Accreditation (CODA) of accredited dental hygiene programs. I have heard supporters of these programs say they meet CODA standards. The only CODA standard met is the ratio of students to faculty. Scaling of teeth is not a skill included in the accreditation guidelines for dental assisting programs.

The rules and regulations, which give the details for the assistant scaling program, do not include evaluation of the program. Has any data been collected indicating that the graduates of the assistant scaling program are doing a good job? What is the measure of the efficacy of this program in meeting manpower and access to oral health care needs? I don't think anyone can provide answers to these questions based on facts. The only data available tells the location of the scaling assistants, of which 73% are in urban areas. From an educator's view, the scaling assistant program is substandard and unproven to meet the need for more hygienists in rural areas.

In 1998, the Dental Hygienist Training Committee was assigned the task of reporting to the legislature and boards of education on plans for increasing the number of persons in the state being trained as dental hygienists. I served as the co-chair of this committee.

The final report was distributed in January 1999 to this committee. Eight recommendations were made, of which two have passed into law. The remaining recommendations deal with tuition reimbursement, student exchange programs, access to care under less restrictive supervision in clinics for medically underserved, opening one additional dental hygiene program in the state, and funding of accredited dental hygiene programs. The reason I bring up this report is to talk about the number of hygienists needed in the state. The Bureau of Labor Statistics projects the need for 60 hygienists per year, which covers attrition and growth. The federal guidelines designate an underserved area as one dentist per 5000 population. There are no federal guidelines for hygienists. Page 9 of the Training committee report states "The committee used the 265 figure only as a place to begin discussion." This number is based on a ratio of one dental hygienist per 2000 population. This ratio represented the need for hygienists in all areas of the state based on the population. The federal guidelines are not in agreement with this number nor are members of the dental professions.

The dental assistant scaling program was established as a temporary means to address manpower needs and access to care. This program has not succeeded. There aren't any more hygienists because of this program nor are the scaling assistants spread out across the state. I urge you to oppose the passage of Senate Bill 50. Thank you for your consideration of my views.

Sincerely,

Margaret LoGiudice, RDH, MS

Margaret LoGiudice, R.D.H., M.S.
Director, Dental Hygiene Program

Testimony of Denise A. Maus, RDH, BS
KDHA Legislative Chairperson
Regarding Senate Bill 50 – Eliminating the Sunset on the Scaling Assistants
Presented to the House Health & Human Services Committee
Wednesday, March 7

Good afternoon Chairperson Boston and committee members,

My name is Denise Maus. I have been an actively practicing Registered Dental Hygienist in Wichita, Kansas for nearly 20 years and I am very proud of the great strides my profession has made to help ensure that people keep their teeth for a lifetime. Education in an accredited dental hygiene program and continuing education are essential parts of providing patients with complete and comprehensive preventative dental hygiene services. I am here to speak in opposition of Senate Bill 50.

A Registered Dental Hygienist is a specialist in preventive oral health services, who is a graduate of a minimum two-year college program. There are three dental hygiene programs in the state of Kansas: Colby Community College, Johnson County Community College and Wichita State University. Colby Community College is the newest program preparing to graduate its second class of dental hygiene students.

The new Colby program has been successful in creating new dental hygienists in the western half of the state and will continue to make a significant impact in the future as well. The University of Kansas City Missouri and Southwestern Missouri State are two other programs located close to the Kansas border that supply Kansas with Registered Dental Hygienists.

Dental hygiene students complete an extensive educational program consisting of two main component parts.

First, dental hygiene education includes over 800 clock hours of classroom studies and labs consisting of general education and academic subjects emphasizing basic sciences including microbiology, chemistry, pathology, anatomy, physiology, as well as dental and dental hygiene sciences.

Second, dental hygiene students participate in over 700 clock hours of extensive supervised clinical experience. This is the portion of the program during which dental hygiene students learn their skills. The students gain their clinical experience at the dental hygiene clinic based on the college campus during which the students are closely monitored and rigorously evaluated.

After successful completion of the dental hygiene program, the student must pass a written national exam and a clinical regional exam. Upon completion of these two exams, a final state exam is taken. Only after all of these have been completed and licensure has been obtained from the Kansas Dental Board can a Registered Dental Hygienist practice dental hygiene.

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This licensure process was designed by Dentists to ensure that dental hygienists had adequate education and clinical experience to treat patients. The reason for creating the dental hygienist position was to relieve the Dentist of some of the more time-consuming, preventative care tasks so that they could focus on providing restorative services to their patients.

A Registered Dental Hygienist or a Dentist is the only person who can provide a complete oral prophylaxis or "teeth cleaning." A complete prophylaxis involves scaling of the teeth above (on the visible surfaces) and below the gumline (under the gums where you can not see). A complete prophylaxis is necessary to help the patient maintain oral health.

In Kansas, there are no minimal educational requirements to be a dental assistant. They are unlicensed, unregulated dental personnel who are usually trained on the job and can only work under the direct supervision of the dentist providing chairside assistance to the dentist.

There are some dental assistants working in Kansas who are trained through accredited dental assisting programs. Optional certification may be earned through the Dental Assisting National Board, but is not required for employment in Kansas. In Kansas, Certified Dental Assistants are relatively few in numbers and are not recognized by the Kansas Dental Board.

In 1998, the Dental Practice Act was amended to allow a dental assistant to provide a portion of a prophylaxis. Specifically, they are allowed to polish and scale above the gumline. A Registered Dental Hygienist or Dentist is still required to complete the prophylaxis, scaling below the gumline.

Basically, a new category of dental personnel was temporarily created who are able to provide direct, hands on patient care.

Kansas is and remains the only state to allow unlicensed, unregulated dental personnel to perform scaling procedures.

The requirement for providing this type of direct patient care is completion of a minimum 90-clock hour scaling course and notification to the dental board as to your place of employment. The dental board maintains a listing of persons performing above-the-gumline scaling and has no regulation over these persons. They are not licensed or certified. Although the list of topics that is studied may sound impressive, it is hardly a shell of the minimum education required of dental hygienists.

Article 6, 71-6-3 (a) 5 of the Dental Practice Act requires that the scaling assistant student must demonstrate technical and clinical competency in the coronal scaling of teeth. As used in the Dental Practice Act "clinical competency" refers to working on live patients.

We find it extremely difficult to believe that dental assistants could become clinically competent with use of ultrasonic and hand scaling instruments in this short of time. And we question the number of patients that they have practiced on under the direct supervision of their teachers and the lack of a standardized test to ensure knowledge and competency.

The entire Kansas Dental Hygiene education profession shares the opinion that the training requirements of the current scaling programs are inadequate to qualify persons to scale teeth.

When the Legislature authorized the scaling assistants training programs in 1998 the law added language regarding the minimum standards for education. Specifically, the law requires that the "course of study is consistent with American dental association accreditation standards."

We believe that these scaling programs are in violation of the law. There are standards for dental, dental hygiene and dental assisting programs that are regulated by the ADA Council on Dental Accreditation. There are no specific standards developed for dental assistant scaling programs, however there are standards for dental assisting programs. These scaling assistant programs do not meet even the minimum CODA standards for dental assistants. We believe that this requirement was placed in the statute to ensure a minimum, high-quality educational standard.

This issue of inadequate training, education and testing is fundamental to our opposition to continuing the scaling assistant program.

Three years ago the Kansas Dental Association said that they wanted more Registered Dental Hygienists. Over the past two years we have increased the number of hygienists practicing in Kansas by 177. I see this trend continuing along with an increasing number of hygienists working in the western part of the state. The Colby Community College program has graduated its first class and the second class will graduate in May. Almost all of its graduates are staying to work in Western Kansas.

Registered Dental Hygienist can only work where there are dentists, and many counties lack the services of dentists. We need to provide incentives for both Registered Dental Hygienists and Dentists to work in rural areas that are underserved. House Bill 2312 creates a student loan act for Registered Dental Hygienists and Senate Bill 65 provides a similar student loan act for Dentists.

We ask you to work with the Kansas Dental Hygienists Association to develop long-term solution to the delivery of high-quality dental services to all Kansans. Eliminating the sunset of the scaling assistants program should not be part of that solution.

Thank you Chairman Boston and members of the committee for your consideration of our concerns. I am available to answer questions.

STATEMENT OF TERESA C. HIGGINS, RDH,BS PRESIDENT OF THE KANSAS DENTAL HYGIENISTS' ASSOCIATION

BEFORE THE HOUSE HEALTH AND HUMAN SERVICES COMMITTEE KANSA STATE LEGISLATURE

REGARDING SENATE BILL 50

MARCH 7, 2001

H+HS
3-7-01
Atch #13

THE KANSAS DENTAL HYGIENISTS' ASSOCIATION
CONSTITUENT OF THE AMERICAN DENTAL HYGIENISTS' ASSOCIATION
2007 SW REGENCY PARKWAY • TOPEKA, KS 66604
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Good Afternoon Chairman Boston and Committee'

I am Teresa Higgins, RDH, BS, and President of the Kansas Dental Hygienists' Association. I am here this afternoon to speak about SB50.

Kansas Dental Hygienists' Association is opposed to SB50. Eliminating the "Sunset Provision" will have a tremendously negative public health outcome as well as being detrimental to the profession of Dental Hygiene and Dentistry.

Three years ago, legislation was passed, creating an unlicensed, unregulated dental scaling assistant. This new position was a temporary measure to allow the dental hygiene educators and The Kansas Dental Board time to increase the dental hygiene population. A "Sunset Provision" was wisely applied so as not to create a new level of care but to help address access-to-care in rural and underserved areas of Kansas. The State also identified and labeled three regions of Kansas as underserved. These three regions were Northwest Kansas, Southwest Kansas, and Southeast Kansas.

Now SB50 presented by the Kansas Dental Association if enacted will remove the Sunset provision and create a permanent new dental caregiver. In doing so Kansas will be the only State in the US to reduce the standard of care and allow unlicensed, unregulated people to perform part of a procedure that traditionally is not a separate function and done only by licensed dentists and dental hygienists.

The Kansas Dental Hygienists' Association has grave concerns about what impact this is going to present to the citizens of Kansas. Three questions need to be addressed:

1. Does the permanent creation of the scaling assistant really affect the access-to-care problem?
2. Will this level of care do any harm?
3. How will this affect the dental hygiene workforce?

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In looking at the distribution of the 188 scaling assistants our sources looked at the original designated underserved regions defined by the state in 1998. Scaling assistants trained in Wichita, Emporia and Kansas City after graduating returned to the office they were hired and that basically was in the same regions. Sedgewick County, Johnson County, Emporia were not considered underserved. The dental hygiene educators basically found that 73% of the scaling assistants stayed in the urban areas. This is consistent with other healthcare professionals. The curriculums are located in urban areas and they stay and practice in the same area.

Also looking at the location of the dentists, the underserved counties that do not have a licensed dentist will not also be able to acquire a scaling assistant since they are under direct supervision. The access -to-care problem will not be changed for the rural or underserved populations by allowing scaling assistants to become permanent.

SB50 also appears to be in direct opposition to the premise of the Surgeon General's Report on Oral Health as well as the US Department of Health and Human Services' policy plan Healthy People 2010. The Surgeon General's report on Oral Health emphasizes the importance of ensuring access to QUALITY oral health services for the public. QUALITY is the key word. With scientific evidence linking several systemic diseases, such as diabetes and stroke, with periodontal disease, quality of care should not be diminished. The Surgeon General's report urges all involved to seek methods to increase access-to-care, but does not in any way advocate the reduction in the quality of those services. By segmenting the dental oral prophylaxis consistency of care is removed. Also the Kansas Dental Hygienists' Association has concerns in the training of the scaling assistant. Instrumentation takes a dental hygienist under controlled circumstances in monitored clinics over seven hundred hours to accomplish. The scaling assistant training encompasses just a few hours of lessons provided in a dental office setting.

There are numerous scientific and evidence based research reports that have been printed over many years in regards to improper (iatrogenic) instrumentation. Harm is definitely possible if an unskilled person attempts to remove debris (calculus). Above and below the gum line debris does not know geographic stopping points most hard deposits are one continuous form. In removing the deposit you actually have to go below the gum line to properly take it off. In removing this set up gouging of surfaces below the gum line can occur. I have presented a research article from the *Journal of Periodontology* of June 1997 that supports this scenario. In this article it states that improper instrumentation that creates rough surfaces or tears will in effect create an increase in the periodontal disease. It creates a stable site into an unstable site and the disease progression becomes manifested in poor gingival tissue response. In other words without the proper technique damage will occur to harm the patient.

Also there is not an article that supports through evidence based research that above the gum line care is therapeutic in reducing oral diseases. It is strictly a cosmetic procedure.

If we take another look at how scaling assistants will affect this state we must also look at

why this all started. The maldistribution of dental hygienists in this state created some dentists from saying they could not find a dental hygienist. They felt by creating the scaling assistant to provide another source for employment would help in temporarily dissolving the need until more dental hygienists could be educated. A study by WSU dental hygienists and presented as a table clinic at our dental hygiene Annual Session in Washington DC found that in the year that this new caregiver was created a 27% reduction in the applicant pool was found. I ask if you make this permanent what affect will this create for increasing dental hygienists in this state? Why would a student wish to go through two years of formal accredited education for a degree and then find that the job market has competition with a person whom only took 90 hours?

This is sending the wrong message for future dental hygienists in this state. Our surrounding sates such as Iowa and Colorado and New Mexico are providing much better employment options and better respect than this state. WSU is very close to Oklahoma and Colby is very close to Colorado and Johnson County is very close to Missouri, why would these students seek a license in Kansas?

One must then wonder how this legislation truly impacts access to dental hygiene services. The Law creating dental hygiene manpower and the services they perform was to protect the public from harm. To complete a curriculum that meets the standards of dental education accreditation was one way to assure public safety. Then the Dental Hygienist must take a National written exam to show they have again a standard that is acceptable to practice. Then again to receive a license from this state they perform the oral prophylaxis in a regional test that again assures that a standard acceptable to practice will prevent harm. If you enact SB50 you take all of these assurances away. You have created this new permanent profession that is unlicensed and unregulated that has little or no quality assurance built in to protect the citizen of Kansas. You then rely on the ethical value of the practitioner. There are no systems in place to assure the citizen that a complete prophylaxis is being done. The bottom line is dentistry is not just health care but it is a business seeking production and reimbursement. The laws are to protect from biased decisions and these will not be in place. The quality of care is in question.

The Kansas Dental Hygienists' Association would like at least an extension of the Sunset and a formal study of how this new profession will affect total oral health care and access-to-care. No study was incorporated last time because it was an interim provision. We ask that this be considered.

Thank you for letting me present our concerns.

Sincerely,

Teresa C. Higgins RDH, BS
President Kansas Dental Hygienists' Association

House Committee on Health and Human Services

Testimony of **Dr. Rita Burnett** supporting SB 50

March 7, 2001

It is a privilege to speak before you today. I apologize that I cannot be present in person. I come before you to present my plea to consider the Supragingival Scaling program for qualified dental assistants a continual program in the state of Kansas. I have practiced in Wyandotte County for 17 years. I have had two (2) hygienists during this time. My first hygienist has since completed dental school and opened her own dental practice in Kansas City, Missouri and my second hygienist chose to take another job at an office closer to her home in Grandview, Missouri. The length of time that I had a hygienist employed in my office was four years. During the other years, I performed the scaling myself.

There is no mistruth that there is a shortage of dental hygienists, not just in the Kansas City area but throughout many areas of Kansas and possibly the rest of the United States. I have no information to document this but through the conversations with many of my colleagues I do feel that there is indeed a shortage. From a personal point of view, many of the temporary hygienists I have had an occasion to speak with or work with have demanded ludicrous hours and wages or both. It seems that these auxiliary personnel have come to believe that dentistry will not be able to exist without them. I have tried to understand their reluctance to accept their negative opinion of this program for qualified dental assistants and have not been able to. Since I have not had a dental hygienist in my employ for the better part of twelve to thirteen years I, like many other of my colleagues, must entertain other methods of patient treatment, i.e. the supragingival scaling program.

As an advisory board member of Concorde Career Institute I was quite honored when I was asked to review information about this same program from the University of Kentucky approximately two years ago and subsequently instruct four sessions of this program at Concorde and my office in Kansas City, Kansas. Most of the students had done some form of scaling the teeth of patients. Many of the students were quite outstanding in their ability to perform this function, but needed direction as to various components of a dental prophylaxis such as health history, dental anatomy, radiography, patient management etc. I am proud to be an instructor for Concorde and proud of the graduates that I have completed the program under my instruction.

What makes me feel like I am qualified to instruct this program? My faculty advisor in dental school (UMKC class of 1983) was a periodontist, Dr. Richard Gilman. The better part of 75% of my practice is periodontitis in one form or the other. I know that this is not relevant for this issue at hand, but most of my colleagues and myself certainly were proponents for dental hygienists to be able to administer anesthesia and see patients of record in the absence of a dentist. I understand their role in the treatment of patients, but do they? Dental assistants are almost a lost commodity due to the limitations of the legal description of their job. Pride in a job well done is the result of being able to grow and be challenged on the job, such as the program of supragingival scaling.

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The Influence of Anatomic and Iatrogenic Root Surface Characteristics on Bacterial Colonization and Periodontal Destruction: A Review*

Knut N. Leknes

PERIODONTITIS IS A MULTIFACTORIAL infectious disease affecting primarily a subset of subjects and a subset of sites. Recent microbiological data have acknowledged that before disease progression can occur, a susceptible host and site are required, in addition to the presence of pathogenic bacteria. This review discusses factors affecting periodontal disease progression and focuses in particular on the influence of anatomic and iatrogenic root surface characteristics. Retrospective studies clearly suggest a strong association between anatomic aberrations and periodontal attachment loss. Cemental tear seems to have the potential to initiate an aseptic, rapid, site-specific periodontal breakdown in a non-infected environment, illustrating the complexity of the attachment loss process. Recent experimental findings, furthermore, demonstrate a significant influence of root surface instrumentation roughness upon subgingival plaque formation and gingival tissue reactions, as well as a significant and positive relationship between subgingival plaque accumulation and inflammatory cell mobilization. These results indicate that subgingivally located irregularities may form stagnant sites or ecological niches which favor both retention and growth of organisms. Such events in addition to the progressive inflammatory changes may critically influence the subgingival environment by turning a stable site into an unstable or active periodontitis site. Thus, local anatomic and iatrogenic root surface characteristics may have a more profound effect on gingival health than previously assumed, particularly on a site level.
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Key Words: Dental plaque; periodontal attachment loss; periodontal diseases/etiology; tooth root/anatomy and histology.

The oral cavity is in fact the only place in the body where a calcified tissue passes through the soft tissue integument into the external environment. In healthy conditions, the dentoepithelial junction seals the break in the oral mucosal continuity, and invading bacteria are effectively neutralized and washed out from the gingival sulcus area. Colonizing bacteria may utilize nutrients from the diet, products from other subgingival bacterial species, or from the host. The gingival exudate is, however, not particularly rich in nutrients, leading to a competition for the small amount available.[1] The rather low mean temperature in the sulcular region of about 35°C,[2] a restricted pH range of 7.0 to 8.5,[3,4] and an oxidation reduction potential (Eh) of about −300 to +310 mv at pH 7.0[5,6] further limit the number of potential colonizers.

Destructive periodontal diseases may be defined as a series of infections which affect single or multiple sites within the oral cavity, leading to loss of the supporting periodontal tissues.[7] In clinical terms, this means that in the absence of the causative factor, disease will not develop irrespective of the presence of other risk factors. Epidemiological studies have shown that advanced loss of attachment occurs primarily in a subset of subjects and in a limited number of sites. In surprisingly many sites, periodontal destruction cannot be diagnosed even though large numbers of pathogenic organisms are present at or below the gingival margin.[8,9] Thus, it appears that periodontal disease progression is dependent on the simultaneous occurrence of a number of primary and secondary factors.[10] This review will discuss factors affecting peri-

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odontal disease progression and particularly focus on the impact of anatomic and iatrogenic root surface characteristics.

ETIOLOGIC FACTORS

Presence of Pathogens

Within minutes after a tooth surface has been cleaned, a pellicle of salivary components is adsorbed to the exposed hydroxyapatite crystallites.[11-13] The initial bacterial colonization occurs by attachment to the pellicle of individual bacteria, primarily Gram-positive, facultative cocci. The attachment is mediated through adhesive proteoglycans covering the cell wall, as well as by proteins in fimbria and pili. Supragingival dental plaque is composed of bacterial morphotypes with significant heterogeneity in the appearance of the microbial deposits. With time, the microbial deposit increases further in structural complexity and may progress subgingivally. Due to a high proportion of motile species, the organization of the subgingival microbial population appears characteristically different from that seen supragingivally.[14,15] Well-defined bacterial colonies are lacking. The inhabitants, consisting predominantly of Gram-negative, anaerobe microorganisms, tend to be arranged in a palisade formation perpendicular to the cementum. Peculiar bacterial aggregates, resembling test-tube brushes, can also be found attached to the tooth-adhering plaque and extending towards the opposing soft tissue wall.[14] The "non-specific plaque theory" postulates that periodontal diseases may occur if the total plaque mass exceeds a certain threshold level.[16] On the other hand, the "specific plaque hypothesis" suggests that one or only a few species within the dental plaque are involved in initiation and progression of periodontal diseases.[10] A major event of the last decade is the discovery of differences in virulence between strains of the same bacterial species.[17,18] All clonal types of a pathogenic species do not have the full complement of genetic information coding for virulence factors. Thus, only a small segment of clonal types is probably involved in the majority of periodontal diseases. The fact that avirulent strains exist may explain the paradoxical finding of suspected pathogens in periodontally healthy sites. Furthermore, pathogenic species possessing all the necessary genetic elements need to be present in sufficient numbers to initiate disease.[19] A perturbation in the local environment may allow pathogenic species to multiply and achieve threshold levels.

Bacterial Interaction

It is not clear whether individual differences and site differences in microflora composition are controlled primarily by the genetic coding of the organisms or are a result of environmental influences. Bacterial sampling has demonstrated that no subgingival site harbors pure cultures of a single bacterial species. This indicates that interactions between species are critical in maintaining the balance in the gingival sulcus area. The presence and levels of host-compatible or even host-beneficial species seem to be essential to the prevention of disease and to the long-term outcome of therapy. By colonizing sites that otherwise would be occupied by pathogens, the beneficial inhabitants may dilute the number of pathogens in a pocket, compete for or alter binding sites, or destroy virulence factors produced by pathogens.[1] The influence of beneficial species on the subgingival ecology and long-term stability has been assessed in localized juvenile periodontitis lesions.[20-22] These studies have demonstrated that certain species, such as *Streptococcus sanguis, Streptococcus uberis,* and *Actinomyces viscosus,* produce factors that inhibit the growth of *Actinobacillus actinomycetemcomitans.* Such host-beneficial species were absent or in low numbers in lesion sites prior to therapy but were present in significantly elevated numbers following treatment. The growth of this specific pathogen was inhibited by hydrogen peroxide formation by the beneficial segment of the flora.[21] More recent research has demonstrated the reverse interaction.[23,24] *A. actinomycetemcomitans* specifically inhibits the growth of *S. sanguis, S. uberis,* and *A. viscosus* by the production of bacteriocin. Such mutual antagonism seems to be highly specific and probably plays an important role in permitting or preventing the establishment or spread of pathogenic species.

Susceptible Host

Estimates of disease activity using clinical criteria suggest that 1.5% to 3.0% of sites may show disease progression in subjects with prior evidence of disease.[1] Microbial screening of dental plaque indicates that 32% to 49% of subjects and 10% to 18% of sites may harbor a specific periodontal pathogen.[25] These data suggest that a susceptible host and site are required, in addition to pathogenic bacteria, before disease progression can occur.

To colonize a subgingival site, a bacterial species has to overcome host-derived obstacles such as the flow of saliva and gingival crevice fluid, as well as mechanical displacement actions from chewing and speaking. Salivary glycoproteins, mucins and proline-rich proteins in saliva and gingival exudate may furthermore act as non-specific blocking agents for binding of bacterial cells to mammalian surfaces.[26] The specific antibody system acts by preventing bacterial attachment or, in some instances, by making the bacterial cell susceptible to various phagocytic or killing mechanisms. Polymorphonuclear leukocytes represent the first line of defense in the sulcus area by phagocytosing and ultimately killing bacterial cells, or by releasing lysosomal enzymes into the crevice or pocket.[1] An investigation in beagle dogs demonstrated that young animals may mobilize a more acute inflammatory reaction to plaque accumulation than older animals.[27] Oth-

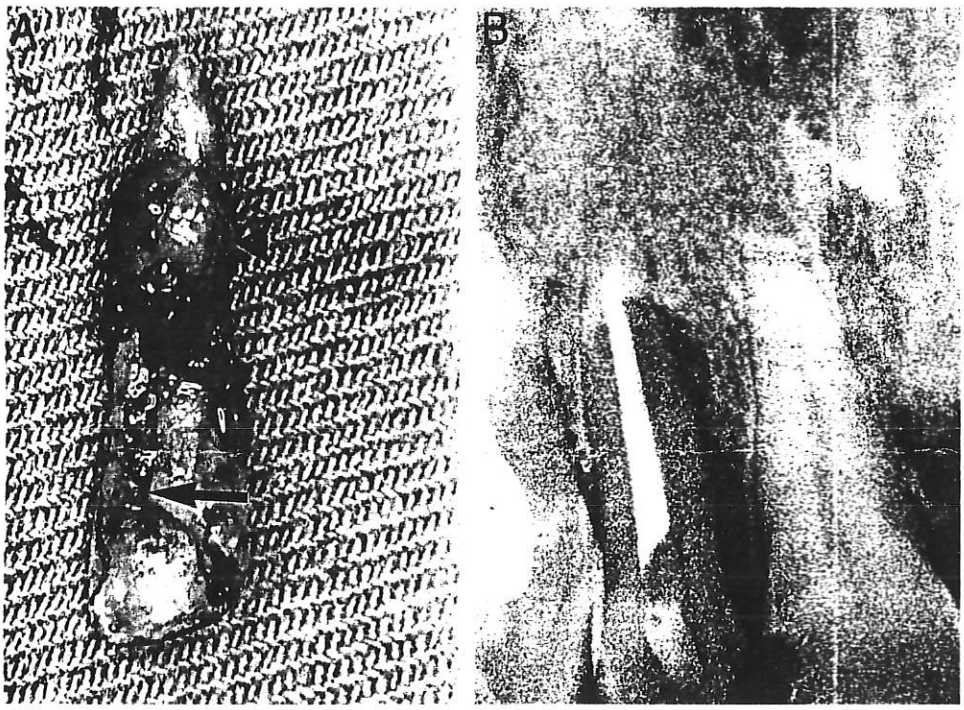

*Figure 1. **A)** Tooth #10 immediately after extraction, demonstrating a palato-gingival groove from the cingulum area (arrow) to a pea-sized granuloma near the apex (arrowhead). **B)** Radiograph showing a distinct intrabony defect on the palatal and mesial aspect of tooth #10.*

er observations indicate that hosts may differ in their threshold susceptibility to pathogenic species.[10] Furthermore, comprehensive studies of HIV-positive individuals,[28-30] diabetes mellitus patients,[31] and heavy smokers[32,33] have clearly revealed a higher prevalence and severity of periodontal diseases compared to unaffected controls. These results strongly indicate that the host has to be susceptible both locally and systemically to the infection.

Conducive Environment

Local etiologic factors refer to anything that influences the periodontal health status locally but exerts no systemic effect.[34] The concepts discussed in this review emphasize the primary and essential role of dental plaque in initiating periodontal disease while attempting to clarify the specific interaction of secondary local factors in this process. Local factors are primarily grouped into anatomic and iatrogenic types. The prevalence and impact of these aberrations on gingival health will be discussed.

ANATOMIC FACTORS

Enamel Projections or Enamel Pearls

Several factors related to tooth anatomy, including enamel projections,[35,36] enamel pearls,[37,38] proximal[39] and palato-gingival grooves,[40] and root depressions have been associated with gingivitis and attachment loss. Ectopic deposits of enamel apical to the level of the normal cemento-enamel junction (CEJ) are called enamel projections if they have a tapering form and extend into the root furcation areas. On other molar surfaces these aberrations may be diagnosed as enamel pearls. Studies[37,41,42] have revealed variations in prevalence of enamel projections between jaws, between first and second molars, and between buccal and lingual surfaces. About 15% to 34% of mandibular and 9% to 25% of maxillary molars show cervical enamel projections, and in both arches this abnormality is most likely to occur on buccal surfaces of second molars.[41,42]

Evaluation of 474 extracted maxillary and mandibular molar teeth showed a 90% association between enamel projection and furcation involvements,[35] while another study reported a 50% association in an Egyptian skull material.[36] The discrepancy in percentages between these two studies is probably related to variation in selection of the material. However, both reports reveal a significant impact of enamel projections on furcation involvement.

Root Grooves and Concavities

The palato-gingival groove is a developmental abnormality of the maxillary incisor teeth. These grooves usually begin in the central fossa, cross the cingulum, and extend apically for various distances and directions (Fig. 1A). The prevalence of this anatomic root characteristic has been reported to be 8.5% on a subject basis, and from about 2.0% to 4.6% on a tooth basis.[43-45] Most palato-gingival grooves (93.8%) are detected in maxillary lateral incisor teeth,[44] and 58% extend more than 5 mm apical

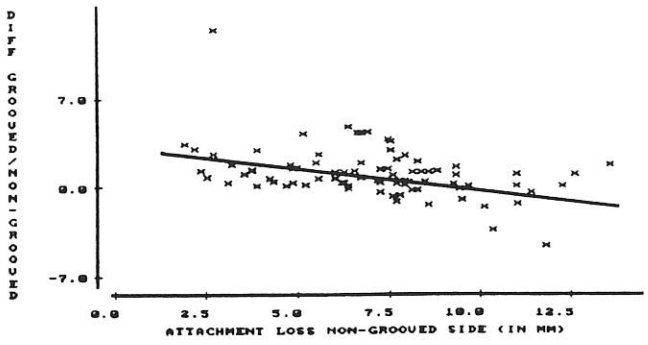

Figure 2. Difference in loss of attachment between grooved and non-grooved surfaces across increasing loss of attachment on non-grooved surfaces for incisors. A significant negative correlation ($r = -0.427$) indicates that the difference in loss of attachment between grooved and non-grooved surfaces becomes smaller with increasing loss of attachment.

from the CEJ.[45] Clinically, grooved teeth have demonstrated significantly higher plaque, gingival, and periodontal disease index scores than non-grooved incisors.[40,44] A significant positive association has also been reported between the presence of palato-gingival grooves and the frequency of recording probing depths greater than 4 mm (Figs. 1A and 1B).[40]

Proximal root grooves and concavities represent another morphologic feature which occurs frequently in mandibular anterior teeth and maxillary premolars.[46] Such concavities are wider in maxillary than in mandibular teeth and are prone to be exposed early in the destructive disease process.[46] A recently published study[39] evaluated extracted teeth to determine whether the periodontal attachment loss was significantly different for root surfaces with and without proximal root grooves. For incisors as well as for premolars, a significantly greater loss of attachment was demonstrated on grooved than on non-grooved surfaces. Regression analysis further revealed a significant decrease of the influence of the root groove in incisors when the attachment loss became more extensive (Fig. 2). This may indicate that other factors, such as bacterial selection due to strict anaerobic growth conditions, are more dominating than anatomic features at advanced stages of the disease. For the premolars, the difference in loss of attachment between grooved and non-grooved surfaces was consistently higher than for incisors, and a decrease in the effect of root groove with increasing attachment loss was not seen. These differences between the two groups are presumably related to variation in root groove morphology. While incisors generally display a shallow U-shaped groove that sometimes disappears apically, premolars typically show a more V-shaped groove which persists toward the apical area. Thus, not only the presence of root grooves but also their morphology may influence the periodontal disease process.[39]

Cemental Tears

The attachment apparatus of human teeth consists of alveolar bone, periodontal ligament, and root cementum. In the 1940s, Gottlieb[47] formulated the theory that "cementopathia" or pathological conditions in the cementum are the main cause of periodontitis and pocket formation. The phenomenon of cemental tear has been observed within unexposed[48–51] as well as exposed cementum,[52] and has been described as a complete separation along the cemento-dentinal border[48,51,53] or a partial split within the cementum along an incremental line.[50,52] Information about the incidence of cemental tear in a population is not available. However, recently published data[53–55] indicate that the phenomenon is more common than earlier believed, particularly in aged individuals, and that cemental tear probably represents an underdiagnosed entity.

Extracted teeth with cemental tear have been examined to determine whether the presence and extent of attachment loss on surfaces having this defect differ from that on the opposite, intact side of the root.[54] The results revealed a significantly greater loss of attachment on cemental tear surfaces than on opposite intact surfaces. Histological examination further indicated that the split between the root and the fragment most likely occurs along the cemento-dentinal border.

Available anamnestic data for the patients included in the cited report[54] revealed histories of stable periodontal health for many years. However, an abrupt change seemed to have occurred, resulting in a rapid and dramatic site-specific loss of attachment closely related to the appearance of a cemental tear fragment. This phenomenon is illustrated here by a representative case (Figs. 3A and 3B). Some of these fractures occurred at a considerable distance from the gingival sulcus, indicating that the cemental tear may have the potential to initiate an aseptic, rapid, site-specific periodontal breakdown in a non-infected environment (Fig. 3B). A complete separation of the fragment with subsequent sequestration elicited for most of the patients symptoms comparable to acute periodontitis, eventually leading to extraction of the tooth. This illustrates that periodontitis in its complexity may differ from the original definition in terms of disease initiation and progression.

IATROGENIC FACTORS

Dental Restorations

Subgingival margin discrepancies of onlays,[56] crowns,[57,5] fillings,[59–61] and orthodontic bands[62] have all demonstrated detrimental effects on adjacent gingival tissues. Studies have shown that the fit and precision in crown and bridge elements are generally less than perfect.[57,58] Eighty percent of the radiographically examined restorations exhibited marginal defects on the proximal surfaces, and margin discrepancies of more than 0.2 mm were always as-

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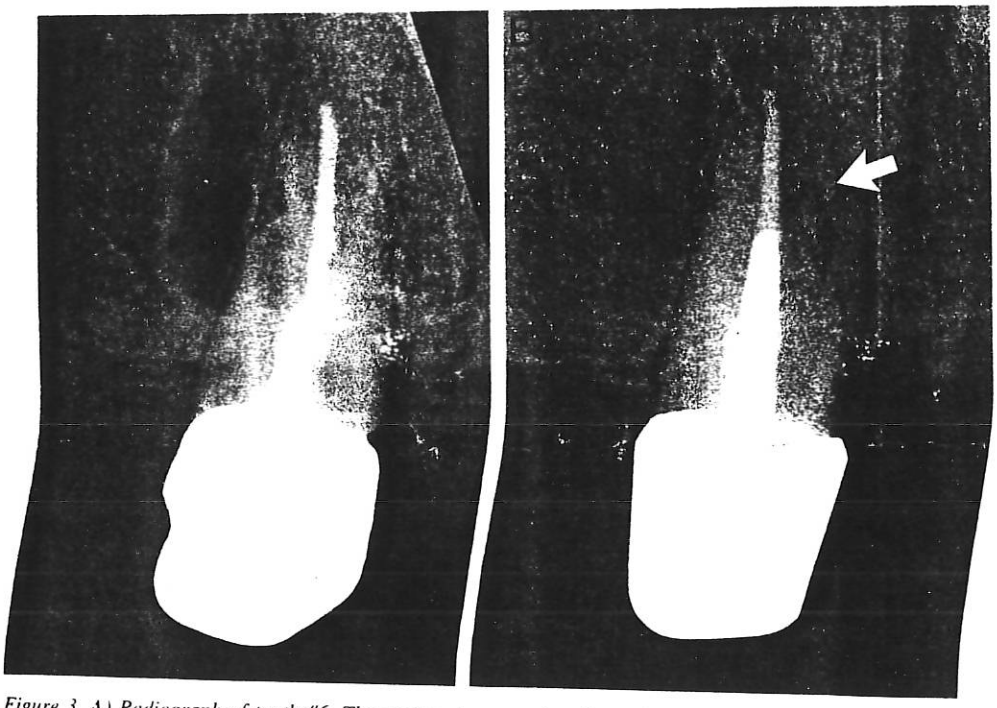

Figure 3. A) Radiograph of tooth #6. The canine shows no intrabony defect. At this maintenance appointment, 3 mm probing depth (PD) was recorded at the mesial aspect of the tooth. B) Radiograph taken 6 months later, illustrating a mesially located angular intrabony defect extending to the apex of the tooth and containing a radiopaque cemental tear fragment (arrow). The PD mesially was 9 mm.

sociated with alveolar bone loss.[58,61] Another study[59] reported that 69% of fillings and 82% of bridges retained in 35-year-old subjects showed ill-fitting margins.

Follow-up examinations of fixed restorations have demonstrated that the position of the margins in relation to the gingiva may have a significant impact on gingival health.[63–65] Subgingivally located crown margins were generally associated with the highest gingival index (GI) values, while supragingival margins gave the lowest GI values.[65] Intermediate values were seen for crowns placed at the free gingival margin.[65,66] Crowned teeth have further demonstrated significantly higher gingival exudate measurements and leukocyte emigration counts than non-crowned contralateral teeth,[67] and significantly more loss of attachment was detected around teeth with subgingivally located crown margins compared to corresponding teeth with supragingival restorations.[66]

Instrumentation Roughness

Conscientiously performed professional instrumentation of periodontally diseased teeth should lead to complete removal of plaque, calculus, and other bacterial components from tooth surfaces without producing surface roughness. Tooth debridement is performed by rotating, vibrating, and hand instruments. In vitro studies[68,69] have reported a significant difference in roughness index values in response to such instrumentation, giving the diamond point the highest value and the hand curet the lowest value (Figs. 4A and 4B). The influence of tooth surface roughness on supragingival plaque formation is fairly well documented,[11] while its impact on subgingival progression of plaque has not been clarified. In beagle dogs, experimentally induced maxillary and mandibular canine teeth periodontal defects were exposed to either diamond or curet instrumentation followed by a 70-day plaque accumulation period. The subgingival bacterial colonization was analyzed by a scanning electron microscope technique.[70] Secondly, the inflammatory reactions in the gingival tissues facing the diamond- and curet-instrumented surfaces were analyzed histomorphometrically.[71] Finally, the subgingival microbial colonization and the mobilization of inflammatory cells in the adjacent gingival tissues were compared site by site.[72] A significant effect of root surface instrumentation roughness upon subgingival plaque formation was demonstrated (Fig. 5).[70] Root debridement with a fine-grained diamond point caused extensive roughness which promoted significantly more subgingival bacterial colonization than did smoother, curet-treated surfaces. The character of subgingival root instrumentation also significantly affected gingival inflammatory reactions, most likely by influencing subgingival plaque formation.[71] The subgingival microorganisms triggered a mobilization of inflammatory cells, the magnitude of which was significantly and positively correlated to the extent of subgingival colonization. The noxious influence

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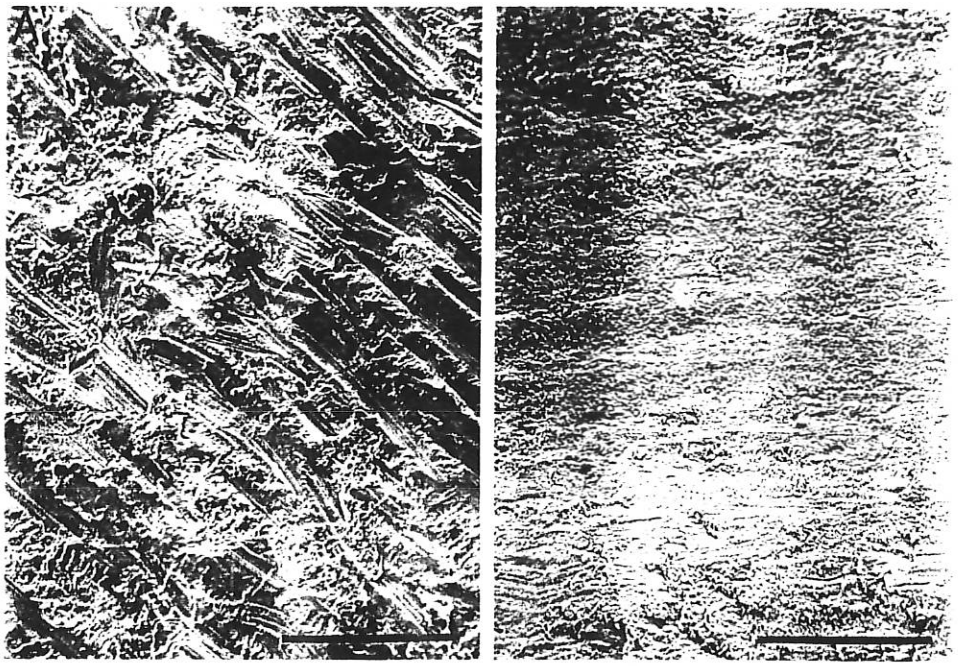

Figure 4. A) SEM micrograph of diamond-treated root surface, showing corrugated areas with pronoun instrumentation marks (bar = 0.1 mm). Figure courtesy of Dr. T. Lie. B) SEM micrograph of curet-trea specimen. This root surface is relatively smooth but shows some surface smearing (bar = 0.1 mm). Cour of Dr. T. Lie.

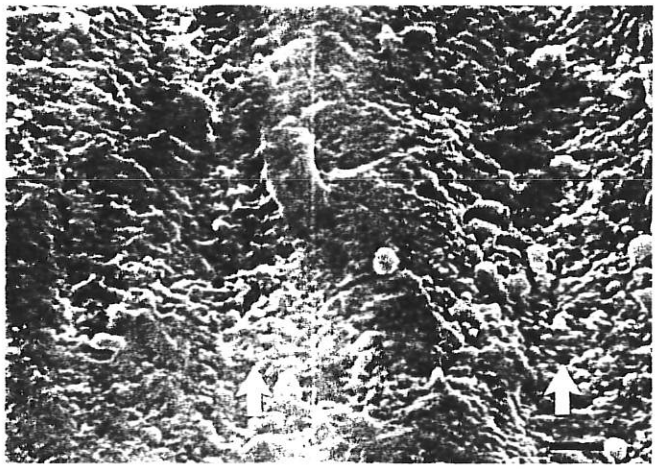

Figure 5. SEM micrograph of a diamond-treated specimen, showing multilayered aggregates of cocci located in horizontal instrumentation grooves. Arrows indicate direction of grooves (bar = 0.01 mm).

of subgingival plaque decreased with increasing distance from the microbiological insult.[72]

The effect of tooth surface roughness on the adjacent soft tissue has been evaluated previously both in animals[73] and in humans.[74] Waerhaug[73] observed complete readaptation of the junctional epithelium following roughening of cervical enamel by a sharp diamond point. The artificially produced subgingival roughness did not, per se, exert any irritating effect upon gingival tissues. Waerhaug concluded that the presence of bacteria, or their metabolic products, was necessary for initiating inflammatory alterations. Accordingly, our observations[70,72] support the tion that differences in gingival tissue reactions are caus by differences in microbial colonization of the subgi val niches and not by surface roughness per se. Ot reports have failed to observe an effect of root surf roughness on subgingival plaque formation or gingi inflammation.[75,76] Incomplete scaling in deep pockets m have masked a potential effect of differences in root face roughness.[75] In another clinical trial,[76] no negat effect of shallow, horizontal root surface grooves up periodontal healing was demonstrated. A closer exam nation of these data, however, indicates a tendency higher attachment gain in the smooth root surface gr (43%) than in the rough surface group (39%). Prof sional prophylaxis every 3 weeks during the experimen period may have masked some of the effects of the perimental grooves. Furthermore, it appears more relev to evaluate the effect of vertical grooves and roughn patterns extending apically from the gingival margin are

TRIGGERING MECHANISMS

To colonize a subgingival site, a species must be able attach to the tooth, the sulcus or pocket epithelium, o other bacterial species attached to these surfaces.[1] On t host cells there are a multiplicity of receptors to whi specific adhesin molecules on the bacterial surface m attach. Adhesins that have been identified on subgingi species include fimbriae[77–79] and cell-associated pr teins.[80–82] Specific receptors on tissue surfaces encomp

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galactosyl residues,[78,81–83] sialic acid residues,[84] proline-rich proteins or statherine[84,85] and type I and IV collagen.[86,87] If a bacterial species cannot attach directly to a host surface, the colonizer can alternatively attach to a bacterium already sticking to such surfaces. Both in vitro[88] and in vivo[89] research have demonstrated high complexity and specificity in the interaction or coaggregation between pairs of species. Many of these interactions are lectin-like in that they are based on the attachment of a specific protein on the surface of one species to a specific carbohydrate on the surface of the other.[89–92]

In a balanced situation, a potential pathogen may colonize a site for decades without causing disease.[1] However, if the local environment changes in a manner which turns on the virulence factor regulon, then the organisms may express tissue-damaging factors which eventually lead to tissue destruction.[1,20] Anatomic as well as iatrogenic factors may cause such changes. Subgingivally located margins of dental restorations are associated with pathologic alteration of the adjacent gingiva probably due to increased plaque accumulation.[57,74,93] Furthermore, maxillary incisors with palato-gingival grooves may exhibit significantly higher plaque, gingival, and periodontal disease index scores than non-grooved incisors.[40,44] Instrumentation roughness may significantly enhance subgingival microbial colonization.[70] These results indicate that subgingivally located irregularities form stagnant sites or ecological niches which favor retention of organisms. Thus, these environmental changes in turn favor microbial growth and probably also alter the entire set of virulence factors, allowing periodontal pathogens to reach threshold levels. In addition, surface irregularities enhance bacterial adhesion indirectly by sheltering submerged microorganisms from oral cleaning and by impeding upon the cleaning action of the gingival crevicular fluid.[94–97]

Subgingival restorations with marginal overhangs have also demonstrated an effect on the bacterial composition.[56,62] In one study,[56] gold onlays with 0.5 to 1.0 mm proximal overhangs were placed in mandibular molars for 19 to 27 weeks. They were replaced in a crossover design by similar onlays with clinically perfect margins (control period). The results revealed an increase in gingival indices and a change in the composition of the subgingival microbiota comparable to that associated with periodontitis at sites adjacent to subgingivally placed overhangs. It was seen that bleeding on probing always preceded the peak level of black-pigmented *Bacteroides* (BPB). These observations indicate that the highly inflamed nature of the gingival tissue, including increased support of vitamin K and hemin, allows a subsequent increase of BPB. However, it was not possible to demonstrate an increase in the colony forming units per milliliter from sites with overhangs. This controversy with our[70] and other reports[73,74] probably reflects the shortcomings of the paper point sampling technique used. Placement of subgingival orthodontic bands in subjects not given special oral hygiene instructions elicited similar alterations in the composition of the subgingival microbiota.[62]

Surface instrumentation roughness also significantly enhanced subgingival colonization and gingival inflammatory reactions.[71,72] Experimentally, periodontal breakdown has been provoked both in animals and humans using elastic or silk ligatures.[98–101] However, insertion of ligatures did not induce bone loss in germ-free rats.[102] This indicates that local factors may influence the balance in the gingival sulcus area by altering the amount, composition, and probably also the set of virulence factors of the indigenous flora. Local mechanical components alone do not induce disease.

A study of clinical and microbiological effects of subgingival overhangs has demonstrated that inflammatory changes in the gingiva precede changes in the bacterial composition of the plaque.[56] Bacterial colonization starts earlier at tooth surfaces facing inflamed gingiva than at surfaces adjacent to healthy gingiva.[103] Ramberg at al.[104] have found that the gingival index score at a given site at the start of a plaque accumulating period influences the amount of *de novo* plaque formed on the adjacent tooth surface, leading to increased plaque score values with increasing gingival index score. They concluded that the development of early plaque appeared to be more influenced by the local environment in the dento-gingival area than by the number of microorganisms in saliva.[104] Increased intrasulcular temperature, as well as an increased supply of iron, magnesium, and calcium due to inflammatory changes, may explain these findings.[2]

The oral hygiene and periodontal status of an individual further correlates with the levels of enzymes as proteases and neuraminidases in the saliva and in crevicular fluid.[105] These enzymes, which are mainly derived from inflammatory cells associated with the gingival inflammation process and from colonizing microorganisms, may generate and expose hidden receptors that promote colonization of periodontal pathogens.[105,106] Thus, elevated levels of enzymes in crevicular fluid and saliva appear to have the potential to modulate bacterial colonization by exposing cryptic receptors or cryptitopes for certain Gram-negative bacteria, and even by destroying receptors for beneficial species such as *S. mitis* and *S. sanguis*. This indicates that inflammatory changes caused by local factors such as anatomic grooves, cemental tears, overhangs, and surface roughness may critically influence the subgingival environment by turning a stable site into an unstable or active periodontitis site.

We have presently reviewed etiologic factors with particular focus on the influence of anatomic and iatrogenic root surface characteristics on initiation and progression of periodontal diseases. Retrospective studies clearly indicate a strong association between anatomic aberrations

and periodontal attachment loss. Cemental tears seem to have the potential to initiate an aseptic, rapid, site-specific breakdown etiologically different from a plaque-initiated destruction. Experimental studies in beagle dogs demonstrate a significant effect of root surface instrumentation roughness upon subgingival plaque formation and gingival tissue reactions, as well as a significant and positive relationship between subgingival plaque accumulation and inflammatory cell mobilization. In clinical terms, this means that instrumentation roughness may jeopardize gingival health due to its plaque-promoting effect.

The overall conclusion from this review is that local anatomic and iatrogenic root surface characteristics may have a more significant effect on gingival health than previously assumed.

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