Additional evidence to support the need, community support, accreditation, and industry move toward the baccalaureate degree as the minimum entry-level degree for Dental Hygiene is included to support our application.

Addition evidence provided herein includes:

- Report on consultation with employers and workforce development agencies
- Letters of support from employers, workforce agencies, advisory board members and community partners
- Documentation of ACCJC Substantive Change approval
- Commission on Dental Accreditation (CODA)
- Industry reports and research demonstrating the need and move toward dental hygiene baccalaureate degrees

CONSULTATION WITH REGIONAL EMPLOYERS

Oxnard College and the Ventura County Community College District (VCCCD) engage regularly with regional employers and our Workforce Development Boards. VCCCD's Vice Chancellor of Institutional Effectiveness sits on the Workforce Development Board of Ventura County, where we engage regularly with employers, educational institutions and other workforce training and development agencies. Oxnard College and VCCCD are also members of the South Central Coast Regional Consortium (SCCRC), which serves to facilitate and promote effective regional educational initiatives for its member colleges and key stakeholders in support of local, regional, and statewide workforce development efforts.

Oxnard College has consulted directly with the Workforce Development Board of Ventura County (WDBVC) on the proposed Baccalaureate program, as documented in the attached WDBVC Letter of Support. All Oxnard College Career & Technical Education (CTE) programs have advisory committees comprised of local and regional employers as well as other subject matter experts. The Advisory Committee for Dental Hygiene fully supports this application, as referenced in the attached letters of support.

In addition, Oxnard College and VCCCD are part of the Central Coast region of California's Community Economic Resilience Fund (CERF). We partnered with the Central Coast region, which spans six counties from Ventura County in the south through Santa Cruz County in the north, on the California's Regional K-16 Education Collaborative Grant. The one-year planning grant will enable the Central Coast K-16 Education Collaborative to develop a collective impact initiative to address equity gaps along the education-to-employment pathways for historically marginalized students and communities. There will be a special focus on equity, sustainability, job quality, economic competitiveness and resilience. Funding is designed to enhance or create collaborative efforts between the University of California system, the California State University system, Community Colleges, K-12 school districts, and workforce partners. This effort is a key component of a statewide strategy for cultivating regional economies and ensuring that education, vocational, and workforce programs work together to strengthen equitable education-to-workforce pathways. A minimum of 25% of the Collaborative's steering committee members will be business partners.

LETTERS OF SUPPORT:

Please find attached additional letters of support from:

Employers, Workforce Agencies, Advisory Board & Community Partners

1) Workforce Development Board of Ventura County
2) The South Central Coast Regional Consortium
3) City of Oxnard - Mayor John C. Zaragoza
4) The Santa Barbara – Ventura County Dental Society (Executive Director - Advisory Board Member)
5) Anthony Perez DDS (Advisory Board Member)
6) Camarillo Periodontics (2 letters) (Advisory Board Members)
7) Norman Nagel DDS and President of American Association of Orthodontics (Advisory Board Member)

The Higher Education Community

1) West Los Angeles City College
2) University of the Pacific
3) University of California Santa Barbara
4) Moorpark College
5) Fresno City College

ADDITIONAL EVIDENCE OF INDUSTRY AND CURRICULUM STANDARDS

1) CODA Accreditation Letter
2) ACCJC Substantive Change Approval Letter
3) American Dental Hygienists' Association – Standards for Clinical Dental Hygiene Practice

JUSTIFICATION FOR THE BACCALAUREATE DEGREES IN DENTAL HYGIENE

The following articles provide the justification of need for more baccalaureate degree programs in Dental Hygiene and an industry push toward the baccalaureate as the minimum entry-level degree in Dental Hygiene.

1) Journal of Dental Hygiene – The Baccalaureate as the Minimum Entry-Level Degree in Dental Hygiene: https://jdh.adha.org/content/95/6/46
2) American Dental Education Association- Bracing for the Future: Opening Up Pathways to the Bachelor's Degree for Dental Hygienists: https://www.adea.org/policy_advocacy/workforce_issues/Pages/default.aspx (Click on document title to download.)
3) American Dental Education Association- Dental Hygiene Program Types: https://www.adea.org/GoDental/Future_Dental_Hygienists/Program_types.aspx https://www.adea.org/godental/

4) American Dental Hygiene Association- Focus on Advancing the Profession: http://wsdha.com/clientuploads/pdfs/ADHA%20pdf/ADHA_Focus_on_Advancing_Profession.pdf
5) Journal of Dental Hygiene- Critical Issues in Dental Hygiene: https://jdh.adha.org/content/84/4/165

WORKFORCE DEVELOPMENT BOARD of Ventura County

December 16, 2022

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene.

Dental, Healthcare, and subspecialities continue to be in demand careers in the Ventura County Region. A Dental Hygiene baccalaureate degree program would help address the statewide shortage of Dental Hygiene instructors. As staffing shortages and early retirements in health care continue, it is important to have an adequate pipeline of qualified faculty to teach the next generation of Dental Hygienists. The Oxnard College Program would help fill this gap and ensure adequate faculty are available to sustain and expand the pipeline of new Dental Hygienists to fill the growing workforce shortages.

We believe this program will be a great addition to our local community college offerings, will assist low-income students and those with traditional barriers to employment in achieving a baccalaureate degree and will meet local and regional workforce needs.

Please feel free to contact me with any questions.

Sincerely,

Rebecca Evans
Rebecca Evans
Executive Director
Workforce Development Board of Ventura County
HSA-Info.WDB@ventura.org 805-477-5306

WDB Members

What Do We Do?

The Workforce Development Board of Ventura County serves the needs of business, workers, and job seekers in Ventura County. The WDBVC is a chief architect of the workforce system and plays a central role in building the talent pipeline for the future. The WDBVC manages a variety of funding sources to support workforce development throughout Ventura County.

What is a Workforce Development Board?

Workforce Development Board

The Ventura County Board of Supervisors appoints members to the WDB for three-year terms. The majority of WDB members are from the business sector in Ventura County. Others represent economic development, education, labor, government and community-based organizations.

WDB Chair

Stephen Yeoh
Un1teee

WDB Vice Chair

Laura Martinez
Ventura Pacific Company

WDB MEMBERS

- **Dollar, Victor** – Brighton Management
- **Gabler, Brian** – City of Simi Valley
- **Goldberg, Jeremy** – Tri-Counties Central Labor Council (AFL-CIO)
- **Herrera, Cynthia** – Ventura County Community College District
- **Jansen, Marilyn** – United Food & Commercial Workers Union Local 770
- **Jump, Victoria** – Area Agency on Aging, County of Ventura
- **Justus, Julia** – Meissner Filtration Products
- **Liu, Gregory** – Jaxx Manufacturing, Inc.
- **Mireles, Anthony** – Laborers International Union of North America
- **Perez, Tracy** – Manpower Group
- **Pratt, Bill** – Kinamed, Inc.
- **Rahim, Shaffiq** – Hi-Tech Engineering
- **Rivera, Alex** – Milgard Manufacturing, Inc.
- **Schulz, Patty** – The Arc of Ventura County
- **Serrato, Rosa** – Reiter Affiliated Companies
- **Stenslie, Bruce** – Economic Development Collaborative
- **Turner, Jay** – International Union of Operating Engineers, Local 12
- **Valladares, Cesar** – Employment Development Department
- **Vang-Walker, Carolyn** – Ventura Adult and Continuing Education
- **Ward, Byron** – Action Human Technologies, LLC
- **Winic, Brian** – California Department of Rehabilitation
- **Zacarias, Celina** – California State University, Channel Islands
- **Zierhut, Peter** – Haas Automation Inc.

January 12, 2023

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Re: Baccalaureate Degree Program

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene.

This proposal is endorsed by the South Central Coast Regional Consortium (SCCRC). We support Oxnard College's application, and it will meet an important need for our region and for the pipeline of Dental Hygiene instructors.

Please feel free to contact me with any questions.

Holly Nolan Chavez
Executive Director/ Regional Chair
South Central Coast Regional Consortium
hchavez@vcccd.edu (805) 922-6966 x5276

John C. Zaragoza
Mayor

Office of the Mayor
300 West Third Street
Oxnard, CA 93030
(805) 385-7435
Fax (805) 385-7595
www.oxnard.org

July 18, 2023

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Christian,

On behalf of the City of Oxnard, please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene.

Oxnard College (OC) is perfectly poised to implement this program. OC is a proud Hispanic Serving Institution that serves the hardworking Hispanic families of Ventura County who face several educational barriers. These include higher rates of poverty and English as a Second Language learners than the rest of the County, coupled with lower median household income and educational attainment. OC is an institution with 84% of students from racial/ethnic minorities (73% Hispanic/Latinx). Over 65% of the college's students are classified as low-income, and more than 44% are first-generation college students. Furthermore, the City of Oxnard has low rates of 4-year baccalaureate degree attainment (18.9%) for individuals 25 years of age and older, especially when juxtaposed against Ventura County (34%) and the State of California (35.3%).

Oxnard College engages in innovative student-centered programming and endeavors to introduce opportunities that enhance student outcomes and create a rich legacy for the community it serves. The baccalaureate degree in Dental Hygiene will ensure that students who wouldn't otherwise have the opportunity to earn a 4-year degree can experience academic achievement at an affordable price. More baccalaureate-prepared hygienists also mean more faculty to fill vacant positions needed to expand the Dental Hygiene associate's degree program. Further, a bachelor's degree in Dental Hygiene would prepare students for many living wage and in-demand positions in the local workforce.

This program will be a great addition to OC's offerings, assist low-income students in achieving a baccalaureate degree, and meet local workforce needs.

Please feel free to contact me with any questions.

Sincerely,

John C. Zaragoza
Mayor

SANTA BARBARA-VENTURA COUNTY DENTAL SOCIETY

A COMPONENT OF THE CALIFORNIA AND AMERICAN DENTAL ASSOCIATIONS

1607 EAST THOMPSON BOULEVARD • VENTURA, CALIFORNIA 93001
VENTURA (805) 648-7282 • (805) 648-5154 FAX
E-MAIL: EXECDIRECTOR@SBVCDS.ORG

December 7, 2022

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene. As the executive director of the local chapter of the American Dental Association, and as a member of the College's Advisory Committee for the Dental Hygiene program, I have had the opportunity to see the impact high demand programs can have on students and the community.

With the requirement for Dental Hygiene faculty members to hold a baccalaureate degree, we desperately need additional baccalaureate programs in Dental Hygiene to ensure we have sufficient faculty to train the next generation of Dental Hygienists. Currently the lack of prospective faculty with baccalaureate degrees prohibits the Oxnard College Dental Hygiene Educational Program from expanding to accept additional applicants to meet workforce demands in our community. This program would also prepare local students for future careers in education at a much more affordable tuition rate and eliminate the barriers associated with relocating to complete their education.

Not only will this program benefit the student, but ultimately it will benefit the community which will have people thriving in this important healthcare profession. We believe this program will be a great addition to our local community college offerings, will assist low-income students in achieving a baccalaureate degree and will meet local and statewide workforce needs.
Please feel free to contact me with any questions.

Sincerely,

Linda Lacunza

Linda Lacunza, MA
Executive Director

December 11,2022

California Community Colleges Chancellor's Office

1102 Q Street, Suite 4400

Sacramento, CA 94811

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community College Chancellor's Office to develop a baccalaureate program in Dental Hygiene. As a member of the College's Advisory Committee for the Dental Hygiene program, I have had the opportunity to see the impact high demand programs can have on students and the community.

With the requirement for Dental Hygiene faculty members to hold a baccalaureate degree, we desperately need additional baccalaureate programs in Dental Hygiene to ensure we have sufficient faculty to train the next generation of Dental Hygienists. Currently the lack of prospective faculty with baccalaureate degrees prohibits the Oxnard College Dental Hygiene Educational Program from expanding to accept additional applicants to meet workforce demands in our community. This program would also prepare local students for future careers in education at a much more affordable tuition rate and eliminate the barriers associated with relocating to complete their education.

We believe this program will be a great addition to our community college offerings, will assist low-income students in achieving a baccalaureate degree and will meet local and statewide workforce needs.

Please feel free to contact me with any questions.

Sincerely,

Anthony L. Perez DDS

E mail tonyperezdds@gmail.com

December 7, 2022

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene. As a member of the College's Advisory Committee for the Dental Hygiene program, I have had the opportunity to see the impact high demand programs can have on students and the community.

With the requirement for Dental Hygiene faculty members to hold a baccalaureate degree, we desperately need additional baccalaureate programs in Dental Hygiene to ensure we have sufficient faculty to train the next generation of Dental Hygienists. Currently the lack of prospective faculty with baccalaureate degrees prohibits the Oxnard College Dental Hygiene Educational Program from expanding to accept additional applicants to meet workforce demands in our community. This program would also prepare local students for future careers in education at a much more affordable tuition rate and eliminate the barriers associated with relocating to complete their education.

We believe this program will be a great addition to our local community college offerings, will assist low-income students in achieving a baccalaureate degree and will meet local and statewide workforce needs.

Please feel free to contact me with any questions.

Sincerely,

Richard K Hunter DDS MSD
Periodontist
Camarillo Periodontics
Richhunter8014@gmail.com-8058164005

December 7, 2022

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Gonzales,

Please accept this letter ofsuppo1i for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene. As a member of the College's Advisory Committee for the Dental Hygiene program, I have had the opportunity to see the impact high demand programs can have on students and the community.

With the requirement for Dental Hygiene faculty members to hold a baccalaureate degree, we desperately need additional baccalaureate programs in Dental Hygiene to ensure we have sufficient faculty to train the next generation of Dental Hygienists. Currently the lack of prospective faculty with baccalaureate degrees prohibits the Oxnard College Dental Hygiene Educational Program from expanding to accept additional applicants to meet workforce demands in our community. This program would also prepare local students for future careers in education at a much more affordable tuition rate and eliminate the barriers associated with relocating to complete their education.

We believe this program will be a great addition to our local community college offerings, will assist low-income students in achieving a baccalaureate degree and will meet local and statewide workforce needs.

Please feel free to contact me with any questions.

Sincerely,

Jeremy Wilgus DDS
Periodontist
Camarillo Periodontics
jercmywilgus@yahoo.corn-8053881730

Norman J. Nagel DDS, MS, INC
Jeffrey N. Nagel DDS, MS
ORTHODONTICS
Because a Smile is Forever

December 8, 20222

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Dear Chancellor Gonzales

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene. As a current member of the College's Advisory Committee for the Dental Hygiene Program, I have had the opportunity to see the impact the high demand programs can have on students and the community.

I have personally been intimately involved with this program since its beginning. I had the honor of being an elected Trustee to the Ventura County Community College District from 1994-2002 and served as the Chair of the Committee that began the dental hygiene program at Oxnard College. This program has been a "gift" to the citizens of Ventura County generally and Oxnard specifically for over 25 years.

With the requirements for Dental Hygiene faculty members to hold a baccalaureate degree, we desperately need additional baccalaureate programs in Dental Hygiene to ensure we have sufficient faculty to train the next generation of Dental Hygienists. Currently, the lack of prospective faculty with baccalaureate degrees prohibits the Oxnard College Dental Hygiene Educational Program from expanding to accept additional applicants to meet workforce demands in our community. This program would also prepare local students for future careers in education at a much more affordable tuition rate and eliminate the barriers associated with relocating to complete their education.

Park Plaza • 3695 Alamo St., Ste.301 • Simi Valley, CA 93063 • (805) 581-2480
Duesenberg Dental Square • 47 Duesenberg Dr., Ste. 202 • Thousand Oaks, CA 91362 • (805) 496-5114
www.nagelorthodontics.com

Norman J. Nagel DDS, MS, INC
Jeffrey N. Nagel DDS, MS
ORTHODONTICS
Because a Smile is Forever

The citizens of Ventura County have high hopes for this program. In 2002, the county passed a bond issue to allow for expansion of the community colleges. A new facility for the Dental Hygiene program was part of those plans and has been built. It is a beautiful facility that the men and women attending this program can be proud of. We believe this program will be a great addition to our local community college offerings and will assist low-income students in achieving baccalaureate degrees and will meet local and statewide workforce needs.

Please feel free to contact me with any questions. The best number is my cell 805-208-9604 or email me at nagelwire@yahoo.com.

Thank you for your consideration.

Sincerely yours,

Norman J. Nagel, D.D.S., M.S.
Colonel, USA Retired
Currently, President, American Association of Orthodontists

January 4, 2023

To Whom It May Concern:

This letter supports Oxnard College's development of a Dental Hygiene bachelor program. California offers approximately sixteen dental hygiene programs in community colleges, and only two confer bachelor's degrees. Private universities in California confer bachelor's degrees, but the cost exceeds affordability for students who typically attend community colleges. This issue raises equity questions and limits diversity in the profession.

Further, students complete close to 120 credit units or more for an associate's degree program in dental hygiene and the program's prerequisite courses. The prerequisite courses, the majority being in the sciences. As a result, most students graduate with two associate degrees. Yet another reason to establish additional community college bachelor programs.

Creating additional dental hygiene bachelor's programs will develop alternative pathways to employment for students. More recently, the new requirement for teaching in a dental hygiene program. According to the Commission on Dental Accreditation (CODA), the required external accrediting body, as of July 2022, a bachelor's degree is now required to teach in a dental hygiene program. And a report by the American Dental Educators Association shows 11 percent of faculty retiring in the next five years, with the majority being full-time faculty. In essence, there will soon be a faculty shortage.

West LA College has witnessed students graduating with a bachelor's degree obtain employment in various positions. Although many go on to work in private practice, some are now also going into research and academia positions. For all of the reasons above, West LA College fully supports Oxnard College's development of a bachelor's program in dental hygiene.

If you need additional information, don't hesitate to contact me at Kamibalt@wlac.edu

Sincerely,

Lisa Kamibayashi

Lisa Kamibayashi, RDH, MSDH
Director, Dental Hygiene
West Los Angeles College
310-287-4457
Kamibalt@wlac.edu

UNIVERSITY OF THE
PACIFIC
Arthur A. Dugoni
School of Dentistry

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Re: Oxnard College baccalaureate in Dental Hygiene

155 Fifth Street
San Francisco, CA 94103
www.dental.pacific.edu

Chancellor Gonzales,

As a Program Director at a California University offering a Bachelor of Science degree in Dental Hygiene, I support Oxnard College offering a baccalaureate degree to their students who meet the requirements.

There is a workforce need for Registered Dental Hygienists in California. Dental offices statewide report difficulty in filling dental hygiene positions and most students have employment offers prior to graduation. My school receives requests several times a week seeking graduates to apply for open positions.

Nationally, dental associations are attempting to raise the student to faculty ratio in dental hygiene education to allow for more students per graduating class.

A bachelor's degree in dental hygiene will open doors for students to enter areas of dentistry with higher pay. Public health, corporate educator and management positions most commonly require at least a bachelors degree. A baccalaureate or equivalent is required to pursue a license as a Registered Dental Hygienist in Alternative Practice, providing care to the most vulnerable of California's population.

Faculty needs will continue to increase in the state and without baccalaureate programs, we will not be ready to meet that need. All faculty must hold a bachelor's or higher degree.

For the reasons stated above, I support Oxnard College offering a baccalaureate degree in dental hygiene.

Lory Laughter

Lory Laughter, RDH, MS
Program Director, Dental Hygiene
University of the Pacific, Arthur A. Dugoni School of Dentistry
155 5th Street
San Francisco, CA 94103
415-780-2069/llaughter@pacific.edu

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

OFFICE OF EDUCATION PARTNERSHIPS
1501 SOUTH HALL
SANTA BARBARA, CA 93106-3011

December 16, 2022

California Community Colleges Chancellor's Office
1102 Q Street, Suite 4400
Sacramento, CA 95811

Subject: Oxnard College Dental Hygiene Baccalaureate Program

Dear Chancellor Gonzales,

Please accept this letter of support for Oxnard College's proposal to the California Community Colleges Chancellor's Office to develop a baccalaureate program in Dental Hygiene.

This proposal would not conflict with current baccalaureate majors at our campus. We support Oxnard College's application, and it will meet an important need for our community and for the pipeline of Dental Hygiene instructors.

Please feel free to contact me with any questions.

Sincerely,

M. L. Castellanos

Mario Castellanos
Executive Director & Chief Outreach Officer
University of California, Santa Barbara
Email: mario.castellanos@ucsb.edu
Telephone: 805-893-3105

MOORPARK COLLEGE

7075 Campus Road
Moorpark, CA 93021
www.moorparkcollege.edu
805 378 1400

January 10, 2023

Oscar Cobian, President Oxnard College
4000 South Rose Avenue
Oxnard, CA 93033

Dear Dr. Cobian,

This is a letter of support for Oxnard College's application to offer a baccalaureate degree in Dental Hygiene. This degree meets the core requirements of the SB850 to provide quality baccalaureate degrees to place-bound local students. The offering of this degree meets a unique need in our area and represents a significant opportunity for individual from historically underserved areas to attain degrees in high-wage careers.

We have direct knowledge of the expertise and excellence represented by the Oxnard faculty and administration. The current Associates Degree in Dental Hygiene is fully accredited by the Commission on Dental Accreditation (CODA), a subcommittee of the American Dental Association (ADA).

Moorpark currently shares several thousand students with Oxnard each academic year. We support Oxnard's bachelor's degree and will actively support student transfer and application to their program. Our entire region will benefit from this program.

As an Aspen 2023 Top Ten college, Moorpark College is proud to be a partner with Oxnard as part of the Ventura County Community College District. We have aligned missions to address equity gaps and be a critical force in improving the economic potentials of our region.

We enthusiastically support this application. Oxnard College's Bachelor's degree in Dental Hygiene meets a unique transfer need not available at region four year colleges. If you have any questions, please feel free to contact me.

Sincerely,

John Forbes, Ed.D.
Vice President of Academic Affairs
jforbes@vcccd.edu
Moorpark College

Fresno City College
1101 East University Avenue, Fresno, California 93741 Phone: 559-244-2604 FAX: 559-499-6047

Allied Health, Physical Education & Athletics Division

August 14, 2023

California Community College Chancellor's Office
Chancellor Dr. Daisy Gonzales
1102 Q Street, 6th Floor
Sacramento California 95811

Dear Chancellor Gonzales:

I am writing this letter in support of the Dental Hygiene Program at Oxnard College in Oxnard California. They are positioned to offer a Bachelor of Science Degree in Dental Hygiene if given the opportunity.

Currently students complete 2 years of prerequisite coursework mandated by the Commission on Dental Accreditation (CODA) and the Dental Hygiene Board of California (DHBC) and then they must complete two additional years of rigorous dental hygiene coursework. However, currently students graduate with only an Associate of Science Degree in Dental Hygiene. Many students graduate with 120 units or more, which is more in line with a baccalaureate degree. Allowing the Oxnard Dental Hygiene Program the ability to award a Bachelor of Science Degree in Dental Hygiene follows the vision and goals of the California Community Colleges of increasing degree attainment and reducing excess unit accumulation by students. This reform would accelerate the pace of students earning bachelor's degrees in California.

By allowing high earning unit programs to award a Bachelor of Science Degree in Dental Hygiene would break down persistent systemic barriers, especially those linked to racial and ethnic identities. Students would have a clear guided pathway which would affirm the goal and core commitment to drive improvement, success, and equity for the students attending Oxnard College. By decreasing the time to a degree and providing students with a system that works to their favor would be giving them the tools and opportunities to be successful for career advancement.

Oxnard College is a Hispanic Serving Institution whose mission encourages student success and lifelong learning while fostering its students and the region's sustainable economic, social, and cultural development. A core value of the institution is to promote sustainable social and economic mobility by building programs that foster trans-generational economic growth and prosperity.

Thank you for considering the application for Oxnard College's Dental Hygiene Program to offer a bachelor's degree as an important step towards advancing the economic workforce stability of the region.

Sincerely,

Joanne Pacheco

Joanne Pacheco, RDH, MAOB
Program Director, Fresno City College
Dental Hygiene Program

Commission on Dental Accreditation

Via Email Transmission: lsanchez@vcccd.edu

March 7, 2022

Dr. Luis Sanchez
President
Oxnard College
4000 S. Rose Avenue
Oxnard, CA 93033

RE: Oxnard College, Oxnard, California
Dental Hygiene Program
Status: Approval without Reporting Requirements

Dear Dr. Sanchez,

At its February 10, 2022 meeting, the Commission on Dental Accreditation (CODA) granted the dental hygiene program the accreditation status of "approval without reporting requirements." The definitions of accreditation classifications are linked below. Below is a summary of actions and additional information.

Dental Hygiene (Site Visit Report)
The Commission considered the site visit report on the dental hygiene program. The Commission also considered the institution's response to the site visit report.

On the basis of this review, the Commission adopted a resolution to grant the program the accreditation status of "approval without reporting requirements."

No additional information is requested from the program at this time. The next site visit for the program is scheduled for **2028**.

General Information
The findings of the Commission on Dental Accreditation are noted in the attached Commission approved site visit report. Oral comments made by site visit team members during the course of the site visit are not to be construed as official site visit findings unless documented within the site visit report and may not be publicized. Further, publication of site visit team members' names and/or contact information is prohibited.

One copy of this report has also been sent to the chief administrative officer and program director copied on this letter. The Commission requests that a copy of this report be forwarded to the chairpersons and appropriate faculty.

The Commission expects institutions to keep the Commission informed as soon as possible of anticipated changes in any approved educational program offered, particularly in the areas of administration, enrollment, faculty, facilities and curriculum. The Commission's policy and guidelines for reporting program changes are linked below. Guidelines for specific program changes, including reporting enrollment changes, adding sites where educational activity occurs, and developing a teach-out report are found on the Commission's website.

Institutions/Programs are expected to follow Commission policy and procedure on privacy and data security related to compliance with the Health Insurance Portability and Accountability Act (HIPAA). *The Commission's statement on HIPAA, as well as the Privacy and Data Security Summary for Institutions/Programs (PDF), are found in the Policies/Guidelines section of the Commission's website at* https://coda.ada.org/en/policies-and-guidelines/hipaa. *Programs that fail to comply with CODA's policy will be assessed an administrative fee of $4000.*

The Commission has authorized use of the following statement by institutions or programs that wish to announce their programmatic accreditation by the Commission. Programs that wish to advertise the specific programmatic accreditation status granted by the Commission may include that information as indicated in italics below (see text inside square brackets); that portion of the statement is optional but, if used, must be complete and current.

> The program in dental hygiene is accredited by the Commission on Dental Accreditation *[and has been granted the accreditation status of "approval without reporting requirements"]*. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611. The Commission's web address is: https://coda.ada.org/en.

The Commission wishes to thank you and the faculty and staff for their cooperation during the site visit. If this office can be of any assistance to you, please contact me by telephone, at 312-440-2940 or by e-mail, at tookss@ada.org.

Sincerely,

Sherin Tooks

Sherin Tooks, Ed.D., M.S.
Director, Commission on Dental Accreditation

ST/ds

Web Links: Accreditation Status Definitions
Guidelines for Reporting Program Changes
Electronic Submission Guidelines

Attachment: Formal Report of the Site Visit

cc: Dr. Josepha Baca, interim dean, Career Education, Oxnard College, jbaca@vcccd.edu
Ms. Susan McDonald, program coordinator, Dental Hygiene Program, Oxnard College, smcdonald@vcccd.edu
Mr. Herman Bounds, Jr., director, Accreditation Division, U.S. Department of Education (via CODA website)
State Boards of Dentistry (via CODA website)
Institutional Accreditors (via CODA website)
Dr. Bruce E. Rotter, chair, CODA

ACCJC
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ACCREDITING COMMISSION FOR
COMMUNITY AND JUNIOR COLLEGES
WESTERN ASSOCIATION OF SCHOOLS AND COLLEGES

Mac Powell, President
Lori Gaskin, Chair

March 27, 2023

Dr. Oscar Cobian
Interim President
Oxnard College
4000 South Rose Avenue
Oxnard, CA 93033

Dear President Cobian:

The Committee on Substantive Change of the Accrediting Commission for Community and Junior Colleges, Western Association of Schools and Colleges met March 27, 2023, to review the Substantive Change Application from Oxnard College to offer:

- New Program: Dental Hygiene (BS)

The Committee acted to **approve** the substantive change.

On behalf of the Commission, I wish to express appreciation for the work that the College undertook to prepare this Application for Substantive Change. The Commission encourages the College's continued work to ensure educational quality and to support student success.

If you should have any questions concerning this letter or the Commission action, please don't hesitate to contact me. We'd be glad to help you.

Sincerely,

Kevin Bontenbal, Ed.D.
Vice President

Cc: Dr. Luis Gonzalez, Accreditation Liaison Officer
Dr. Catherine Webb, ACCJC Vice President
Ms. Martina Fernandez-Rosario, U.S. Department of Education

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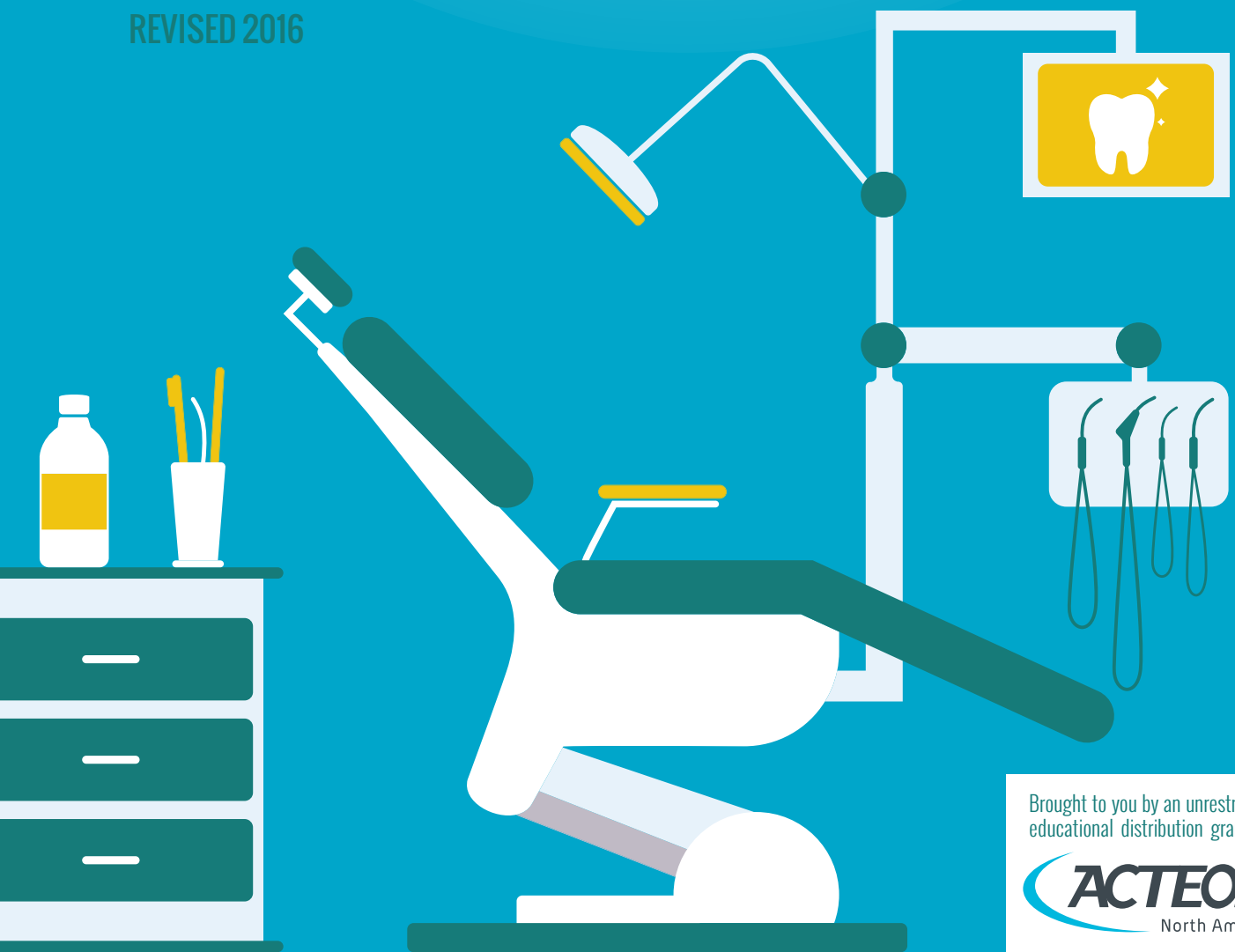
American Dental Hygienists' Association

STANDARDS FOR CLINICAL DENTAL HYGIENE PRACTICE

REVISED 2016



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JUNE 2016

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SEPTEMBER 2014 WITH UPDATED POLICIES AND REFERENCES

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MARCH 10, 2008

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ACTION
ADOPTED BY ADHA BOARD OF TRUSTEES

adha American Dental Hygienists' Association

STANDARDS FOR CLINICAL DENTAL HYGIENE PRACTICE

REVISED 2016

History

One hallmark of a true profession is its willingness to assume responsibility for the quality of care that its members provide. In 1985, the American Dental Hygienists' Association (ADHA) took a major step toward fulfillment of that responsibility with the development of Applied Standards of Clinical Dental Hygiene Practice.[1] This document is the third revision[2] to build on those Standards and promote dental hygiene practice based on current and relevant scientific evidence.

Introduction

The Standards for Clinical Dental Hygiene Practice outlined in this document guide the individual dental hygienist's practice. Dental hygienists remain individually accountable to the standards set by the discipline and by applicable federal, state, and local statutes and regulations that define and guide professional practice.[3] These Standards should not be considered as a substitute for professional clinical judgment. In addition, they should not be confused with the Accreditation Standards for Dental Hygiene Education Programs, which are chiefly concerned with the structure and operation of dental hygiene education programs.[4]

Dental hygienists are valued members of the health care workforce. They have the knowledge, skills, and professional responsibility to provide oral health promotion and health protection strategies for all individuals as well as groups. As licensed professionals, they are accountable for the care and services they provide.

These Standards promote the knowledge, values, practices, and behaviors that support and enhance oral health with the ultimate goal of improving overall health. The primary purpose of the Standards for Clinical Dental Hygiene Practice is to assist dental hygiene clinicians in the provider-patient relationship. In addition, dental hygienists in other professional roles such as educator, researcher, entrepreneur, public health professional, and administrator — as well as those employed in corporate settings — can use these Standards to facilitate the implementation of collaborative, patient-centered care in interprofessional teams of health professionals. This collaboration can occur in a variety of practice settings including community and public health centers, hospitals, school-based programs, long-term care facilities, outreach, and home care programs. The secondary purpose of these Standards is to educate other health care providers, policymakers, and the public about the clinical practice of dental hygiene. The purpose of medical and dental science is to enhance the health of individuals as well as populations. Dental hygienists use scientific evidence in the decision-making process impacting their patient care. The dental hygienist is expected to respect the diverse values, beliefs, and cultures present in individuals and communities. When providing dental hygiene care, dental hygienists must support the right of the individual to have access to the necessary information and provide opportunities for dialogue to allow the individual patient to make informed care decisions without coercion. Facilitating effective communication might require an interpreter and/or translator based on the patient and practitioner's need to communicate. Dental hygienists must realize and establish their professional responsibility in accordance with the rights of individuals and groups. In addition, when participating in activities where decisions are made that have an im-

pact on health, dental hygienists are obligated to assure that ethical and legal issues are addressed as part of the decision-making process. Dental hygienists are bound by the Code of Ethics of the American Dental Hygienists' Association.[3]

The Standards for Clinical Dental Hygiene Practice provide a framework for clinical practice that focuses on the provision of patient-centered comprehensive care. The Standards describe a competent level of dental hygiene care[1,2,4-7] as demonstrated by the critical thinking model known as the dental hygiene process of care.[7] As evidenced by ADHA policy[6] and various dental hygiene textbooks,[8-10] the six components of the dental hygiene process of care include assessment, dental hygiene diagnosis, planning, implementation, evaluation, and documentation (Appendix A). The dental hygiene process encompasses all significant actions taken by dental hygienists and forms the foundation of clinical decision-making.

Definition Of Dental Hygiene Practice

Dental hygiene is the science and practice of recognition, prevention and treatment of oral diseases and conditions as an integral component of total health.[11] The dental hygienist is a primary care oral health professional who has graduated from an accredited dental hygiene program in an institution of higher education, licensed in dental hygiene to provide education, assessment, research, administrative, diagnostic, preventive and therapeutic services that support overall health through the promotion of optimal oral health.[12] In practice, dental hygienists integrate multiple roles to prevent oral diseases and promote health (Appendix B).

Dental hygienists work in partnership with all members of the dental team. Dentists and dental hygienists practice together as colleagues, each offering professional expertise for the goal of providing optimum oral health care to the public. The distinct roles of the dental hygienist and dentist complement and augment the effectiveness of each professional and contribute to a collaborative environment. Dental hygienists are viewed as experts in their field; are consulted about appropriate dental hygiene interventions; are expected to make clinical dental hygiene decisions; and are expected to plan, implement, and evaluate the dental hygiene component of the overall care plan.[7-10] All states define their specific dental hygiene practice scope and licensure requirements.

Educational Preparation

The registered dental hygienist (RDH) or licensed dental hygienist (LDH) is educationally prepared for practice upon graduation from an accredited dental hygiene program (associate, post-degree certificate, or baccalaureate) within an institution of higher education and qualified by successful completion of a national written board examination and state or regional clinical examination for licensure. In 1986, the ADHA declared its intent to establish the baccalaureate degree as the minimum entry level for dental hygiene practice (Appendix C).[7,13-14]

Practice Settings

Dental hygienists can apply their professional knowledge and skills in a variety of work settings as clinicians, educators, researchers, administrators, entrepreneurs, and public health professionals, and as employees in corporate settings. Working in a private dental office c ontinues t o be the primary place of employment for dental hygienists. However, never before has there been more opportunity for professional growth. Clinical dental hygienists may be employed in a variety of health care settings including, but not limited to, private dental offices, schools, public health clinics, hospitals, managed care organizations, correctional institutions, or nursing homes.[6]

One example of an innovative, interprofessional practice model was tested by Patricia Braun, MD, MPH, Associate Professor, Pediatrics and Family Medicine at the University of Colorado Anschultz School of Medicine. This project co-located a dental hygienist in the pediatrician's office. Co-locating dental hygienists into medical practices is a feasible and innovative way to provide oral health care, especially for those who have limited access to preventive oral health services. [14]

Another innovative model exists in Oregon, where expanded practice dental hygienists (EPDHs) do not need a collaborative agreement with a dentist to initiate dental hygiene care for populations that qualify as having limited access to care; however, some aspects do require a collaborative agreement.15

EPDHs in Oregon are able to work in a variety of settings,16 such as nursing homes and schools, and many are employed as private business owners.14

Professional Responsibilities and Considerations

Dental hygienists are responsible and accountable for their dental hygiene practice, conduct, and decision-making. Throughout their professional career in any practice setting, a dental hygienist is expected to:

- Understand and adhere to the ADHA Code of Ethics.
- Maintain a current license to practice, including certifications as appropriate.
- Demonstrate respect for the knowledge, expertise, and contributions of dentists, dental hygienists, dental assistants, dental office staff, and other health care professionals.
- Articulate the roles and responsibilities of the dental hygienist to the patient, interprofessional team members, referring providers, and others.
- Apply problem-solving processes in decision-making and evaluate these processes.
- Demonstrate professional behavior.
- Maintain compliance with established infection control standards following the most current guidelines to reduce the risks of health-care-associated infections in patients, and illnesses and injuries in health care personnel.
- Incorporate cultural competence[17] in all professional interactions.
- Access and utilize current, valid, and reliable evidence in clinical decision-making through analyzing and interpreting the literature and other resources.
- Maintain awareness of changing trends in dental hygiene, health, and society that impact dental hygiene care.
- Support the dental hygiene profession through ADHA membership.
- Interact with peers and colleagues to create an environment that supports collegiality and teamwork.
- Prevent situations where patient safety and well-being could potentially be compromised.
- Contribute to a safe, supportive, and professional work environment.
- Participate in activities to enhance and maintain continued competence and address professional issues as determined by appropriate self-assessment.
- Commit to lifelong learning to maintain competence in an evolving health care system.

Dental Hygiene Process of Care

The purpose of the dental hygiene process of care is to provide a framework where the individualized needs of the patient can be met; and to identify the causative or influencing factors of a condition that can be reduced, eliminated, or prevented by the dental hygienist.[8-10] There are six components to the dental hygiene process of care (assessment, dental hygiene diagnosis, planning, implementation and evaluation, and documentation; see Appendix A).[7-10, 18]

The dental hygiene diagnosis is a key component of the process and involves assessment of the data collected, consultation with the dentist and other health care providers, and informed decision-making. The dental hygiene diagnosis and care plan are incorporated into the comprehensive plan that includes restorative, cosmetic, and oral health needs that the patient values. All components of the process of care are interrelated and depend upon ongoing assessments and evaluation of treatment outcomes to determine the need for change in the care plan. These Standards follow the dental hygiene process of care to provide a structure for clinical practice that focuses on the provision of patient-centered comprehensive care.

STANDARDS OF PRACTICE

Standard 1: Assessment

The ADHA definition of assessment: The collection and analysis of systematic and oral health data in order to identify client needs.[19]

I. HEALTH HISTORY

A health history assessment includes multiple data points that are collected through a written document and an oral interview. The process helps build a rapport with the patient and verifies key elements of the health status. Information is collected and discussed in a location that ensures patient privacy and complies with the Health Insurance Portability and Accountability Act (HIPAA).

Demographic information is any information that is necessary for conducting the business of dentistry. It includes but is not limited to address, date of birth, emergency contact information, phone numbers, and names and addresses of the referring/previous dentist and physician of record.

Vital Signs including temperature, pulse, respiration, and blood pressure provide a baseline or help identify potential or undiagnosed medical conditions.

Physical characteristics of height and weight provide information for drug dosing and anesthesia and indicate risk for medical complications. Disproportionate height and weight also combine as a risk factor for diabetes and other systemic diseases that impact oral health and should prompt the practitioner to request glucose levels for health history documentation.

Social history information such as marital status, children, occupation, cultural practices, and other beliefs might affect health or influence treatment acceptance.

Medical history is the documentation of overall medical health. This information can identify the need for physician consultation or any contraindications for treatment. This would include any mental health diagnosis, cognitive impairments (e.g., stages of dementia), behavioral challenges (e.g., autism spectrum), and functional capacity assessment. It would also include the patient's level of ability to perform a specific activity such as withstanding a long dental appointment as well as whether the patient requires modified positioning for treatment. Laboratory tests such as A1C and current glucose levels may need to be requested if they are not checked regularly.

Pharmacologic history includes the list of medications, including dose and frequency, which the patient is currently taking. This includes but is not limited to any over-the-counter (OTC) drugs or products such as herbs, vitamins, nutritional supplements, and probiotics. The practitioner should confirm any past history of an allergic or adverse reaction to any products.

II. CLINICAL ASSESSMENT

Planning and providing optimal care require a thorough and systematic overall observation and clinical assessment. Components of the clinical assessment include an examination of the head and neck and oral cavity including an oral cancer screening, documentation of normal or abnormal findings, and assessment of the temporomandibular function. A current, complete, and diagnostic

set of radiographs provides needed data for a comprehensive dental and periodontal assessment.

A comprehensive periodontal examination is part of clinical assessment. It includes

A. Full-mouth periodontal charting including the following data points reported by location, severity, quality, written description, or numerically:
   1. Probing depths
   2. Bleeding points
   3. Suppuration
   4. Mucogingival relationships/defects
   5. Recession
   6. Attachment level/attachment loss
B. Presence, degree, and distribution of plaque and calculus
C. Gingival health/disease
D. Bone height/bone loss
E. Mobility and fremitus
F. Presence, location, and extent of furcation involvement

A comprehensive hard-tissue evaluation that includes the charting of existing conditions and oral habits, with intraoral photographs and radiographs that supplement the data.

A. Demineralization
B. Caries
C. Defects
D. Sealants
E. Existing restorations and potential needs
F. Implants
G. Anomalies
H. Occlusion
I. Fixed and removable prostheses retained by natural teeth or implant abutments
J. Missing teeth

III. RISK ASSESSMENT[20-21]

Risk assessment is a qualitative and quantitative evaluation based on the health history and clinical assessment to identify any risks to general and oral health. The data provide the clinician with the information to develop and design strategies for preventing or limiting disease and promoting health. Examples of factors that should be evaluated to determine the level of risk (high, moderate, low) include but are not limited to:

A. Fluoride exposure
B. Tobacco exposure including smoking, smokeless/spit tobacco and second-hand smoke
C. Nutrition history and dietary practices including consumption of sugar-sweetened beverages
D. Systemic diseases/conditions (e.g., diabetes, cardiovascular disease, autoimmune, etc.)
E. Prescriptions and over-the-counter medications, and complementary therapies and practices (e.g., fluoride, herbal, vitamin and other supplements, daily aspirin, probiotics)
F. Salivary function and xerostomia
G. Age and gender
H. Genetics and family history
I. Habit and lifestyle behaviors
   1. Cultural issues
   2. Substance abuse (recreational drugs, prescription medication, alcohol)
   3. Eating disorders/weight loss surgery
   4. Piercing and body modification
   5. Oral habits
   6. Sports and recreation (swimming, extreme sports [marathon, triathlon], energy drinks/gels
J. Physical disability (morbid obesity, vision and/or hearing loss, osteoarthritis, joint replacement)
K. Psychological, cognitive, and social considerations
   1. Domestic violence
   2. Physical, emotional, or sexual abuse
   3. Behavioral
   4. Psychiatric
   5. Special needs
   6. Literacy
   7. Economic
   8. Stress
   9. Neglect

Standard 2: Dental Hygiene Diagnosis

The ADHA defines dental hygiene diagnosis as the identification of an individual's health behaviors, attitudes, and oral health care needs for which a dental hygienist is educationally qualified and licensed to provide. The dental hygiene diagnosis requires evidence-based critical analysis and interpretation of assessments in order to reach conclusions about the patient's dental hygiene treatment needs. The dental hygiene diagnosis provides the basis for the dental hygiene care plan.[22]

Multiple dental hygiene diagnoses may be made for each patient or client. Only after recognizing the dental hygiene diagnosis can the dental hygienist formulate a care plan that focuses on dental hygiene education, patient self-care practices, prevention strategies, and treatment and evaluation protocols to focus on patient or community oral health needs.[23]

I. Analyze and interpret all assessment data.
II. Formulate the dental hygiene diagnosis or diagnoses.
III. Communicate the dental hygiene diagnosis with patients or clients.
IV. Determine patient needs that can be improved through the delivery of dental hygiene care.
V. Identify referrals needed within dentistry and other health care disciplines based on dental hygiene diagnoses.

Standard 3: Planning

Planning is the establishment of realistic goals and the selection of dental hygiene interventions that can move the client closer to optimal oral health.[24] The interventions should support overall patient goals and oral health outcomes. Depending upon the work setting and state law, the dental hygiene care plan may be stand-alone or part of collaborative agreement. The plan lays the foundation for documentation and may serve as a guide for Medicaid reimbursement. Dental hygienists make clinical decisions within the context of legal and ethical principles.

The dental hygiene care plan should be a vehicle for care that is safe, evidence-based, clinically sound, high-quality, and equitable. The plan should be personalized according to the individual's unique oral health needs, general health status, values, expectations, and abilities. When formulating the plan, dental hygienists should be sensitive and responsive to the patient's culture, age, gender, language, and learning style. They should demonstrate respect and compassion for individual patient choices and priorities.

I. Identify all needed dental hygiene interventions including change management, preventive services, treatment, and referrals.
II. In collaboration with the patient and/or caregiver, prioritize and sequence the interventions allowing for flexibility if necessary and possible.
III. Identify and coordinate resources needed to facilitate comprehensive quality care (e.g., current technologies, pain management, adequate personnel, appropriate appointment sequencing, and time management).
IV. Collaborate and work effectively with the dentist and other health care providers and community-based oral health programs to provide high-level, patient-centered care.
V. Present and document dental hygiene care plan to the patient/caregiver.
VI. Counsel and educate the patient and/or caregiver about the treatment rationale, risks, benefits, anticipated outcomes, evidence-based treatment alternatives, and prognosis.
VII. Obtain and document informed consent and/or informed refusal.

Standard 4: Implementation

Implementation is the act of carrying out the dental hygiene plan of care.[24] Care should be delivered in a manner that minimizes risk; optimizes oral health; and recognizes issues related to patient comfort including pain, fear, and/or anxiety. Through the presentation of the dental hygiene

care plan, the dental hygienist has the opportunity to create and sustain a therapeutic and ethically sound relationship with the patient.

Depending upon the number of interventions, the dental hygiene care plan may implemented in one preventive/wellness visit or several therapeutic visits before a continuing or maintenance plan is established. Health promotion and self-care are integral aspects of the care plan that should be customized and implemented according to patient interest and ability.

I. Review and confirm the dental hygiene care plan with the patient/caregiver.
II. Modify the plan as necessary and obtain any additional consent.
III. Implement the plan beginning with the mutually agreed upon first prioritized intervention.
IV. Monitor patient comfort.
V. Provide any necessary post-treatment instruction.
VI. Implement the appropriate self-care intervention; adapt as necessary throughout future interventions.
VII. Confirm the plan for continuing care or maintenance.
VIII. Maintain patient privacy and confidentiality.
IX. Follow-up as necessary with the patient (post-treatment instruction, pain management, self-care).

Standard 5: Evaluation

Evaluation is the measurement of the extent to which the client has achieved the goals specified in the dental hygiene care plan. The dental hygienist uses evidence-based decisions to continue, discontinue, or modify the care plan based on the ongoing reassessments and subsequent diagnoses.[25] The evaluation process includes reviewing and interpreting the results of the dental hygiene care provided and may include outcome measures that are physiologic (improved health), functional, and psychosocial (quality of life, improved patient perception of care). Evaluation occurs throughout the process as well as at the completion of care.

I. Use measurable assessment criteria to evaluate the tangible outcomes of dental hygiene care (e.g., probing, plaque control, bleeding points, retention of sealants, etc.).
II. Communicate to the patient, dentist, and other health/dental care providers the outcomes of dental hygiene care.
III. Evaluate patient satisfaction of the care provided through oral and written questionnaires.
IV. Collaborate to determine the need for additional diagnostics, treatment, referral, education, and continuing care based on treatment outcomes and self-care behaviors.
V. Self-assess the effectiveness of the process of providing care, identifying strengths and areas for improvement. Develop a plan to improve areas of weakness.[26]

Standard 6: Documentation

The primary goals of good documentation are to maintain continuity of care, provide a means of communication between/among treating providers, and to minimize the risk of exposure to malpractice claims. Dental hygiene records are considered legal documents and as such should include the complete and accurate recording of all collected data, treatment planned and provided, recommendations (both oral and written), referrals, prescriptions, patient/client comments and related communication, treatment outcomes and patient satisfaction, and other information relevant to patient care and treatment.

I. Document all components of the dental hygiene process of care (assessment, dental hygiene diagnosis, planning, implementation, and evaluation) including the purpose of the patient's visit in the patient's own words. Documentation should be detailed and comprehensive; e.g., thoroughness of assessment (soft-tissue examination, oral cancer screening, periodontal probing, tooth mobility) and

reasons for referrals (and to whom and follow-up). Treatment plans should be consistent with the dental hygiene diagnosis and include no evidence that the patient is placed at inappropriate risk by a diagnostic or therapeutic procedure.[26]

II. Objectively record all information and interactions between the patient and the practice (e.g., telephone calls, emergencies, prescriptions) including patient failure to return for treatment or follow through with recommendations.

III. Record legible, concise, and accurate information. For example, include dates and signatures, record clinical information so that subsequent providers can understand it, and ensure that all components of the patient record are current and accurately labeled and that common terminology and abbreviations are standard or universal.

IV. Recognize ethical and legal responsibilities of recordkeeping including guidelines outlined in state regulations and statutes.

V. Ensure compliance with the federal Health Information Portability and Accountability Act (HIPAA). Electronic communications must meet HIPAA standards in order to protect confidentiality and prevent changing entries at a later date.

VI. Respect and protect the confidentiality of patient information.

Summary

The Standards for Clinical Dental Hygiene Practice are a resource for dental hygiene practitioners seeking to provide patient-centered and evidence-based care. In addition, dental hygienists are encouraged to enhance their knowledge and skill base to maintain continued competence.27-28 These Standards will be modified based on emerging scientific evidence, ADHA policy development, federal and state regulations, and changing disease patterns as well as other factors to assure quality care and safety as needed.

KEY TERMS

Client: The concept of client refers to the potential or actual recipients of ***dental hygiene*** care, and includes persons, families, groups and communities of all ages, genders, socio-cultural and economic states.[29]

Cultural Competence: the awareness of cultural difference among all populations, respect of those differences and application of that knowledge to professional practice.[17]

Dental Hygiene Care Plan: an organized presentation or list of interventions to promote the health or prevent disease of the patient's oral condition. The plan is designed by the dental hygienist and consists of services that the dental hygienist is educated and licensed to provide.[5, 7]

Evidence-Based Practice: the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual clients. The practice of evidence-based dental hygiene requires the integration of individual clinical expertise and client preferences with the best available external clinical evidence from systematic research.[30]

Intervention: dental hygiene services rendered to clients as identified in the dental hygiene care plan. These services may be clinical, educational, or health promotion related.[29]

Interprofessional Team: a group of health care professionals and their patients who work together to achieve shared goals. The team can consist of the dental hygienist, dentist, physician, nutritionist, smoking cessation counselor, nurse practitioner, etc.[31]

Outcome: result derived from a specific intervention or treatment.

Patient: the potential or actual recipient of dental hygiene care, including persons, families, groups, and communities of all ages, genders, and socio-cultural and economic states.[22]

Patient-Centered: approaching services from the perspective that the client is the main focus of attention, interest, and activity The client's values, beliefs, and needs are of utmost importance in providing evidence-based care.[32]

Risk Assessment: an assessment based on characteristics, behaviors, or exposures that are associated with a particular disease; e.g., smoking, diabetes, or poor oral hygiene.[21]

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RESOURCES

The following websites can provide evidence upon which to base clinical decisions in compliance with the Commission on Dental Accreditation (CODA) Accreditation Standards for Dental Hygiene Education Programs.

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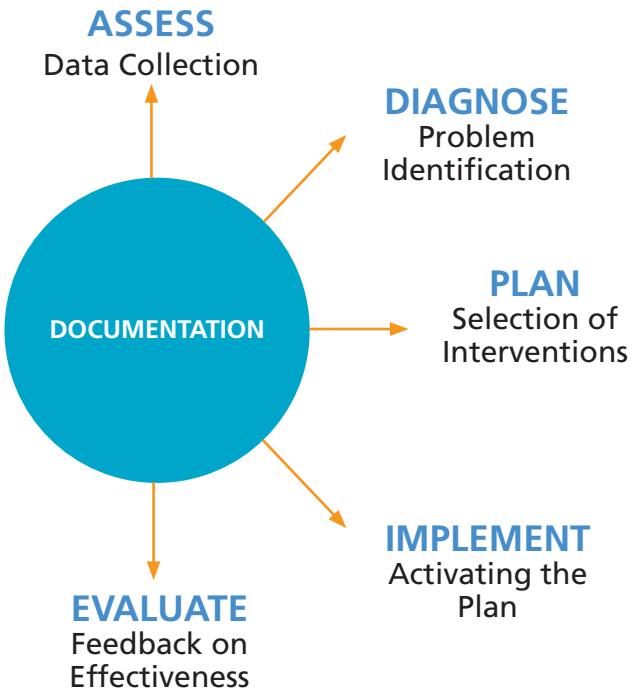
Appendix A

DENTAL HYGIENE PROCESS OF CARE [7]

There are six components to the dental hygiene process of care. These include assessment, dental hygiene diagnosis, planning, implementation, evaluation, and documentation. The six components provide a framework for patient care activities.

Adapted from: Wilkins EM. Clinical Practice of the Dental Hygienist. 12th ed. Philadelphia, PA: Wolters Kluwer. 2017. pp. 12-14.



Appendix B

PROFESSIONAL ROLE OF THE DENTAL HYGIENIST [33]

Overview

The dental hygienist plays an integral role in assisting individuals and groups in achieving and maintaining optimal oral health. Dental hygienists provide educational, clinical and consultative services to individuals and populations of all ages in a variety of settings and capacities. The professional roles of the dental hygienist are outlined below .

Clinician

Dental hygienists in a clinical role assess, diagnose, plan, implement, evaluate and document treatment for prevention, intervention and control of oral diseases, while practicing in collaboration with other health professionals. Examples of clinical employment settings include:

- Private dental practices
- Community clinics
- Hospitals
- University dental clinics
- Prison facilities
- Nursing homes
- Schools

Corporate

Corporate dental hygienists are employed by companies that support the oral health industry through the sale of products and services. Leaders throughout the dental industry often employ dental hygienists due to their clinical experience and understanding of dental practice. Examples of corporate positions include:

- Sales representatives
- Product researchers
- Corporate educators
- Corporate administrators

Public Health

Community health programs are typically funded by government or nonprofit organizations. These positions often offer an opportunity to provide care to those who otherwise would not have access to dental care. Examples of positions for dental hygienists in public health settings include:

Clinician

- Rural or inner city community clinics
- Indian Health Service
- Head Start programs
- School sealant programs

Administrator

- State public health officer
- Community clinic administrator

Researcher

Research conducted by dental hygienists can be either qualitative or quantitative. Quantitative research involves conducting surveys and analyzing the results, while qualitative research may involve testing a new procedure, product or theory for accuracy, effectiveness, etc. Examples of employment settings for dental hygienist researchers include:

- Colleges and universities
- Corporations
- Governmental agencies
- Nonprofit organizations

Educator

Dental hygiene educators are in great demand. Colleges and universities throughout the U.S. require dental hygiene instructors who use educational theory and methodology to educate competent oral health professionals. Corporations also employ educators who provide continuing education to licensed dental hygienists. Examples of dental hygiene educators include:

- Clinical instructors
- Classroom instructors
- Program directors
- Corporate educators

Administrator

Dental hygienists in administrative positions apply organizational skills, communicate objectives, identify and manage resources, and evaluate and modify programs of health, education and health care. Examples of administrative positions held by dental hygienists include:

- Clinical director, statewide school sealant program
- Program director, dental hygiene educational program
- Executive director, state association staff
- Research administrator, university
- Director, corporate sales

Entrepreneur

By using imagination and creativity to initiate or finance new commercial enterprises, dental hygienists have become successful entrepreneurs in a variety of businesses. Some examples of business opportunities developed by dental hygienists include:

- Practice management company
- Product development and sales
- Employment service
- CE provider or meeting planner
- Consulting business
- Founder of a nonprofit
- Independent clinical practice
- Professional speaker / writer

Appendix C

EDUCATIONAL PATH FOR ENTRY INTO THE PROFESSION

Dental hygienists must complete an accredited educational program to qualify for licensure in a particular state or region. Dental hygienists are licensed with the credential of Registered Dental Hygienist (RDH) or Licensed Dental Hygienist (LDH) following completion of an academic program that includes didactic and clinical requirements.

PROFESSIONAL SPECIALIZATION

Dental hygienists can further their academic credentials after earning a certificate, associate, and/or baccalaureate degree. A dental hygienist can continue their educational advancement by enrolling in a variety of Master's level programs which provides eligibility for a Doctoral level degree.

Four year academic program in an undergraduate educational environment

Two+ years of college (usually one year of pre-requisite course work followed by two years of professsional courses)

National Board Dental Hygiene Examination successfully passed

Clinical/written examination as required by region of state successfully passed

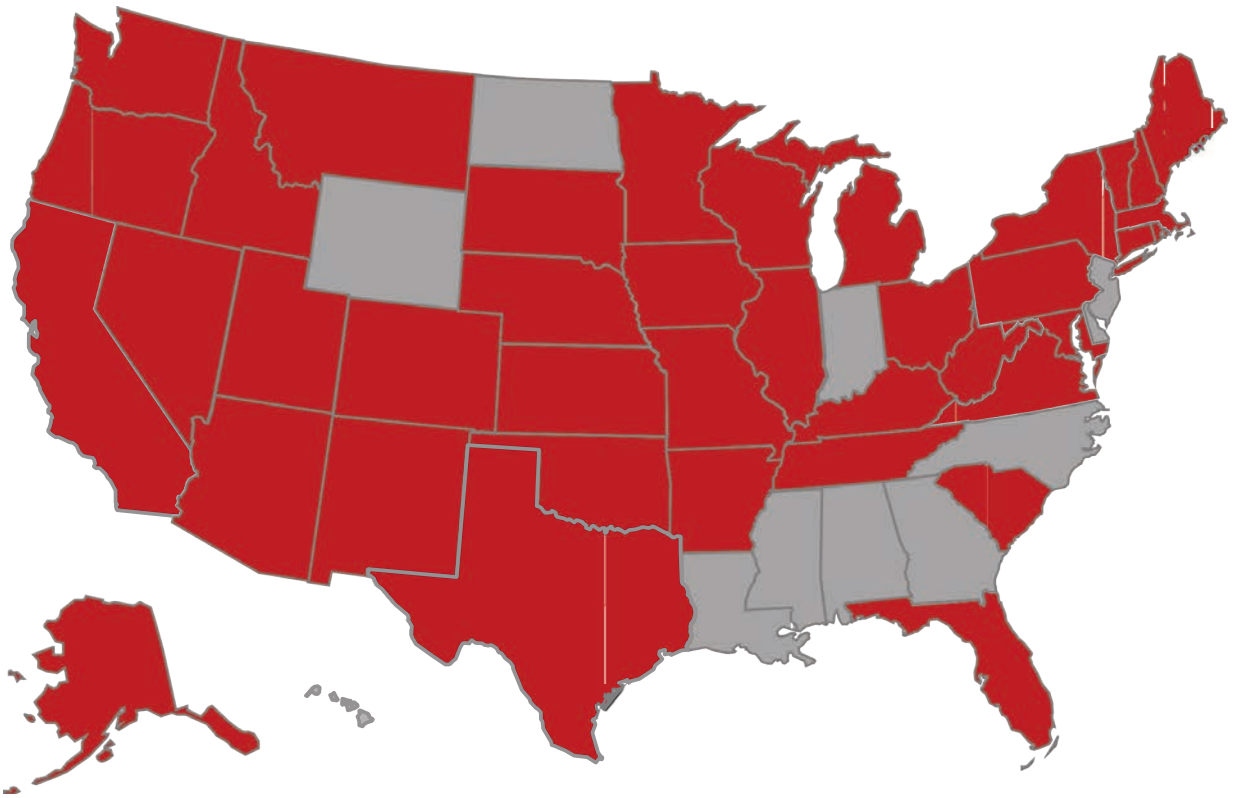
Licensure granted by state board of dentistry

Appendix D

DIRECT ACCESS 2016

The American Dental Hygienists' Association (ADHA) defines direct access as the ability of a dental hygienist to initiate treatment based on their assessment of a patient's needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and maintain a provider-patient relationship (ADHA Policy Manual, 13-15).

States that permit direct access to dental hygienists
Revised April 2016 www.adha.org



Development and Validation Process for the Standards for Clinical Dental Hygiene Practice

In 2003, the ADHA Board of Trustees approved the establishment of a task force to define and develop standards of clinical dental hygiene practice. The previous standards of practice document created by ADHA was published in 1985 and was no longer being distributed due to the significant changes in dental hygiene practice; therefore the association did not have document accurately reflecting the nature of clinical dental hygiene practice. A series of task force meetings occurred by phone, electronically and in-person from 2004-2008 in order to create and revise the draft standards document.

As part of the validation process, in November 2005, a survey was distributed to all ADHA council members, 50 participants in the ADHA Constituent Officers Workshop, and a 50-member random selection of the ADHA membership to provide feedback regarding the draft Standards of Practice that had been created by the task force. The data collected from these audiences was collated, analyzed and reviewed by the task force in making subsequent modifications.

During the 2006 ADHA Annual Session, the chair of the task force presented the draft Standards document to the membership, responded to questions, and requested written and verbal feedback regarding the direction of the document. The Standards were also posted on the ADHA website prior to the annual meeting and for a period following in order to solicit feedback from the membership and other communities of interest. In the fall of 2006, the task force met and considered the comments from all respondents and made additional revisions to the document. The task force also reviewed clinical standards of practice documents from other professions as a point of comparison.

In 2007, the revised Standards were shared during the ADHA Annual Session with the draft document posted online and open for comments from the communities of interest. Following the annual meeting, the draft document was also broadly distributed to the broad communities of interest, which included a pool of approximately 200 organizations.

Following the collection of feedback from all interested parties, the task force considered all feedback and met by conference call in order to finalize the document. The final document was submitted to the ADHA Board of Trustees in March 2008 for their consideration and adoption.

In September 2014, the Standards for Clinical Dental Hygiene Practice policies and references were updated and the document was reprinted. It was determined at the 2015 Annual Session that the Standards would need to be revised since at least three years had passed since the last full revision of the document. A new task force was appointed by ADHA President Jill Rethman, RDH, BA, for the revision of the Standards.

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Research Article | Critical Issues in Dental Hygiene Education

The Baccalaureate as the Minimum Entry-Level Degree in Dental Hygiene

Rosemary DeRosa Hays and Stefania Moglia Willis

American Dental Hygienists' Association December 2021, 95 (6) 46-53;

Abstract

A growing body of evidence indicates the baccalaureate degree is needed for dental hygiene (DH) graduates to address the changes in oral health delivery and health systems, develop the societal expectations of a professional, and practice to the full extent of their education. Transitioning from the associate to the baccalaureate as the minimum entry-level degree in DH will better prepare graduates to address the increasingly complex oral health care needs of the public. The higher degree prepares the dental hygienist to serve in roles that will improve access to high-quality care and allow for interprofessional collaboration as a part of a health care team. A higher entry-level degree is also needed to advance the public perception of DH and its recognition as a unique health care profession. However, reported student barriers to the entry-level baccalaureate degree include time and funding constraints, and the belief that the associate degree education is sufficient for clinical practice coupled with a lack of perceived value/benefit of the higher-level degree. This narrative literature review examines relevant policies, standards, and survey data to assess the support for the baccalaureate degree as minimum entry-level education in DH. As the roles for dental hygienists expand to meet the needs of the changing population demographics, the health care market demands for a baccalaureate degree educated dental hygienist will follow. More research is needed to

document the value of the baccalaureate-prepared dental hygienist.

dental hygiene dental hygiene education baccalaureate bachelor's degree dental hygiene practice workforce models

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Bracing for The Future:
Opening Up Pathways to the Bachelor's Degree for Dental Hygienists

A brief by **ADEA** and the Institute for Higher Education Policy

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Introduction

Community colleges in the United States play an important role in educating many allied health professionals. Recently, President Barack Obama highlighted the important role these institutions play in meeting the needs of the country. At the White House Summit on Community Colleges, held in October 2010, education experts and leaders met to discuss surging enrollments and development of strategies to improve retention. President Obama has set a goal of 5 million degree holders from the nation's 1,200 community colleges by 2020. Much of the focus of the summit was on beneficial public-private partnerships, which would align curriculum demands with needs of local companies and eliminate obstacles to student success and retention. One challenge facing community colleges is that the emphasis on improving transfer to four-year institutions sometimes conflicts with a focus on development of employable skills. Summit attendees hope to bring forth examples of how community colleges can successfully focus on both areas without conflict or confusion for students.

One program area where it is important to find ways to successfully emphasize both transfer options and employable skills is the allied health professions. The health professions in the United States are on the cusp of change. As the nation's health care needs increase and our health system expands, allied health professionals have a growing part to play in ensuring that all Americans have access to high quality health care. Many states have begun to recognize that allied health providers, particularly dental hygienists, nurses, and physician assistants, can take a larger and expanded role in caring for America's health. They must have the proper education and training to do this, and so access to the bachelor's degree for members of these professions is increasingly important.

This may be particularly true for dental hygiene, as entirely new oral health professional workforce models are being developed. Some of these changes require that dental hygiene education shift its focus to a pathway to bachelor's degree attainment. Doing this without sacrificing the flexibility that is a hallmark of the current allied dental education practice is a challenge. One way to expand educational opportunities is to create clear, strong pathways from the associate's degree in dental hygiene into the bachelor's degree, such as is being done now for nursing education. Making pathways and transfer of educational credits clearer will enable more students to complete their bachelor's degrees—ensuring a high level of professional skill and advancing career trajectories, raising the profile and professionalism of the dental hygiene profession, and helping to meet the health needs of the 21st century United States.

To this end, this report explores the reasons for expanding the pathways for dental hygiene education, and provides an overview of transfer and articulation policies. The report then examines these policies as they relate to dental hygiene, and compares transfer via such policies to the more common bachelor's degree completion approach. After giving some real-life examples of states that have dental hygiene articulation policies, the paper concludes with suggestions for states and programs seeking to expand their educational pathways. Though this report focuses on dental hygiene, many of the findings can be applied to other allied health professions as well.

Paths to the Bachelor's Degree

At present, individuals seeking to become dental hygienists have a range of educational options to choose from. Students can work toward a two-year or a four-year degree. They can attend public community colleges, private for-profit schools, or public or private four-year

academic institutions. If they so choose, they can later enhance their education and skills by completing a bachelor's, master's, or doctoral degree. Students can tailor their dental hygiene education to their individual circumstances, making it an attractive career choice.

Yet while so much choice is available, an associate's degree in dental hygiene is still the most prevalent entry point. Of the 301 Commission on Dental Accreditation (CODA)-accredited dental hygiene programs in 2008-09, 86% (243) granted associate's degrees. Moreover, accreditation standards for dental hygiene education leading to an entry-level position (a minimum requirement defined as two academic years) have not changed in nearly six decades, which may explain the fairly small numbers of students who directly enroll in a bachelor's degree program. However, the academic, intellectual, and technical skills required by the profession are expanding.[1] In addition, the labor market for dental hygienists has changed. As the economic returns to higher education have increased, so have the professional opportunities for people holding bachelor's or higher degrees.

One pathway to the bachelor's degree in dental hygiene exists in the form of bachelor's degree completion programs—meaning that any dental hygienist who wants to earn a bachelor's degree can already do so. According to the American Dental Hygienists' Association (ADHA) website (www.adha.org), there are 55 such programs in 32 states. Bachelor's degree completion programs appear to be ideally suited for providing access to a bachelor's degree, as they are almost always targeted at working dental hygienists, with flexible course schedules and transfer of credits (see Figure 1). Of the 55 programs, 38 have some or all coursework conducted online. The majority of degree completion programs lead to a B.S.D.H. degree.

Bachelor's degree completion programs certainly do meet a need and provide access to the bachelor's degree for some dental hygienists. But they are often quite small in enrollment and can meet only some of the increasing demand for higher degrees. They are also an ad hoc way of encouraging bachelor's degree attainment, not an organized system. Bachelor's degree completion programs are run by individual institutions, so each has its own set of requirements and can choose which credits from an associate's degree will transfer. This means that students who want to earn a bachelor's degree do not necessarily know what they will get credit for or how long it will take to earn the degree. Both might differ from program to program. This type of variation can be confusing or frustrating and can discourage some dental hygienists (especially recent associate's degree program graduates) from continuing their education.

Figure 1: **Bachelor's Degree Completion Programs**

- Targeted toward working hygienists
- Have flexible schedules
- Often can be completed online
- Have varied admissions requirements and procedures
- Evaluate transfer credits individually
- Standards differ from program to program or person to person

[1]Okwuje I, Anderson E, Hanlon L. A survey of dental hygiene program directors: Summary findings and conclusions. *J Dent Educ* 74(1): 79-87.

As discussed, bachelor's degree completion programs serve an important purpose and meet the educational needs of some dental hygienists. They do not, however, provide a comprehensive *pathway* to the bachelor's degree. And as dental hygiene practice advances, such a pathway will likely be increasingly necessary. Students who have attained an associate's degree may be deterred by the additional financial cost of attaining a bachelor's degree. This would be exacerbated if they encounter poorly defined mechanisms for moving to the higher-level degree. An educational pathway—a clear, well-defined, and easily identified series of steps to completing the bachelor's degree after attaining the associate's degree—will make it easier for more dental hygienists to earn a four-year degree. It will help remove barriers—in terms of both access and affordability—that make attainment of the bachelor's degree something that only the most persistent and determined individuals are now able to achieve.

Creating a clear pathway to a bachelor's degree in dental hygiene will improve individual upward career mobility by making it easier for dental hygienists to earn a bachelor's degree. It will improve the oral health of the country by increasing the number of qualified dental hygienists available to serve as educators and leaders. It will enhance the status of the dental hygiene profession by increasing the educational attainment of its members.

Figure 2: **Changing Scope of Dental Hygiene Practice**

- Poor access to dental care for low-income, rural, transient, limited-English proficiency, and elderly individuals
- Low enrollment of dentists in Medicaid and SCHIP
- Projected increase in the number of dentists retiring
- Need for new ways to provide accessible, affordable dental care

Expanding the Profession

The trend across the states has been to expand the scope of practice (see Figure 2) and decrease supervision requirements for dental hygienists.[2] As a result, many states now permit dental hygienists to perform many procedures without the direct supervision of dentists. Most states have increased the scope of practice for dental hygienists with the aim of improving access to oral health care for underserved populations. States are particularly concerned about the oral health of children, older adults, residents of rural areas, low-income individuals, and those lacking insurance coverage.

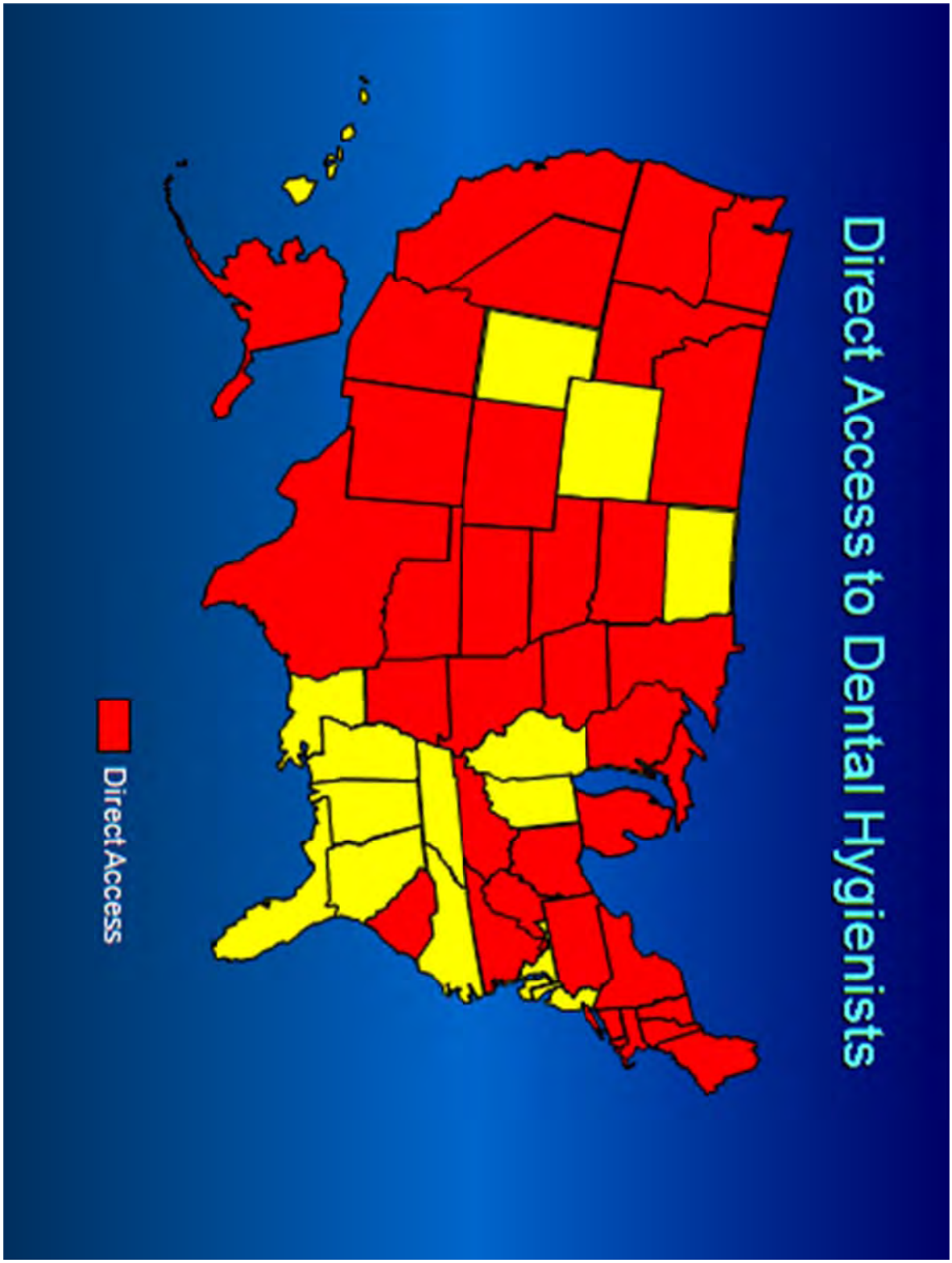
As of April 2011, 34 states permit dental hygienists direct access to patients (see Figure 3 and Appendix 2).[3] This has come mostly through the expansion of dental hygiene practice in limited public-health settings. Alaska and New Mexico permit highly skilled, advanced dental hygienists to work in collaborative practice with dentists. As many as 15 states may be considering, or have implemented or piloted, new oral health workforce models (see Figure 4 and Appendix 2). The ADHA, the American Dental Association (ADA), and the federal government (via the Indian Health Service) have all supported new forms of oral health professional workforce models, though the details of these proposed new roles vary.[4]

[2]American Dental Hygienists' Association (ADHA). Dental Hygiene Practice Act Overview: Permitted Functions and Supervision Levels by State. At www.adha.org/governmental_affairs/downloads/fiftyone.pdf. Accessed May 2011.

[3]ADHA. Direct Access States. At www.adha.org/governmental_affairs/downloads/direct_access.pdf. Accessed April 2011.

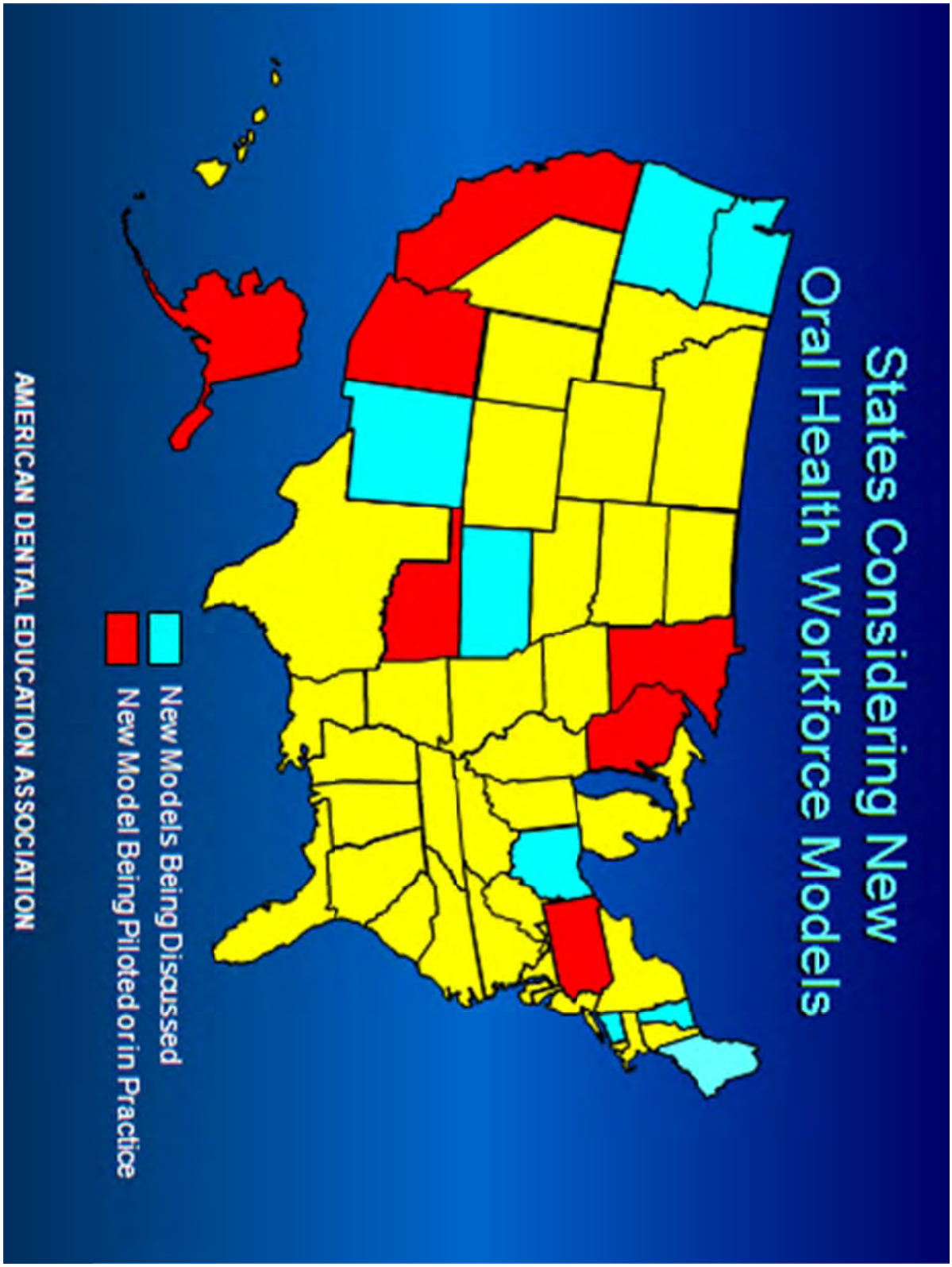
[4]For a detailed explanation of various proposed advanced dental hygiene practice models, see McKinnon M, Luke G, Bresch J, Moss M, Valachovic R. Emerging allied dental workforce models: Considerations for academic dental institutions. *J Dent Educ* 71(11): 1476-1491. At www.jdentaled.org/cgi/content/abstract/71/11/1476.

Figure 3: **Direct Access to Dental Hygienists***



*See Appendix 2 for explanation.

Figure 4: **States Considering New Oral Health Workforce Models***



*See Appendix 2 for explanation.

Figure 5: **Common Terms and Definitions**

- ***Transfer****:* The process by which students move from one college to another, ideally carrying previously earned credit with them
- ***Articulation****:* The process of aligning programs at two colleges so that students can transfer easily
- ***Sending institution****:* The college at which a student earned the credit s/he is trying to transfer
- ***Receiving institution****:* The college to which a student is transferring, and at which s/he hopes to be granted credit for classes already taken
- ***Articulation agreement****:* Formal written agreement defining which courses will be accepted toward a degree at a receiving institution
- ***Common course numbering****:* Statewide system of course numbers ensuring that courses and course content are the same across institutions, thereby allowing for easier transfer
- ***Common core****:* A set of general education courses that is common across every college in the state, so that students who complete general education courses in one college have completed the requirements for all colleges
- ***Block transfer****:* A series of courses that transfer together as a group, so that students who have completed the block at one college have completed the requirements for that block (such as general education or a specific major) at another college, even if the course requirements are not identical
- ***Pathway***: A clear sequence of courses leading to a degree

With the passage of new health care legislation in 2010, the federal government has approved as many as 15 demonstration models to explore new oral health professional workforce models. Included among them is advanced practice for dental hygienists.

As the advanced practice for dental hygiene emerges, it is imperative that the educational qualifications of dental hygienists are sufficient to enable them to safely provide the scope of services and care encompassed in these new expanded roles and for them to be educationally prepared to attain higher degrees. Specifically, for any masters level advanced practitioner, an initial requirement typically would be the bachelors degree.

The current questions, therefore, are how best to expand access to the bachelor's degree in dental hygiene, and what is needed to make the steps toward earning this degree clear to all.

What Are Transfer and Articulation Policies?

Creating policies that promote transfer from an associate's degree in dental hygiene to the bachelor's degree in dental hygiene can make it easier for dental hygienists to earn advanced degrees. Unlike bachelor's degree completion programs, which are specific to individual colleges, transfer and articulation policies happen at the state level. This means that they apply to every single public college in a given state (and sometimes even to private colleges). State policies help create consistent, clear paths between different colleges and degree programs, so that students can move from one to another easily and efficiently.

Transfer and articulation agreements can be accomplished via state policies to guarantee that students' credits transfer and programs are completed in a timely manner.[5] Figure 5

[5]It should be noted that articulation agreements can be created at the program level as well. In these cases, individual programs work together to ensure that all credits earned as part of the

provides some definitions that are useful in this discussion. But essentially, policies are laws, rules, or regulations set at the state level (either by the state legislature or by the state office of higher education) and applying to all public colleges in a state. These rules specify the types of courses that automatically transfer from college to college. This means that students know, before they even apply to a college, which of the classes they have already taken will count toward a new degree.

According to the Education Commission of the States (www.ecs.org), at least 43 states have some type of transfer or articulation policy and other states are in the process of developing them. There are many reasons for states to invest in these types of policies. Just as dental hygiene is seeking to increase the educational level of its members, states want to increase the overall educational attainment of their residents. Just as individuals with a bachelor's degree earn more money, states with well-educated residents have more robust economies. It therefore makes sense for states to develop policies that help people easily earn four-year degrees. While many students who begin their college education in a community college want to transfer and earn a four-year degree, most will not do so. According to the U.S. Department of Education, only about one-half of students who start in a community college with the goal of earning a bachelor's degree will actually attain a four-year credential. There are many reasons for this, and not all of them have to do with transfer policies. But the fact that students often receive poor or even incorrect guidance around which classes to take if they want to transfer (resulting in wasted time, money, and effort), added to confusing transfer rules and inconsistencies across institutions, most likely plays a large part.[6]

Over 60% of students—regardless of whether they start at a two-year or a four-year institution—will attend more than one college on their way to earning degrees.[7] So it is important to make sure that the credits they take count toward a degree at the institution that is their final destination. State transfer and articulation policies do this. These policies outline which courses will transfer and which will not, helping students plan their curricula. They demonstrate for colleges that students have learned what they need to know, even if they took a course on a different campus. They can "entice" students to transfer by rewarding them for doing so, perhaps by giving them advanced standing for completing a certain set of courses.

The result of good transfer policies should be an increase in the number of students who successfully move from institution to institution and ultimately earn four-year degrees. If done well, students should have less confusion and frustration when it comes time to transfer, and institutions should be more willing to accept transfer students. Students and their families should save money and time because classes that do not count toward a bachelor's degree are

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associate's degree transfer to the bachelor's degree, as long as students transfer *to the specific colleges involved in the agreement.* Such agreements, however, are not an efficient way to create pathways to the bachelor's degree; like completion programs, they are ad hoc, not always clear to students and, most importantly, created by program and college personnel. A change in leadership can void such agreements, as can a change in institutional priorities. As such, we focus our discussion on state articulation policies, which in general are more streamlined, transparent, and stable than institutional articulation agreements.

[6]Long BT, Kurlander M. Do community colleges provide a viable pathway into a baccalaureate degree? *Educational Policy Analysis,* 3 (1): 30-53; Rosenbaum J, Deil-Amen R, Person A. *After Admission: From College Access to College Success.* New York: Russell Sage Foundation. 2006.

[7]National Center for Education Statistics http://nces.ed.gov/pubs2005/2005157.pdf. Accessed May 17, 2011.

Table 1: **Moving from the Associate's to the Bachelor's Degree**

Bachelor's degree completion programs	Transfer and articulation policies
• The "standard" way to increase a students' credentials • Sponsored by individual institutions • Often online and part-time; targeted toward working dental hygienists • Requirements vary from program to program • Individual bachelor's degree completion programs may work with individual two-year programs to develop articulation agreements that guarantee admissions or transfer of credits • Can be burdensome and inefficient because every program is different • Not a clear pipeline for newer dental hygienists; may also have limited capacity to grow in enrollment	• Build upon state efforts to increase overall bachelor's degree attainment • Not usually specific to dental hygiene, but part of a larger effort to ease transfer for everyone • May include various components such as common course numbering, a general education common core, or a specified occupational transfer pathway • Create consistency for transfers at all public institutions in the state • Clearly defines which courses and/or degrees will transfer • Codified in state rule or legislation • More efficient and user-friendly than institution-specific agreements

avoided. A well-articulated transfer policy should ultimately lead to a better-educated workforce.

What Do Transfer and Articulation Policies Look Like?

Transfer and articulation policies vary by state. Some states have a simple listing of institution-by-institution articulation agreements, for example. Other states have state-sponsored websites that list all of the courses that transfer from one institution to another. Students attending one college can enter their courses into the website and receive information about whether the credits will transfer to another college. Other states' systems are more complex. There may be a statewide course numbering system, so that every course with the same title and number contains the same content and automatically transfers. A similar system without standard numbers may exist—one that looks across syllabi and creates course equivalencies, outlining which courses at two-year colleges are considered the same as courses at four-year colleges. And some states go even farther, creating entire "blocks" of courses that transfer together, giving students automatic junior status or exemption from additional general education requirements.

One thing important to note is that most of these transfer systems focus on liberal arts degrees. Most block transfers, for example, are for majors within the liberal arts, not technical or professional fields. Some states do include specific career areas in their transfer systems, but as we will see in the next section, this is not common.

Barriers to Overcome

Although most states have some sort of statewide transfer policy, there remain a number of barriers to creating and implementing the policies, particularly more comprehensive approaches such as common course numbering or block transfers (see Table 1). The most basic are logistical issues, such as getting all institutions in the state on the same calendar and with the same number of hours of seat time. In many states, it is not clear which higher education sector is or should be in charge of the policy creation

process.[8] Once a coordinating body or intersegmental leader is identified, finding time for institutional representatives to meet in order to discuss transfer policies can be challenging.

Other barriers come from a long higher-education tradition of institutional control around issues of curriculum.[9] A college wants to determine what educational preparation qualifies for a degree from the institution, and therefore may resist any state attempt to control content, such as a standardized general education core. Faculty want to control what is taught in their courses, and so may resist attempts to standardize course content. Four-year colleges are often skeptical of the quality and rigor of two-year colleges, and thus resist being required to accept community college coursework for transfer without their own internal reviews.

A final barrier to creating transfer systems lies in the long-standing split between liberal arts and professional coursework. As already noted, many transfer systems focus solely on general education coursework and liberal arts majors, omitting professional coursework and degrees. Thus, associate's degrees in applied fields (such as the A.A.S.) are not included in transfer policies. Moreover, many states have—or had at one time—separate community colleges for transfer degrees and technical colleges for professional degrees. Technical colleges are almost always excluded from statewide transfer systems.

Historically, professional and technical degrees were intended to provide a direct path to employment, not a path to the bachelor's degree. Although many technical fields today do require a four-year degree, applied associate's degrees are often considered "terminal" degrees not counting toward transfer. As a result, they usually include fewer general education courses, and students earning these degrees do not complete enough of these credits to qualify for block transfer or guaranteed junior standing. Also, the specific nature of professional coursework means that many states do not have the time or resources to determine course equivalencies in each field. As a result, the split between technical and liberal arts courses of study remains intact within most state transfer systems.

Where Does Dental Hygiene Fit into This Picture?

States want to encourage bachelor's degree attainment for their residents, and have created statewide transfer policies to encourage this. But professional fields are frequently excluded from such policies. Where does this leave dental hygienists who seek to transfer from an associate's degree program into a bachelor's degree program? To ease the transfer of associate's degree-holding dental hygienists into bachelor's degree programs, dental hygiene should be included in state transfer policies. To see if this is the case, an analysis of the 50 states' transfer and articulation policies was undertaken. States are considered to have dental hygiene transfer policies or agreements if:

- they have agreements or transfer rules explicitly addressing dental hygiene programs
- they include dental hygiene programs or courses in the state's common course numbering system
- they include dental hygiene in statewide common general-education transfer rules
- they have a college-specific transfer agreement that effectively serves the entire state because of its easy access and status as the sole

[8] Moore C, Shulock N, Jensen C. *Creating a student-centered transfer process in California: Lessons from other states.* Sacramento, CA: Institute for Higher Education Leadership and Policy. 2009.
[9] Ibid.

bachelor's degree program in the state

It is important to remember that statewide policies only address dental hygiene programs in public institutions; students who earn their associate's degree from or want to transfer to a private college will not necessarily be covered. Policies are also only relevant in states where there are both associate's and bachelor's dental hygiene degree programs. If a student transfers from a college in one state to a program in a different state, statewide policies do not apply, even if both states have them.

Only eight states have any sort of transfer or articulation policy for dental hygiene. In 12 states and Washington, DC, there is only one dental hygiene degree program offered through a public institution, so transfer policies are not applicable. Thirty-one states do not have dental hygiene transfer policies, despite the presence of public two- and four-year programs in the state.

Why are state transfer policies for dental hygiene so unusual?
First, there may be a lack of demand. In a survey of dental hygiene program directors, 56% indicated that "no demand" was the most frequent reason for not pursuing articulation agreements.[1] Interviews with a sample of dental hygiene educators indicate that many dental hygienists and dental hygiene educators feel that bachelor's degree completion programs are sufficient. This leads to a lack of focus on creating transfer policies—a situation that may be fine for now but is likely to become problematic as demand for health care workers with bachelor's degrees increases.

A second reason comes from state priorities. Most state transfer systems are rooted in a belief that transfer is for liberal arts degrees, not professional or occupational programs. As described earlier, states usually focus their transfer efforts on traditional liberal arts majors and general education courses, leaving out technical fields like dental hygiene (and, it should be noted, most other allied health fields).

Third, the fact that approximately 55% of two-year dental hygiene programs grant associate's in applied science (A.A.S.) degrees, rather than associate's in science (A.S.) degrees, is a major impediment. A.S. degrees are usually considered transfer-oriented degrees with a strong general-education core curriculum. Many states allow for block transfer of A.S. degrees or their general education credits, regardless of the student's major. In these states, dental hygiene students can easily transfer to a bachelor's degree program knowing that all of their general education coursework is complete and they may even receive automatic upper-division (i.e., junior) standing.

But in these same states, the A.A.S. degree is excluded from these policies and students in A.A.S. programs do **not** receive advanced standing. Though some A.A.S. credits may transfer on a course-by-course basis, policies do not cover the majority of credits earned in an A.A.S. in dental hygiene program. In short, in almost any state in which the A.A.S. degree is the primary two-year program for dental hygienists, dental hygiene is excluded from statewide transfer policies by definition.

Finally, the lack of bachelor's degree programs in public institutions in some states makes the demand for institutional transfer irrelevant. If there is nowhere for students to transfer to, there is no reason to create an in-state dental hygiene degree program transfer system.

It should be noted that, in its lack of inclusion in statewide transfer policies, dental hygiene is not alone. Most states exclude the allied health professions from their state policies, for the reasons cited above. Nursing is an exception, but many other allied health professions (such as

respiratory therapy, radiological technology, physician assistants, and exercise science) are not usually included in statewide transfer policies. In fact, they are excluded even more frequently than dental hygiene, because many of these occupations do not have well-established bachelor's degree programs to which students might transfer. Some states have created a bachelor's in allied health or health science degree to improve bachelor's degree attainment for allied health professionals, but even this approach is quite rare. In general, the allied health fields are seen as outside of the traditional transfer system.

What do Statewide Dental Hygiene Transfer Policies Look Like?

Some states have developed ways to smooth dental hygienists' movement into the bachelor's degree. As discussed earlier, state transfer policies can vary widely, depending on state needs and priorities. Dental hygiene fits into these policies in various ways. Below are examples from three states, showing how a range of policies can work to ease transfer between associate's and bachelor's degrees in dental hygiene.

Kentucky: Statewide articulation into a single institution

Kentucky has a state general-education core curriculum as well as policies that allow students to transfer general education courses as a block. Within the state, there are three associate's degree programs in dental hygiene—all granting the A.A.S. There are also two bachelor's degree programs (one of which is a bachelor's degree completion program). After several years of discussions and negotiations, Kentucky created a statewide policy for dental hygiene transfer in 2010. Using the longstanding bachelor's degree completion program at Western Kentucky University (WKU) as a model, the state created a guaranteed block transfer for students completing the A.A.S. degree at any Kentucky Community and Technical College System (KCTCS) institution. A.A.S. recipients who have a 2.5 grade point average and are accepted into WKU's bachelor of dental hygiene program are guaranteed:

- A block transfer of 75 credits—42 credits of dental hygiene coursework and 33 credits of general education 16 additional credits of upper division coursework

Students must complete additional general education coursework to meet WKU requirements, but these may be completed at either the university or a community college. Students must also complete 26 additional credits of upper-division dental hygiene coursework. Students who have graduated from a KCTCS institution do not have to have their credits evaluated individually for transfer; they receive credit automatically.

The goal of this agreement is to streamline bachelor's degree completion within the state. Though the agreement applies to only one of the two bachelor's degree programs, it allows all A.A.S. recipients to have a clear pathway to the bachelor's degree. Though the statewide agreement is new, it is assumed that transfer students will complete their four-year degree in a similar timeframe as students who previously participated in WKU's bachelor's degree completion program (personal interview). This varies somewhat, but is usually around two years.

Maryland: General education block transfer

Maryland state policy specifies that the A.A. and A.S. degrees are intended for transfer to a bachelor's degree program, and the A.A.S. degree is for immediate employment. Community college dental hygiene programs in Maryland offer the A.A.S degree. Despite this, Maryland state policy allows for a simplified transfer process for associates' degree holders. The University System of Maryland maintains an

articulation system (ARTSYS) database, indicating which Maryland community college courses are transferable to the state university system and, if they are, the course number and general education area to which they apply. The general education and basic science courses offered through Maryland dental hygiene A.A.S. programs are listed as transferable in ARTSYS.

The University of Maryland Baltimore College of Dental Surgery (UMB) offers a bachelor's degree completion program, which accepts up to 90 transfer credits, including up to 45 credits of dental hygiene-specific coursework completed at a U.S. community college or university dental hygiene program accredited by the Commission on Dental Accreditation (CODA).

Because Maryland dental hygiene A.A.S. course requirements are listed in ARTSYS, transfers into the bachelor's degree completion program need not retake their general education courses. The work they completed as part of their Maryland A.A.S. degree will transfer into the bachelor of science degree completion dental hygiene program at the University of Maryland-Baltimore as long as the credit hours and grade achieved meet the educational standards of the receiving institution. A grade of C or higher is a passing grade acceptable for transfer to UMB's degree completion program. While on the surface this is no different from any other bachelor's degree completion program, it is important to note that these transfer guidelines are rooted in the state's policy of listing basic science courses as part of the ARTSYS system, meaning that they exist as part of a *system* of eased transfer, rather than an institutional decision.

Florida: Bachelor of applied science and a statewide course numbering system

The state of Florida has a well-developed transfer and articulation policy. The A.A. is considered the state transfer degree, and recipients are guaranteed acceptance to a four-year institution and transfer of 60 credits. The state also has a statewide course numbering system and has developed a number of transfer pathways and degrees for professional fields of study. These include the bachelor of applied science (B.A.S.) degree, which are occupation-specific bachelor's degrees designed to provide degree completion options for individuals holding A.S. degrees or the equivalent. B.A.S. degrees have the same general education requirements as other bachelor's degrees in the state, but are structured to allow more flexibility for professional degree holders.

Florida has both A.A.S. and A.S. programs in dental hygiene. Many dental hygiene courses are included in the statewide course numbering system, and thus easily transfer from school to school. There is only one four-year program in the state, a B.A.S. at St. Petersburg College. Because of the state's strong transfer system, A.S. degree holders seeking a bachelor's degree can easily transfer their credits into St. Petersburg College's program. Students earn 38 transfer credits automatically upon entry to the program. They must then take 30 credits of upper-level dental hygiene courses; 10 additional credits are earned by credentials and the active dental hygienist license. Students must also complete 36 credits of general education.

Developing Strong Bachelor's Degree Completion and Transfer Systems: Six Recommendations for Institutions, Associations, and States

There is immense variation in state policies and transfer contexts. No one approach to moving dental hygienists, or other allied health professionals, to the bachelor's degree will fit all states.

There are, however, a number of things that programs, institutions, associations, and states can do to help create clear, easily accessible pathways to the bachelor's

degree for large numbers of associate's-degree-holding dental hygienists.

As we have seen, creating policies at the state level appears to be the most efficient way to encourage such pathways; institution-to-institution articulation is less useful. Therefore, we focus our recommendations on policy solutions. In many cases, however, leadership from program-level staff (including program directors) can have an outsized influence in moving policy forward. Small changes in individual programs can have a big effect on state-level perceptions, initiatives, and decisions.

1. *Continue to allow bachelor's degree completion work to be done online or on part-time, nontraditional, or accelerated schedules*

Many dental hygienists want or need to work once they have earned their associate's degree. A big advantage of traditional bachelor's degree completion programs is their focus on making the bachelor's degree accessible through part-time study, online courses, and accelerated schedules.
Program directors should continue to implement such approaches—not only in bachelor's degree completion programs but in "regular" bachelor's degree programs as well. This will ensure that all dental hygienists can take advantage of educational opportunities even after they enter the workforce.

2. *Add public B.S. degree programs, particularly in states that don't have them*

Ideally, dental hygiene will use existing state transfer policies to encourage bachelor's degree attainment. However, this only works in states that have public bachelor's degree programs. Without such programs, state policies are irrelevant. Thus, one strategy for increasing access to the bachelor's degree is to work with public colleges and universities to expand the number of states with a bachelor's degree in dental hygiene program. This ensures that there is "room at the inn" for all those who seek to obtain a four-year degree. Such an approach also has the added advantage of increasing the overall capacity of the dental hygiene education system, thereby ensuring that a large pipeline of dental hygienists is available to care for the nation's population. Development of a public bachelor's degree program should include an articulation strategy as well.

3. *Move programs from the A.A.S. to the A.S. degree*

A key barrier preventing dental hygiene from taking advantage of state policies is the granting of the A.A.S. degree by many states and institutions. Most states consider the A.A.S. a terminal degree and exclude it from transfer systems. Though there are strong historical reasons for offering the A.A.S., doing so limits the educational growth of dental hygienists holding this degree by preventing them from easily transferring into a bachelor's degree program. Shifting toward the A.S. would automatically increase the ease with which graduates enter four-year programs. It would also send a clear message that there is an educational pathway for dental hygienists to follow—that the associate's degree is the beginning of an individual's educational and professional journey, not the end, and that a bachelor's degree is important for dental hygiene practice in today's society.

Program directors can take the lead here by pushing their institutions to consider changing their degree offerings and educating stakeholders as to the importance of this shift.

4. *Include general education core requirements in dental hygiene programs*

Including general education core requirements, which vary by institution and by state, in the associate's degree is

another approach to ensure ease of transfer. While many of these courses are often already part of the dental hygiene curriculum (English, psychology, social and biological sciences), inclusion of other core requirements could facilitate transfer. In states with common course numbering systems or general education block transfer policies, these credits are guaranteed to count towards a bachelor's degree.

By selecting new courses that will transfer, or replacing non-transferable with transferable courses, students will ensure they are not taking "dead end" courses while they are in the associate's degree track. In addition, by including the general education core in the associate's degree, students will automatically be exempt from many general education requirements once they transfer to a four-year program. In places where it is not possible to shift to the A.S. degree entirely, adding general education requirements to the A.A.S. may serve a similar purpose by increasing the number of transferable credits that A.A.S. graduates earn.

There are likely financial benefits to the student who takes as many transferable credits as possible while in the associate's program, since classes taken at a community college are typically less expensive than those taken at a four-year institution. However, the already robust nature of many dental hygiene curricula may preclude inclusion of additional general education courses in the associate's program. Again, as the on-the-ground leaders, dental hygiene program directors have a strong role in determining the best strategies to link general education core requirements with dental hygiene-specific courses and non-dental hygiene-specific courses in an associate's degree program.

5. *Accept the A.S. in dental hygiene as equivalent to the first two years of a bachelor's degree in dental hygiene by creating block transfer agreements*

By making program requirements identical to the first two years of a bachelor's degree, A.S. programs can ensure that their students will easily transition into a four-year program without losing time or credits. Four-year programs can help by guaranteeing block transfer or junior standing to those holding A.S. degrees. In short, programs can work together to ensure that everyone enters the junior year of a bachelor of science in dental hygiene (B.S.D.H.) program with the same experiences and credentials, regardless of whether they completed the first two years at a two-year or a four-year institution.

6. *Work with policymakers to include professional and occupational fields in transfer agreements or state-sponsored pathways*

Creating state policies to support associate's degree dental hygienists seeking bachelor's degrees is a critical component of a strong transfer system. Although many states have transfer policies, few include dental hygiene or other professional fields. A key area for future work is to increase the states' focus on transfer for everyone, not just liberal arts students. By demonstrating to policymakers that dental hygiene is a rapidly growing field with a strong need for bachelor's-degree-educated professionals, programs can encourage the long-term growth of a clear, consistent educational pathway.

Appendix 1: Methodology

The research discussed in this report involved conducting a scan of major policy websites to identify literature describing state transfer policies, their purpose and development, and barriers to their implementation. Organizations used in this search included Education Commission of the States (ECS), The National Articulation and Transfer Network, and the Western Interstate Commission on Higher Education (WICHE). At each site, at least one (usually more) documents were identified, read, and

analyzed, in addition to the information posted on the websites. At the same time, background research on allied health education (relying on information from the American Dental Education Association, additional research at the ADHA and ADA websites, and a literature search on nursing education) was conducted.

The focal point of the research was a state scan (see Appendix 3: State-by-State Policy Scan) examining the transfer policies related to dental hygiene for each state. To this end, public dental hygiene programs granting degrees (A.A., A.A.S., B.S., etc.) in each state were identified using the website of the state's boards of dental hygiene/dentistry, higher education, or both. The requirements for becoming an RDH were also identified using the state's dental board website. Then, a series of web searches to identify transfer policies in the states was conducted. The American Association of Collegiate Registrars and Admissions Officers and WICHE's State Policy Inventory Database Online database was used to identify the state offices responsible for transfer policies and procedures. In many cases, state transfer guides and policy documents were reviewed. Also, in states with no evidence of transfer policies, multiple state websites were visited to ascertain whether a transfer policy was truly absent.

After identifying each state's policies, the relevance of those policies to dental hygiene was ascertained. Specifically, the policies were examined for the following:

- references to dental hygiene
- inclusion of A.A.S. degrees, if offered in the state
- inclusion in state course catalogs (if available) of dental hygiene courses, prerequisites, or both
- inclusion of dental hygiene in professional or major transfer blocks

In most states, the websites of bachelor's degree completion programs were reviewed to determine if they served as a de facto statewide transfer process, and to understand the relationship between state transfer policies and traditional B.S. degree completion programs. Special attention was paid to whether institutional agreements were present in the state.

All information was documented on a five-state, color-coded transfer matrix. The matrix highlights which states had dental hygiene policies, which lacked policies, and which had no B.S. degree programs and therefore no need for such policies.

To confirm the research findings, individuals in six states were contacted via email and phone. To ensure the accuracy of the three states highlighted in the final report, individuals were contacted via email so that their state summary could be approved.

In addition to dental hygiene, attention to transfer policies in other allied health professions was examined. The identification of transfer pathways for such professions was determined using the professional association websites for various occupations (nursing, physical therapy, respiratory therapy, medical assisting, etc.), as well as the association newsletter for the American Association of Colleges of Nursing. As noted in the report, there were few such policies. Physical therapy, for example, clearly stated that their two-year degrees are not intended to articulate into four-year degrees. Lastly, in an effort to triangulate the policy environment, transfer websites of every state with professional-oriented transfer policies were scanned for evidence that these policies included allied health. With the exception of nursing, they rarely did so.

Figure 3: Direct Access to Dental Hygienists

Direct Access: ***ADEA consider this term to mean that a dental hygienist may perform dental hygiene services without the presence of a dentist or may maintain a provider-patient relationship with the patient either independently or working with the cooperation of a dentist. Most often direct access occurs through permits under which dental hygienists may provide services in settings where access is limited or in institutions that provide care to underserved populations. Generally these type of permits require additional training and a higher level of clinical experience.***

Alaska—Under a "***collaborative agreement***" with a dentist, a hygienist may practice "without the presence of the licensed dentist" in "a setting other than the usual place of practice" of the dentist and "without the dentist's diagnosis and treatment plan" unless otherwise specified in the collaborative agreement. (Sec. 08.32.115)

Arizona—A dental hygienist "***employed by or working under contract or as a volunteer" for a public health agency, institution, or school authority*** may "screen patients and apply topical fluoride" before an examination and "without entering into an affiliated practice relationship" with a dentist. Dental hygienists with an affiliated practice agreement can assess a patient but must "direct the patient to the affiliated dentist for treatment or planning that is outside" his or her scope of practice. Patients must be seen by a dentist within 12 months of the hygienist's treatment. (Sec. 32-1289)

Arkansas—Under a "***collaborative agreement***" a dental hygienist "may provide prophylaxis, fluoride treatments, sealants, dental hygiene instruction, assessment" and "if delegated by the consulting dentist, other services" to children, senior citizens, and persons with developmental disabilities "in a public setting without the supervision and presence of a dentist and without prior examination of the persons by a dentist." (Sec. 17.82.701)

California—A "***registered dental hygienist in alternative practice***" (RDHAP) may perform preventive and therapeutic functions in "residences of homebound individuals, schools, residential facilities and other institutions, and in dental health professional shortage areas." The RDHAP does not need "written verification that the patient has been examined by a dentist or physician and surgeon." RDHAPs can operate as "an employee of a dentist or another RDHAP, as an independent contractor, as a sole proprietor of an alternative dental hygiene practice, or as an employee of a primary care clinic or specialty clinic…and a clinic owned or operated by a public hospital or health system." (Sec. 1775)

Colorado—Allows for the "***unsupervised***" practice of dental hygiene that can be performed "by licensed dental hygienists without the supervision of a dentist." In the state, a dental hygienist "may be the proprietor of a place where supervised or unsupervised dental hygiene is performed and may purchase, own, or lease equipment necessary to perform supervised or unsupervised dental hygiene services." The dental hygienists must state in writing with the patient's signature that "any diagnosis or assessment is for the purpose of determining necessary dental hygiene services…" (Sec. 12-35-124)

Connecticut—Allows for ***the practice of dental hygiene "in public health facilities***" under "general supervision" of a dentist. The "dental hygiene procedures to be performed" must be authorized by and "with the knowledge of" the supervising dentist "whether or not the dentist is on the premises when such procedures are being performed." Requires the dental hygienist to

"refer for treatment any patient with needs outside" his or her scope of practice and refer patients "for treatment to dentists." This implies that a dentist does not have to examine a patient beforehand. (Chapter 379a, Sec. 20-126l)

Idaho—The states "***extended access oral health care program***" allows dental hygiene services to be provided under "general supervision" to patients in public health or nonprofit settings that "provide free or reduced fee" services to "persons who, due to age, infirmity, indigence, or disability, are unable to receive regular dental and dental hygiene treatment in a private office." The supervisory dentist "is employed or retained by a program or is a volunteer," determines "the treatment to be provided," and authorizes a dental hygienist with an extended access permit to provide the "prescribed treatment." (Idaho Statutes 54.903.9)

Iowa—A dental hygienist in a ***public health setting*** may provide hygiene services "without the patient first being examined" by a dentist as long as the dentist "authorizes and delegates" these services. "The dentist is not required to provide future dental treatment to patients served by public health supervision." (I.A.C. 650-10.5[153])

Kansas—A dental hygienist with an Extended Care Permit (ECP) is sponsored by a dentist licensed in the state of Kansas, including a signed agreement stating that the dentist shall monitor the dental hygienist's activities under general supervision (not required to be on the premises). An ECP hygienist may provide an assessment and dental hygiene services for specified populations and in designated locations. The dental hygienist advises the patient and legal guardian that the services are preventive in nature and do not constitute a comprehensive dental diagnosis and care. The ECP hygienist provides a copy of the findings and the report of treatment to the sponsoring dentist. The sponsoring dentist is not required to examine or provide dental services to any patient that the ECP provider has treated (*not stated in the statutes, but implied through exclusion*). (Sec. 65-1456, f-g)

Kentucky—A ***volunteer dental hygienist*** may provide dental hygiene services including the application of fluoride and sealants "without the supervision of a dentist." A dental hygienist can provide dental hygiene services "for not more than 15 consecutive full business days" to a patient "when the supervising dentist is not physically present." The dental hygienist may "not examine or provide dental health services to a patient who has not been examined by the supervising dentist within the previous seven months." "The supervising dentist is required to provide a written order for treatment in the patient's file." (Sec. 313.040)

Maine—An "***independent practice dental hygienist***" may practice "without supervision by a dentist" certain procedures, "may be the proprietor of a place where independent dental hygiene is performed," and "may purchase, own, or lease equipment necessary for the performance of independent practice dental hygiene." Such hygienists must obtain "written acknowledgement" that he orshe is "not a dentist and that the services to be rendered do not constitute restorative care or treatment." (Title 32, Chapter 16 Section 1094-I)

Massachusetts—A "***public health dental hygienist***" may perform any procedure or service that is within his orher scope of practice in a public health setting "without the supervision or direction of a dentist." Any procedure that "has been authorized and adopted by the [state dental] board as a delegable procedure for dental hygienists in private practice under general supervision" may be performed without supervision in a public health setting through a "collaborative agreement with a local or state government agency, institution, or with a licensed

dentist" who will provide the "appropriate level of communication and consultation with the dental hygienist to ensure patient health and safety." Public Health Hygienists must "make a written referral to a dentist and an assessment of further dental needs," and "provide a consent form signed by the patient or legal guardian" that "explains that the services are not a substitute for a dental examination by a dentist" and informs the patient to "obtain a dental examination within 90 days." (Chapter 152 Sec. 51)

Michigan—Allows a ***dental hygienist to perform "predetermined procedures and drug protocols***" that are provided by a licensed dentist in a program "for underserved populations" if "conducted by a local, state, or federal grantee health agency for patients not assigned to a dentist." Under the program, the licensed dentist must be available "on a regularly scheduled basis to review the practice of the supervised individual, to provide consultation to the supervised individual, to review records, and to further the education of the supervised individual in the performance of the individual's functions." (Sec. 333.16625)

Minnesota—***A dental hygienist "employed by a health care facility, program, or nonprofit organization***" (serving the elderly, disabled, or juveniles) or in a local, state, or federal public health facility can provide dental hygiene services "without the patient first being examined" by a dentist through "a collaborative agreement" with a dentist. The agreement must designate "authorization for services provided by the dental hygienist" and be signed and reviewed annually by the dentist and dental hygienist. A dental hygienist must provide a patient with "a statement advising the patient that the dental hygiene services provided are not a substitute for a dental examination." The collaborating dentist "authorizes and accepts responsibility for the services performed by the dental hygienist." The services may be performed "without the presence" of a dentist and may be performed "at a location other than the usual place of practice of the dentist or dental hygienist, and without the dentist's diagnosis and treatment plan, unless specified in the collaborative agreement." (150A.10 Subd. 1)

Missouri—A dental hygienist who is "***practicing in a public health setting*** may provide fluoride treatments, teeth cleaning, and sealants, if appropriate, to children who are eligible for medical assistance…without the supervision of a dentist." (Chap. 332 Sec. 332.311.2)

Montana—A dental hygienist practicing under a "***limited access permit***" may provide limited dental hygiene preventive services "without the prior authorization or presence of a licensed dentist" in a public health facility. A hygienist operating under such a permit must refer "any patient needing treatment outside the scope of practice" to a dentist. The provision of care under the permit is "limited to patients or residents of facilities or programs who, due to age, infirmity, disability, or financial constraints, are unable to receive regular dental care." (MCA Sec. 37-4-405)

Nebraska—A dental hygienist "***in the conduct of public health-related services*** in a public health setting or in a health care or related facility" when "authorized by and under the general supervision" of a dentist who is responsible for "directing of the authorized activities," can provide dental hygiene services without "the physical presence of" a dentist. (Sec. 38-1130)

New Hampshire—A dental hygienist under "***public health supervision***" can provide services "which are to be carried out by a dental hygienist…practicing in a school, hospital, or institution," or "providing care to a homebound person…without the dentist having to be present." The dentist must review the records once in a 12-month period. (Sec. 302.02)

New Mexico—The "***collaborative practice of dental hygiene***" allows a dental

hygienist to enter into "a cooperative working relationship with a consulting dentist but without general supervision." An "acting consulting dentist" is the patient's dentist of record "in collaboration and consultation" with a dental hygienist. Dental hygienists in collaborative practice treat patients using "standard collaborative practice protocols." The consulting dentist must be "within a reasonable referral distance" from the collaborative dental hygiene practice. The dentist must provide "verbal or written prescriptions" for procedures "requiring a diagnosis." The dentist must also provide written order when it "is appropriate to provide exception to the standardized protocols." Each patient must be referred for a dental examination every 12 months. Collaborative practice dental hygienists may own and manage a dental hygiene practice or enter into a contractual arrangement anywhere in the state. (Sec. 16.5.17.7 and Sec. 16.5.17.9-14)

Nevada—A dental hygienist with special endorsement as a "***public health dental hygiene***" can perform services at a health facility, a school, or other place approved by the [Nevada State Dental] board "without supervision" and "without authorization" from a dentist using a board-approved "treatment protocol." Patients must be referred to a dentist for follow-up care, diagnostic services, and other services outside the dental hygienist's scope of practice. The dental hygienist must have "authorization" from the dentist of the patient on whom the services are to be performed. A patient must have been examined by a dentist within 18 months of when "services are to be performed." Dental hygienist must "refer the patient to the authorizing dentist for follow-up care or any necessary additional procedures." (NRS 631.210 and 632.287)

New York—Under "***general supervision***" the "supervising dentist is available for consultation, diagnosis, and evaluation, and has authorized the dental hygienist to perform the services and exercises that degree of supervision appropriate to the circumstances." (Sec. 69.1)

Ohio—Under the "***Oral Health Access Supervision Program***" a dental hygienist must "comply with written protocols" and "standing orders" established by an authorizing dentist in a variety of public and underserved settings. Under the arrangement, "the patient's medical and dental history" must be "made available to the authorizing dentist" who "reviews and evaluates the history and determines that the patient may safely receive dental hygiene services." Services under the permit must be provided within 30 days of the dentist's review of the patient's medical and dental records. Following an examination, the hygienist must "direct the patient to the authorizing dentist for a clinical evaluation, schedule, or cause to be scheduled an appointment with the authorizing dentist." If the patient's medical condition changes "the authorizing dentist may complete the subsequent review and evaluation of the patient's medical and dental history by telephone." (ORC Chap. 4715.36)

Oklahoma—A dental hygienist under "***general supervision***" can perform "advanced procedures" on a "patient of record" at the level of supervision determined by the authorizing dentist. General supervision is limited to "a maximum of thirteen (13) months following an examination by the supervisory dentist of the patient of record." In treatment centers, "a dentist may authorize procedures to be performed by dental hygienist without requiring the thirteen month maximum if the authorization to perform the procedures is in writing and signed by the dentist" and "the procedures are performed during an initial visit to a treatment facility." However, the person in the treatment center must be examined by a dentist before he or she can receive further treatment from a hygienist. (Sec. 59-324)

Oregon—Allows dental hygienists and dental assistants to perform "oral health screenings" under "***written training and screening protocols*** adopted by the Oregon Board of Dentistry." Under the law, a dental hygienist may "render all services within the scope of practice of dental hygiene…without the supervision of a dentist." Once each calendar year, the dental hygienist must "refer each patient or resident to a dentist who is available to treat the patient or resident." (ORS 680.150, 680.200 and 680.205)

Pennsylvania—A "***public health dental hygiene practitioner***" certified by the state dental board may practice "educational, preventive, therapeutic, and intraoral procedures" "without the authorization, assignment, or examination of a dentist" in schools, older adult daily living centers, FQHCs , and other public health and underserved settings. Patients must be referred to a dentist; however, "failure to see a dentist does not prevent the patient from continuing to receive dental hygiene services." (Section 11.9)

Rhode Island—Dental hygienists "may engage in the practice of dental hygiene outside" a dentist's office "in order to ***render [care] to residents of nursing facilities***….without the on-site direct supervision of a dentist." General supervision is defined as "the dentist has authorized the procedure or duty.in accordance with his or her diagnosis and treatment plan" and "the dentist does not have to be physically present in the dental office when such treatment is being performed." (Sec. 5-31.1-6.1)

South Carolina—In a variety of ***limited access settings*** such as institutions that provide care to underserved populations including charitable organizations, a dental hygienists may apply "topical fluoride and perform the application of sealants and oral prophylaxis" under "general supervision" as long as "medical emergency care is available in the facility." Under the law, "general supervision" "does not require that a dentist be present when the procedures are performed." A dentist "or the South Carolina Department of Health and Environmental Control's public health dentist" must authorize the procedures to be performed. All new patients of record must be "clinically examined by the authorizing dentist" at "twelve month" intervals. (Sec. 40-15-110)

South Dakota—On March 7, 2011 Governor Dennis Daugaard signed legislation authorizing a dental hygienist to "provide preventive and therapeutic services under ***collaborative supervision*** of a dentist." This requires "a [written] collaborative agreement between a supervising dentist and dental hygienist." Under the arrangement, a dental hygienist may perform "educational, diagnostic, therapeutic, or preventive" services "authorized by the Board of Dentistry." These dental hygiene services may not be performed "more than thirteen months" without a "complete evaluation" of the patient "by a supervising dentist." (The law amends Sec. 36-6A-26; rules have yet to be issued by the South Dakota Dental Board.)

Texas—Dental hygienists may practice in the state under the "***general supervision***" of a dentist. According to the law, general supervision means "where a dentist may or may not be present on the premises when the dental hygienist performs the dental hygiene procedures." The law allows dental hygienists "practicing in certain facilities" which include nursing facilities, a school-based health center, or a community health center to perform dental hygiene services "for patients whom the dentist has not seen within the past twelve months" under certain conditions. Dental hygienists must make a written referral of patients to a dentist and may not perform dental services after six months "unless the patient has been seen" by a dentist. (Chap. 115.1 and 115.5)

Vermont—The law provides for two different definitions of "general supervision."

One definition ***applies to services provided in "a public or private school or public or private institution***." Under the definition, "when providing general supervision" the dentist "must be available for consultation" but "is not required to be physically present at the site where dental hygiene services are provided." A "general supervision agreement" is necessary "signed by" the dental hygienist and the dentist. The law provides for "variable terms of the [supervision] agreement" to be "modified at any time in writing." If modifications are approved by both parties, a dentist must review patient records at least every six months. The dental hygienist must "advise or refer the patient to obtain dental or other care" beyond his or her scope of practice. (Rule 1.11(n) and 10.1-7 26 V.S.A. Sec. 854)

Virginia—Under Virginia law, "***general supervision***" means that "a dentist has evaluated the patient and prescribed or authorized services to be provided by a dental hygienist; however the dentist need not be present in the facility while the authorized services are being provided." A pilot project in three underserved districts enable a dental hygienist to practice under an "expanded capacity" protocol providing "education, assessment, prevention, and clinical services" under the "***remote supervision*** of a VDH [Virginia Department of Health] dentist." "Remote supervision" means the dentist "has regular periodic communications" with the hygienist regarding "patient treatment" but the dentist "has not done an initial examination of the patients who are to been seen and treated." The dentist is "not necessarily onsite" when the services are provided. Under the protocol, "a dental hygienist may use and supervise assistants." (Chapter 27 of Title 54.1-2722 Subsection (E))

Washington—Dental hygienists may be "employed, retained, or contracted by health care facilities and senior centers to perform authorized dental hygiene operations and services without dental supervision under a ***lease agreement with a health care facility***." Services are limited to "patients, students, and residents" of "health care facilities," "senior centers," and other public and private nonprofit facilities that provide care to underserved populations. The dental hygienist must "enter into a written practice arrangement plan" with a dentist. The plan ensures the dentist will "provide off site supervision of the dental services," but does not "create an obligation for the dentist to accept referrals of patients receiving services under the program." The dental hygienist is required to "obtain information from the patient's primary health provider" about "any health conditions" that "would be relevant" to the patient's dental care. Dental hygienists can get this information through either "direct contact" or "through a written document from the provider" presented by the patient. Patients must be referred to dentists for "dental planning and dental treatment." (RCW 18.29.056) Dental hygienist "may assess for and apply sealants and apply fluoride varnishes" and provide other dental hygiene services in "community based sealant programs" in schools. (RCW 18.29.220)

West Virginia—A dental hygienist "may engage in ***public health practice***" rendering all services allowed under "general supervision" in settings that care for underserved populations. Under "a general supervision permit" a dental hygienist may provide "for not more than fifteen (15) consecutive days or three (3) consecutive weeks" of preventive dental hygiene services to patients without a dentist "physically present at the location." The dentist must examine the patient within the "twelve months prior to" the time the dental hygiene services are provided. A patient cannot be treated "two consecutive times" without a dentist examination. Dental hygienists must "comply with written protocols or written standing orders" from the "supervising dentist" and the patient must be informed of treatment under general supervision. If "significant" changes occur in a patient's medical history the

dental hygienists must consult with "the supervising dentist or an attending physician" before providing dental hygiene services. Dental hygienists may provide educational services, nutritional counseling, "generalized" oral screening "with subsequent referral to a dentist," as well as apply fluoride "with no supervision of a licensed dentist." (Sec. 5-1.8.5) (Sec. 5-1.8.4 and 5-1.8.7)

Wisconsin—Allows a hygienist to "practice dental hygiene or preform remediable procedures only ***as an employee or as an independent contractor***" for "***a school board or governing body*** of a private school or of a tribal school," or in specific settings for underserved populations "if a dentist" is not present in the facility. However, treatment must be provided with a "written or oral prescription." The "dentist who" prescribed the procedures must have "examined the patient at least once during the twelve month period immediately preceding" the date upon which the procedures are performed and "informed consent" must be acquired from the patient or legal guardian. (Sec. 447.06[2])

Figure 4: States Considering New Oral Health Workforce Models

Alaska—Alaska Native Tribal Health Consortium created the first ***Dental Health Aid Therapist*** initiative in the United States. In partnership with the University of Washington, the DENTEX program trains dental therapists to provide routine restorative care and promote oral health prevention in Native Alaskan communities.

Arizona—The state hosted a ***Community Dental Health Coordinator*** (CDHC) intern at the Hopi Health Care Center in Polacca, Arizona, who completed didactic training at the University of California, Los Angeles. The Arizona School of Dentistry and Oral Health (ASDOH) has an agreement to open a CDHC program in Mesa, Arizona. The program will host three students who are training to work in American Indian communities.

California—***Registered Dental Assistant in Expanded Functions*** (RDAEF): California's state workforce grant for 2010 aims to "assist safety-net providers" in use of "new classifications of mid-level dental providers for cost-effective service delivery." Goals of the project are to "provide an affordable training program for mid-level dental personnel for the new California oral health license category."

Connecticut—Legislation (HB 5616) has been introduced in 2011 for an ***Advanced Dental Hygiene Practitioner*** who would perform "diagnostic, educational, palliative, therapeutic, prescriptive, and minimally invasive restorative oral health services." It has been reported favorably from the Joint Committee on Human Resources and its fiscal implications are being analyzed.

Kansas—Legislation (SB 132) has been introduced in 2011 for an "***Extended Care Permit III" or expanded dental hygiene practice*** that authorizes a dental hygienist "sponsored by a dentist" to practice that includes "but is not limited to emergency dental care techniques, the preparation and placement of temporary restorations, and the adjustment of prostheses, and appropriate pharmacology."

Maine—Legislation (HB 219) has been introduced in 2011 that would create a new "***Oral Health Practitioner***" who would be able to practice "without the supervision of a dentist." The OHP could "perform assessments and treatments, preparations, and restorations," and perform "preparation and placement" of stainless steel crowns as well as management of dental trauma that includes "minor surgical care and suturing."

Minnesota—Minnesota created the first ***Advanced Dental Therapist (ADT) and Dental Therapist (DT)*** professional. The ADT can provide "atraumatic restorative therapy," "place temporary restorations," perform "tooth reimplantation," and perform "nonsurgical extractions of periodontically diseased permanent teeth" as authorized by a dentist. The state has issued provisional approval of the educational programs for dental therapy in the state (one at the University of Minnesota and the other at Metropolitan State University) and students in both have completed their first year of training.

The state also hosts interns from the ***Community Dental Health Coordinator*** program who were trained at the University of California, Los Angeles at White Earth Indian Health Services in Ogema, Minnesota, and Cass Lake Indian Health Services in Cass Lake, Minnesota.

New Mexico—Legislation (HB 187) was introduced in 2011. This bill defines the "***Community Dental Health Coordinator***" as a "dental assistant, dental hygienist, dental therapist, or other trained personnel" certified by the Board of Dentistry to "provide educational, preventive, and limited palliative care and assessment services" working collaboratively with a dentist. The bill defines palliative care as "nonsurgical, reversible procedures to alleviate pain and stabilize acute or emergent problems."

Ohio—Ohio is one of five states (Kansas, New Mexico, Vermont, and Washington) that was selected by the W.K. Kellogg Foundation to promote community led efforts to enact a two-year "dental therapist" training program to increase access to oral health care. According to the Kellogg spokesperson, "it is time now for more states and tribal nations to seriously consider new and proven approaches—such as the ***dental therapist model***—as a way to bring critically needed oral health care services to vulnerable children and families."

Oklahoma—This state also hosted interns from the "***Community Dental Health Coordinator***" program that were trained at the University of Oklahoma. The internships were at federally qualified health centers at Fairfax Medical Center, Fairfax, Oklahoma; Stigler Health and Wellness Center, Stigler, Oklahoma; Pushmataha Family Medical Clinic, Clayton, Oklahoma; Family Health Center of Southern Oklahoma; and Kiamichi Family Medical Center, Battiest, Oklahoma.

Oregon—Legislation (SB 738) was introduced in 2011 that directs the Oregon Health Authority to approve "one or more five-year pilot projects designed to expand the roles of dental professionals, teach new skills to dental professionals, and develop

new categories of dental professionals." The bill creates a new "***community health dental hygienist***" who may provide dental risk assessment and referral, perform temporary restorations, and prescribe drugs.

Pennsylvania—The Maurice H. Kornberg School of Dentistry, Temple University is the host of an urban ***Community Dental Health Coordinator*** training site. The training for urban-based CDHCs will also occur in Federal Qualified Health Centers and in urban, inner city locations around Philadelphia, Pennsylvania.

Vermont—Legislation (HB 398) was introduced in 2011 to create a "***dental therapist***" who provides "evaluation and assessment, education, palliative therapy, and restoration."

Washington—Legislation (HB 1310) was introduced in 2011 to create an "***advanced dental therapist***" and "***dental therapist***" who could perform "restoration of primary and permanent teeth," "pulpotomies on primary teeth," and "placement of temporary crowns."

Wisconsin—One of the placement sites for the ***Community Dental Health Coordinator*** program students trained at the University of California, Los Angeles was at the Oneida Community Health Center in Green Bay, Wisconsin.

Appendix 3: State-by-State Policy Scan

State	RDH requirements	State-level articulation agreements	Dental hygiene agreements (see note, p. 36)	For more information
Alabama	Registered Dental Hygienists must be graduates of a Commission on Dental Accreditation (CODA)-approved program or the Alabama Dental Hygiene Program. Community colleges award A.A.S. degrees to Dental Hygienists.	A computerized advisement system allows for guaranteed credit transfer. All community college courses are awarded general education credit.	There is no evidence of a dental hygiene-specific articulation agreement. Wallace State Community College, however, has an institutional agreement with University of Alabama at Birmingham and Athens State University.	http://stars.troy.edu/stars/stars.htm
Alaska	The Alaska Department of Labor states that a dental hygienist must have graduated from an accredited school and passed jurisprudence, national, and regional exams.	There exists a common general education core for transfer students.	There does not appear to be a public bachelor's degree program for dental hygiene. Associate's degree programs are available at University of Alaska Fairbanks and University of Alaska Anchorage.	www.healthcareersinalaska.info
Arizona	The State Board of Dental Hygiene states that a Registered Dental Hygienist must graduate from a "recognized" school.	State transfer policy has a general education core (AGEC) in three pathways – liberal arts, business, and math-intensive.	Arizona had identified a transfer pathway from dental hygiene into Northern Arizona University (NAU). Dental hygienists with an associate's degree in dental hygiene who are licensed in a state or province may complete the B.S.D.H. degree with as few as 30 semester credits at NAU.	https://www.aztransfer.com/cgi-bin/WebObjects/ATASS.woa/wa/DegreePathwayAZ http://janus.ucc.nau.edu/dh-p/completion/faq.php
Arkansas	The state board states that a dental hygienist must be a graduate of an American Dental Association (ADA)-approved school; the Dental Hygiene Act states that the school must be CODA-accredited.	The Arkansas Course Transfer System (ACTS) contains information about the transferability of courses within Arkansas public colleges and universities. Students are guaranteed the transfer for applicable credits within ACTS. Course transferability is not guaranteed for courses listed in ACTS as "No Comparable Courses."	There is no evidence of a dental hygiene-specific articulation agreement. The University of Arizona for Medical Sciences (UAMS) offers both the A.S. and the B.S.; it is unclear if there is a continuation or a guaranteed transfer policy within the program. UAMS is also not part of the state transfer system.	http://acts.adhe.edu/studenttransfer.aspx
California	State regulations simply state that a dental hygienist must have an associate's degree or higher.	State policies exist on transfer of courses with common course numbers.	There does not appear to be a public bachelor's degree program in dental hygiene. The state dental hygiene association's website lists four programs that offer the B.S., but none of them are private. The University of the Pacific Arthur A. Dugoni School of Dentistry has articulation agreements with almost all community colleges in the state, but these only cover general education courses.	www.pacific.edu/admission/academics/accel_programs/dental_hygiene/transfer_colleges

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Colorado	State Board rule 3.C.1.a states that an RDH must be a graduate of a CODA-accredited program that lasts at least two years.	Colorado community colleges have a common course numbering system. State policy guarantees junior standing in any arts and sciences program at a public four-year institution to a student completing an A.A. or A.A.S. who has completed guaranteed general education courses with a C or better.	There are no public B.S. programs in the state for Dental Hygiene, although the state allows for articulation agreements in professional programs.	www.colorado.edu/ArtsSciences/prospective/transfer_current.html
Connecticut	State regulations require that dental hygienists be graduates of a dental hygiene program with at least two years of academic instruction, and that the program be CODA approved.	State policy establishes an advisory council on articulation charged with developing articulation plans in key areas, including allied health.	There is no evidence of a dental hygiene-specific articulation agreement. Tunxis Community College is the only public institution to offer an A.A.S. in Dental Hygiene. It allows its graduates to roll into the B.S. program and has B.S. completion programs for other RDHs.	www.ct.gov/dph/lib/dph/practitioner_licensing_and_investigations/plis/dentalhygiene/dh_stats.pdf
Delaware	Delaware regulations require that dental hygienists be graduates of a board-approved dental hygiene program.	The state has developed a Transfer of Credit Matrix.	There is no evidence of a dental-hygiene specific articulation agreement. Dental hygiene is not explicitly listed in the Transfer of Credit Matrix, although it is possible that general education requirements for the ADH transfer easily.	http://dpr.delaware.gov/boards/dental/hygienist_license.shtml
District of Columbia	Regulations state that a dental hygienist be a graduate of a CODA-approved program lasting at least two years.	There do not appear to be any DH programs in the district.		
Florida	The state dental board requires dental hygienists to be graduates of a CODA-accredited school or college. Both A.S. and A.A.S. are listed on the website.	The associate's degree is considered the transfer degree and transfers as a block, with guaranteed acceptance of 60 credits and admission to a four-year institution.	Dental hygiene courses are included in the statewide course numbering system, and most courses are guaranteed transfer to institutions offering the same course. Additionally, Palm Beach Community College has an articulation agreement with St. Petersburg College.	http://scns.fldoe.org/scns/public/pb_index.jsp

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Georgia	Licensure in Georgia requires a minimum of an associate's degree from a CODA-accredited institution; A.S. and A.A.S. degrees are both listed on the Georgia Dental Association website.	There is a common general education core for the university system, which includes some two-year institutions but not all. Rules allow for some flexibility within the core, but guarantee that all core courses transfer.	Within the Dental Hygiene major, there is a common course numbering system, but that applies only to general education courses (e.g., biology, chemistry, mathematics). Technical two-year colleges do not have similar arrangements with four-year institutions.	www.gadental.org www.sos.ga.gov/plb/dentistry
Hawaii	Per the Hawaii Dental Hygiene application form, a dental hygienist must be a graduate of a CODA-accredited dental hygiene school.	There is a transfer system in place for core general education courses, as well as for certain courses and programs.	There does not appear to be a dental hygiene-specific articulation agreement. The University of Hawaii at Manoa offers the only dental hygiene program in the state at the B.S. level; Maui Community College provides a dental assisting program.	www.hawaii.edu/offices/app/aa/articulation/articulation.html
Idaho	Per the State Board of Dentistry website, a dental hygienist must be a graduate of a CODA-accredited school.	Articulation agreements exist both within public colleges and universities in Idaho, as well as with select institutions in neighboring states.	The Idaho State University website states that the Department of Dental Hygiene has formal articulation agreements with every public institution in Ohio. Articulation agreements also exist with most schools in Utah. However, these agreements seem to include prerequisite courses and general education requirements, not dental classes. There appears to be no statewide dental hygiene articulation agreement outside the institutional level	www.isu.edu/dentalhy
Illinois	Licensure requires the completion of a CODA-accredited and state-approved program lasting at least two years.	The Illinois Articulation Initiative aims to ease the transfer of students among public associate and bachelor's granting institutions. At 100 participating institutions, there is a general-education core curriculum that transfers seamlessly.	The Illinois Board of Higher Education lists only two B.S. programs for the state and no A.S. programs; the Community College Board lists 12 A.A.S. programs. There is no evidence of a dental hygiene-specific agreement, but core general education courses generally transfer as a block.	www.itransfer.org/iai/container.aspx?file=iai
Indiana	Both A.S. and B.S. programs are offered by state institutions.	Transfer policies vary from institution to institution and program to program. There does not appear to be a state-level articulation system.	There is no evidence of a dental-hygiene specific articulation agreement.	www.transferin.net

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Iowa	Dental hygienists must be graduates of an accredited dental hygiene institution.	Articulation agreements exist between the 15 community colleges and three regents universities, where students who have completed all requirements are granted junior standing. The agreement applies generally to liberal arts colleges only.	There do not appear to be any B.S.D.H. programs in Iowa, so there are no dental hygiene articulation agreements.	www.state.ia.us/dentalboard/da.html
Kansas	Dental hygienists must be graduates of a board-approved institution; the licensing form says the institution must be ADA-approved.	State Policy Inventory Database Online (SPIDO) states that community colleges are required by state statutes to enter into articulation agreements with universities. Articulation agreements vary on a program-by-program basis.	There do not appear to be any dental hygiene-specific articulation agreements.	www.wiche.edu/spido
Kentucky	Dental hygienists must be graduates of an ADA-approved institution.	There is a statewide general education core with guaranteed transfer as a block. Transferring in the general education core does not eliminate the need to take major-specific general education courses.	There does not appear to be a state-level dental hygiene-specific articulation agreement. Western Kentucky University has an articulation with the entire Kentucky Community and Technical College System (KCCTS) system.	www.wku.edu/chhs/cms/index.php/dental-hygiene
Louisiana	According to the Dental Practice Act, dental hygienists must be graduates of a Louisiana State Board of Dentistry-approved program.	Louisiana coordinates a master articulation matrix that lists courses that have been institutionally vetted for transfer. Receiving institutions maintain prerogative over what to accept or how it will count.	There is no evidence of a dental hygiene-specific agreement; courses in the ADH major that transfer are general education and science core courses.	www.regents.la.gov
Maine	According to the Dental Practice Act, dental hygienists must have received at least an associate's degree from a CODA-approved program.	There does not appear to be a systemic articulation agreement between community colleges and four-year institutions.	There is no evidence of a dental hygiene-specific agreement, but there are no community college programs in the state. The only A.S. degree in dental hygiene is already linked to the B.S. program.	www.uma.edu/dentalhygiene.html
Maryland	Dental hygienists in Maryland must have passed the North East Regional Board examination.	Students who have received an associate's degree are guaranteed transfer into four-year institutions. Specifically, general education credits transfer even without a course-to-course match.	ARTSYS lists a general-education transfer core that is transferable to the B.S. at University of Maryland-Baltimore for all three two-year ADH programs in the state; only general education courses are guaranteed transfers.	http://artweb.usmd.edu

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Massachusetts	According to the MA ADHA, a dental hygienist must graduate with a certificate, associate's degree, or bachelor's degree from a CODA-accredited program.	There does not appear to be a state-level, systemic articulation agreement between community colleges and four-year institutions.	There is no public B.S. program in the state, and consequently there are no dental hygiene-specific agreements.	www.adha.org/careerinfo/entry/ma.htm
Michigan	According to the state dental board, a dental hygienist must graduate from a CODA-accredited program.	General education core courses transfer via the MACRAO agreement, but not all institutions participate.	There is no evidence of a hygiene-specific articulation agreement.	www.macrao.org/Publications/MACRAOAgreement.asp
Minnesota	According to the state dental board, a dental hygienist must graduate from a CODA-accredited program.	The Minnesota transfer curriculum defines an approved block of general education courses that are guaranteed to transfer. The state website specifies that A.S. and A.A. degrees are designed for transfer, and students completing them have completed either the transfer curriculum (A.A.) or the 30 credits of transfer general education (A.S.). A.A.S. degrees do not transfer without institution-specific articulation agreements.	Most ADH degrees in Minnesota appear to be A.A.S., so they do not fall under the transfer guidelines. There is no evidence of a dental hygiene-specific articulation agreement.	www.mnscu.edu/students/admissions/transfer.html
Mississippi	According to the state dental hygienists' association, a dental hygienist must graduate from a CODA-accredited program.	There is a statewide articulation agreement listing courses a senior college will accept for transfer without loss of credit. This does not replace institution or program-specific articulation agreements.	Dental hygiene is listed under the statewide articulation agreement. The University of Mississippi Medical Center is the only B.S. program in the state, and the statewide articulation agreement lists the courses that will transfer into the B.S. program in dental hygiene. However, this does not seem to be targeted at ADH holders; rather, it seems to be targeted at students who have completed two years of general education and want to transfer into the B.S. program.	www.ihl.state.ms.us/cjc/articulation_agreement.html

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Missouri	According to the state dental board, a dental hygienist must graduate from a CODA-accredited program.	Transfer and articulation is by institution, and can be done program by program or course by course. The COTA principles suggest that all institutions should develop a general education curriculum that should be fully transferable. A.A.S. degrees are not designed for transfer, but are transferrable on a program-to-program basis.	There is no evidence of a dental hygiene-specific articulation agreement.	www.dhe.mo.gov/files/policies/credittransfer.pdf
Montana	According to the state dental board, a dental hygienist must graduate from a CODA-accredited program.	The state is in the process of developing a common course numbering system and a systemic transfer process. There exists a general education core, but an A.A.S. does not fulfill these requirements. A.A.S. holders will have their coursework analyzed on a class-by-class basis.	There is no bachelor's degree program in dental hygiene in Montana, and there is no evidence of a dental hygiene-specific articulation agreement.	http://mus.edu/transfer/TwoYearPrograms.asp
Nebraska	According to the state dental board, a dental hygienist must graduate from at least a two-year CODA-accredited program.	There is a state transfer initiative for A.A. degrees only.	There is no evidence of a dental hygiene-specific articulation agreement. The NDHA lists only two DH programs in the state: Central Community College – Hastings (A.A.S.) and University of Nebraska Medical Center (last two years of B.S.). The university offers a B.S. completion program, but no formal transfer per se.	www.nedha.org
Nevada	According to the state dental board, a dental hygienist must graduate from at least a two-year CODA-accredited program.	State regulations require that A.S. and A.A. holders are considered to have completed general education requirements in select B.S. programs. There exist some institution-specific agreements as well. The state has a common course numbering system.	Some dental hygiene courses are listed within the common course numbering system, although some are listed as non-transferable. NDHA lists only two schools in the state – Truckee Meadows Community College (A.S.) and College of Southern Nevada (A.S. and B.S. Completion). Truckee Meadows has transfer agreements with some four-year institutions.	www.nvdha.org
New Hampshire	According to the state dental board, a dental hygienist must graduate from at least a two-year CODA-accredited program.	The state has a transfer website that indicates which courses transfer to other universities. The NHTI website also states that the acceptance of transferred credits is ultimately the decision of the receiving institution.	There does not appear to be a public B.S. program in dental hygiene in the state, so dental hygiene courses transfer as electives into four-year institutions.	www.nhtransfer.org

Appendix 3: State-by-State Policy Scan

New Jersey	According to the state dental board, a dental hygienist must graduate from at least a two-year CODA-accredited program.	The state has a comprehensive statewide transfer agreement. The agreement addresses A.A. and A.S. degrees – graduates are guaranteed 60-64 credits, junior credit, and completion of general education core upon transfer.	There does not appear to be a public B.S. program in dental hygiene in the state. The NJDHA shows five A.A.S. programs: four community colleges and the University of Medicine and Dentistry of New Jersey (UMDNJ).	http://shrp.umdnj.edu/dept/alliedental/dh/index.html
New Mexico	According to the state dental board, a dental hygienist must graduate from at least a two-year accredited program.	The state requires that designated core general education courses transfer among New Mexico institutions. The state has transfer modules for six occupation/major fields that guarantee 64 credits of transfer, including general education. Dental hygiene is NOT one of these.	There is no evidence of a dental hygiene-specific agreement. The NMDHA website lists three programs: University of New Mexico (B.S., B.S. completion) and two community college A.A.S. programs.	www.nmdha.org
New York	According to the state dental board, a dental hygienist must graduate from at least a New York- or CODA-accredited program.	There is no legally mandated transfer policy in the state.	There is no evidence of a dental hygiene-specific agreement. The State University of New York (SUNY) Farmingdale B.S. completion program implies that A.S. holders have completed all general education courses, while A.A.S. holders need additional general education credits. SUNY Canton has a Bachelor's Degree in Technology (2+2 completion) in dental hygiene, which serves as a de facto transfer agreement.	www.canton.edu/sci_health/dhyg/faqs.html
North Carolina	According to the state dental board, a dental hygienist must graduate from a dental board-accredited program.	There is a comprehensive articulation agreement that addresses A.S. and A.A. degrees – graduates are guaranteed 64 credits and junior status. There also exists a 44-credit "portable" general education core.	There is no evidence of a dental hygiene-specific agreement, although most A.A.S. programs transfer general education courses into the B.S. UNC has course transfer equivalents for many general education classes, but articulation is done on an institution-by-institution basis.	www.dent.unc.edu/academic/programs/dh/bsdh/completion/stepthree.cfm www.admissions.unc.edu/pdf/nccc_course_equivalency_list.pdf
North Dakota	According to the state dental examiners' website, a dental hygienist must graduate from an ADA-accredited institution.	There is a common course numbering system for academic disciplines, as well as a common general education core that transfers between community colleges and four-year institutions.	There is no evidence of a dental hygiene-specific agreement, but some dental hygiene courses transfer via the statewide articulation agreements. According to the North Dakota Board of Dentistry, the only CODA-accredited school in the state is the North Dakota State College of Science.	www.ndus.edu/students/transfer-within-to-campuses

Appendix 3: State-by-State Policy Scan

Oklahoma	According to state dental board rules, dental hygienists must graduate from a CODA-approved program lasting at least two years.	The state has transfer matrices outlining comparable courses that will transfer. Dental hygiene courses are not included in these matrices.	The University of Oklahoma offers a RDH-B.S. program. It accepts transfer credit of up to 30 hours through various validation methods, leaving 30 semester hours for completion of the degree. Validation is by exam. There is no evidence of a dental hygiene-specific agreement.	www.okhighered.org/transfer-students/course-transfer.shtml
Oregon	According to state dental board rules, dental hygienists must graduate with an associate's degree or a B.S. from a CODA-approved program.	The state transfer module is 1.5 years of general education core courses. A.A. and A.S. degrees transfer for business majors.	There is no evidence of a dental hygiene-specific agreement or a systemic dental hygiene transfer system. Certain institutions have individual articulation agreements – Lane Community College, Mt. Hood Community College, and Rogue Community College with Pacific University or the Oregon Institute of Technology.	http://oregonstate.edu/admissions/transfer/otm.html
Pennsylvania	According to state dental board rules, dental hygienists must graduate from a CODA-approved program.	A.A. or A.S. degrees transfer from community colleges in the PAHSSE system. An online transfer system shows which courses transfer among institutions. The Pennsylvania Transfer and Articulation Center describes transfer agreements and allows students to understand which classes transfer. The state also has a general education transfer credit framework.	There is no evidence of a dental hygiene-specific agreement. Dental hygiene is not listed in the matrix of articulation agreements.	www.patrac.org
Rhode Island	According to the state board of examiners in dentistry, dental hygienists must graduate from a CODA-approved program.	The state publishes an annual transfer guide for students that lists every course that transfers within the 3 Rhode Island public institutions; program transfer plans also exist, which list what students should take if they plan to transfer from a specific community college program to a baccalaureate program.	There does not appear to be a public B.S. program in dental hygiene in Rhode Island. Associate's degrees in dental hygiene transfer to either the B.S. in Community Health or the B.G.S. in Health Services Administration.	www.ribghe.org/ritransfers.htm
South Carolina	According to the state licensing board, dental hygienists must graduate from an ADA-accredited program.	There is a state website for transfer and course equivalencies. No ADH-BDH listed, although one certificate to A.A.S. is listed.	There is no B.S. program in dental hygiene listed on the state website for transfer; the only A.A.S. programs are at technical colleges.	www.sctrac.org

Appendix 3: State-by-State Policy Scan

South Dakota	According to the state board, dental hygienists must graduate from a CODA-accredited program.	Transfer policies and articulation agreements vary on an institutional and program basis.	The only CODA-accredited school in South Dakota is the University of South Dakota; it offers both the A.S. and the B.S. program.	www.sdboardofdentistry.com
Tennessee	According to the state board, dental hygienists must graduate from a CODA-accredited program.	Tennessee has a common course numbering system, but only general education courses are included in that list. The state is in the process of developing a common core for junior transfer standing (for A.A. and A.S. degrees).	There is no evidence of a dental hygiene-specific agreement. East Tennessee State University has a B.S. completion program that gives credit for A.A.S. general education and dental hygiene courses upon completion of a specific dental hygiene course at the institution.	www.tndha.org
Texas	According to the state board, dental hygienists must graduate from an ADA-accredited DH program.	Texas has a common course numbering system, but dental hygiene courses are not included. TCHB regulations state that all lower-division courses with common course numbering and in the state lower-division course guide manual are fully transferable. Most of the regulations apply to the core curriculum.	There is no evidence of a dental hygiene-specific agreement. Colin County Community College has an agreement with Baylor University and Texas A&M; most dental hygiene programs in the state appear to be A.A.S. programs.	www.baylor.edu/admissions/index.php?id=56762
Utah	According to the state board, dental hygienists must graduate from a CODA-accredited dental hygiene program.	Utah has a common course numbering system, but dental hygiene courses are not included. Only liberal arts courses appear on the matrix on the state Board of Regents website.	There is no evidence of a dental hygiene-specific agreement. Most dental hygiene programs in the state appear to be A.A.S. programs; transfer and articulation within dental hygiene programs is done on an institute-by-institute basis.	www.higheredutah.org
Vermont	According to the state statutes, dental hygienists must graduate from a CODA-accredited program.	Transfer policies and articulation agreements vary on an institutional and program basis.	The only college offering dental hygiene in the state is Vermont Technical College. Current A.S. students can move directly to the B.S. if they wish.	www.vtc.edu/interior.php/pid/4/sid/26/tid/559
Virginia	According to the state statutes, dental hygienists must graduate from a CODA-accredited program.	The state has a website that allows students to see which of their courses transfer from a community college to a university. There does not appear to be a systemic statewide transfer policy.	There is no evidence of a dental hygiene-specific agreement; each institution has its own regulations for admissions and transfer. The ADHA website lists five dental hygiene programs – three A.A.S. programs, Old Dominion University (B.S.), and Virginia Commonwealth University (B.S.).	www.adha.org/careerinfo/entry/va.htm

Appendix 3: State-by-State Policy Scan

Washington	According to the state statutes, dental hygienists must graduate from a state-approved program.	There is a statewide system of articulation and alignment. College-level courses transfer "DTA Transfer Associate Degrees" (basically A.A. and A.S. degrees), which also satisfy general education requirements and lead to junior standing. There is an A.S.-T degree for rigorous math and science majors. Each university has its own transfer and equivalency website.	There is no evidence of a dental hygiene-specific agreement. Eastern Washington University is listed as the only entry-level B.S. program in the state. Its transfer guides don't seem to include dental hygiene courses; rather, they focus on prerequisites and general education requirements. There is no evidence of a dental hygiene-specific agreement. Eastern Washington University is listed as the only entry-level B.S. program in the state. Its transfer guides don't seem to include dental hygiene courses; rather, they focus on prerequisites and general education requirements.	http://access.ewu.edu/Undergraduate-Studies/Curriculum-and-Policies/Transfer-Guide.xml
West Virginia	According to the state statutes, dental hygienists must graduate from a state-approved program.	Transfer policies and articulation agreements vary on an institutional and program basis; there does not appear to be a systemic statewide transfer policy.	There is no evidence of a dental hygiene-specific agreement. Each institution lists its own requirements for admission and transfer.	http://wvdha.org
Wisconsin	According to the state licensing board, dental hygienists must graduate from a CODA-approved program.	The state has a transfer guide and a transfer website that lists transferable courses. The state also has transfer agreements, but dental hygiene is not listed in any of these.	There are no public B.S. programs in dental hygiene in Wisconsin.	www.wi-dha.com/Wisconsin_Dental_Hygienists_Association/Welcome.html
Wyoming	According to the state dental board, dental hygienists must graduate from a CODA-approved program.	There exists a Wyoming state course catalog that lists 100- and 200-level courses that are guaranteed to transfer from community colleges to the University of Wyoming.	The University of Wyoming offers a joint B.S.D.H. with Sheridan Community College, which when completed results in two degrees (A.A.S. and B.S.). Although there is no official dental hygiene agreement, the Sheridan/University of Wyoming degree effectively serves as one.	http://uwadmnweb.uwyo.edu/registrar/bulletin/6hsdhyg.html

Note: In Appendix 3, the fourth column, "Dental hygiene agreements," is intended to reflect the presence of **statewide** dental hygiene articulation agreements. Language stating that there are no agreements in a state is not meant to imply that there are no institutional agreements, only that there are no articulation or transfer policies applying to the state as a whole. In the same column, any institutional agreements mentioned are there as examples. This column is not intended to be either a comprehensive or exhaustive list of all institutional agreements in the state.

PROGRAM TYPES

There are three different program types for dental hygiene education accredited by the Commission on Dental Accreditation (CODA).

Entry-level: Entry-level programs are for students with no prior dental hygiene education, and prepare graduates for the clinical practice of dental hygiene. These programs are found at vocational institutions, community or technical colleges, or four-year institutions (either connected to an undergraduate institution or to a dental school). In most cases, applicants typically complete mandatory prerequisite coursework prior to applying to or beginning a dental hygiene education program.

Entry-level programs are broken down further into the following program levels:

- *Entry-level Associate Degree Programs*—Graduates are awarded an associate degree upon completion. The average associate degree program is two years and requires an average of 84 credit hours for completion, according to the American Dental Hygienists' Association (ADHA) 2012 Dental Hygiene Education Program Director Survey.
- *Entry-level Baccalaureate Degree Programs*—Graduates are awarded a baccalaureate degree upon completion. The average baccalaureate degree program is four years and requires an average of 120 credit hours for completion. Some programs award a Post-Degree Certificate to students who have previously earned a minimum of an associate degree and complete all requirements of the accredited dental hygiene educational program.
- *Entry-level Post-Baccalaureate Degree Programs*—Graduates are awarded a baccalaureate degree upon completion. These programs are for someone who has already obtained a baccalaureate degree in something other than dental hygiene from a four-year undergraduate institution and wishes to earn a subsequent degree in dental hygiene.

Graduates of a CODA-accredited dental hygiene program in all entry-level program types are eligible to sit for licensing exams and can go on to the

clinical practice of dental hygiene.

Admission requirements and prerequisites for entry-level programs varies from institution to institution, but generally includes:

- High school diploma or GED.
- High school courses in mathematics, chemistry, biology, English.
- A minimum GPA of 2.0 in high school.
- College entrance test scores.
- Up to 40 credit hours of prerequisite college coursework in chemistry, English, speech, psychology and sociology.

A note on licensing: Dental hygienists must graduate from a CODA-accredited dental hygiene program based in an institution of higher education. Hygienists must also be licensed in the state in which they wish to practice. Requirements for licensure vary from state to state, but generally include successful completion of an accredited entry-level program, completion of the written National Board Dental Hygiene Examination, a state or regional clinical examination and a state jurisprudence and ethics examination. Search for a CODA-accredited dental hygiene education program.

Degree Completion: Degree completion programs are specifically designed for licensed dental hygienists who have completed their entry-level education, obtained either a certificate or associate degree and are seeking to further their education by earning a bachelor's degree in dental hygiene or a related area. Graduates will earn a baccalaureate degree upon completion of the program. Degree completion programs offer either full- or part-time options, and vary between on-campus or online/distance education options. Dental hygienists possessing a bachelor's degree have broader career path opportunities available to them within dental hygiene education, administration, public health and corporate dental hygiene sales and education. For more information on nonclinical practice career paths, please visit the Dental Hygiene Career options section of this site.

Graduate: Graduate-level dental hygiene education programs are designed for dental hygienists who have obtained a baccalaureate degree in dental hygiene or a related field, and wish to earn a master's degree. Dental hygienists with a master's degree have the most career paths open to them within dental hygiene, particularly in dental hygiene education. Graduate-level programs in dental hygiene typically prepare graduates for careers as educators, administrators, or researchers, with curricula focusing on research methods and applications, health education, leadership and legal/ethical issues in dental hygiene. There is generally little to no clinical component to graduate-level dental hygiene programs.

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DENTAL HYGIENE

FOCUS ON ADVANCING THE PROFESSION

ADHA

Letter from the 2004–2005 ADHA President

What would the future of dental hygiene be if it were written by dental hygienists with the freedom to envision, to aspire, and to accomplish?

In 2002, the American Dental Hygienists' Association (ADHA) set out to answer this question when it implemented the "Future of Dental Hygiene" project. Three years later, ***Dental Hygiene: Focus on Advancing the Profession*** is realized.

This report encompasses far more than just the future of the dental hygiene profession, which was the original intention. In fact, this report expertly and logically documents our history and current events. It also outlines an innovative direction for dental hygiene's future. There have been significant milestones reached throughout the history of dental hygiene. However, we clearly have numerous opportunities ahead that will not only benefit the public's oral health, but will open doors for dental hygiene professionals in every state.

On behalf of the ADHA Board of Trustees, which approved this report at its winter 2005 meeting, I am proud to share the thoughtful, engaging, surprising and possibly controversial ideas with our state and local association leaders, members, health professionals, governmental officials, and other interested groups.

The board clearly recognizes and appreciates the time and effort that has gone into this report by the advisory board, subcommittees, and ADHA staff. This report exemplifies the endless commitment to ADHA and to the profession of dental hygiene by these individuals.

Best regards,

Helena Gallant Tripp

Helena Gallant Tripp, RDH
ADHA President

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DENTAL HYGIENE

FOCUS ON ADVANCING THE PROFESSION

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Overview

Disparities in access to oral health care services can be found today among population groups according to socioeconomic levels, race and ethnicity, age, and gender.

A dental hygienist is a licensed health care professional, who supports the health and well being of the American public through oral health promotion, education, prevention, and therapeutic services. Dental hygienists are graduates of accredited dental hygiene programs in colleges and universities, and are required to pass a national written examination and a state or regional clinical examination in order to obtain a license for practice. There are more than 120,000 registered dental hygienists in the United States.[1]

As health care professionals, dental hygienists provide oral health expertise in an array of workplace settings. As clinicians, dental hygienists may choose to work in private dental offices, school-based dental clinics, hospitals, managed care organizations, community health centers, correctional institutions, and nursing homes. In addition to direct patient care, dental hygienists may work in government, sales or marketing positions, or as educators, researchers, administrators, health policy makers, managers, consumer advocates, or consultants.

Dental hygiene practice varies by state, with state regulatory boards determining the range of services and granting licenses for practice. The type and range of services differ according to each state's regulations.

The varied settings in which dental hygienists practice and the comprehensive dental hygiene services they provide are critical because Americans face an epidemic of periodontal (gum) disease and dental caries (cavities, also known as tooth decay). Dental caries is the major cause of tooth loss in children, while periodontal disease is the major cause of tooth loss in adults. Fifty percent of all American youth ages 17 and under have had caries in their permanent teeth, while 75 percent of the U.S. population has some form of periodontal (gum) disease.[2] In addition, more than 27,000 cases of oral and pharyngeal cancer are diagnosed each year.[3] Despite these serious consequences of poor oral health, almost half of Americans do not receive regular oral health care.

Additionally, many research studies have suggested that periodontal (gum) disease is a potential risk factor for a number of diseases. Research has identified it as a possible risk factor for heart and lung disease; diabetes; pre-mature and low

birth-weight babies; and a number of other conditions. As one example, two out of three dental hygienists report that they see signs of hypertension and heart disease in their patients.[2] If left untreated, poor oral health can increase the risk of developing potentially life-threatening diseases that are responsible for the deaths of millions of Americans each year.

Despite the connection between poor oral health and a host of systemic diseases and conditions, disparities in access to oral health care services can be found today among population groups according to socioeconomic levels, race and ethnicity, age, and gender. Research has demonstrated that oral disease rates and oral health needs are highest in low-income and special needs populations, such as the elderly or the disabled.

Access to preventive and therapeutic oral health care can be increased by maximizing the services hygienists are educated to provide, expanding dental hygiene practice settings, reimbursing directly for services delivered, and removing restrictive supervision requirements.[4]

It is clear that in order to promote total health, the public needs comprehensive preventive oral health care and dental hygienists are the health care professionals with the knowledge and skills best suited to meet these needs. As such, dental hygienists should be integrated more fully into the health care workforce to provide a broader array of services to meet the needs of the American public. Legislators and policy makers, as well as other health care entities must recognize and support this expanded role for dental hygienists. The profession itself must embrace change, focus on growth and development, and plan for its future as well as the future oral health needs of the public.

Introduction

Dental hygiene education faces many challenges: the proliferation of new associate degree programs; the lack of incentive for completion of a baccalaureate degree versus an associate degree; and the various educational levels for entry into the profession.

During the 1980s, members of the dental hygiene profession, working with the leadership of the American Dental Hygienists' Association (ADHA), held a series of workshops to address dental hygiene education and practice. Through these workshops, practicing dental hygienists and educators from around the country reached consensus on major issues of importance to the future of dental hygiene. A prospectus was developed that offered a philosophical and conceptual foundation to meet the changing societal needs and health systems challenges of the 21st century.[5]

Since those first education and practice workshops more than twenty years ago, numerous changes have taken place in higher education, health care, and public policy.

Colleges and universities have had, and continue to face, challenges, particularly in terms of a deteriorating fiscal environment. Cuts in federal tax rates and state spending patterns have prompted higher education administrators to maximize efficiency and re-evaluate programs that are costly to operate. As a result, a number of dental and dental hygiene programs have been closed.

In addition to fiscal concerns, dental hygiene education faces many other challenges: the proliferation of new associate degree programs; the lack of incentive for completion of a baccalaureate degree versus an associate degree; and the various educational levels for entry into the profession. In addition, there is a shortage of appropriately educated dental hygiene faculty members, no universal plan for the various levels of dental hygiene education, lack of control over accreditation standards for dental hygiene education by the dental hygiene profession, and the threat of preceptorship (on-the-job training) or career tracks that do not require a formal accredited education.

While dental hygiene education *has* been addressing these issues, the profession also has been focused on establishing a theoretical framework to validate dental hygiene education and practice. A National Dental Hygiene Research Agenda (NDHRA) was formulated and validated in 1995.[6] In 2001, priorities for NDHRA were recommended that included research related to health services, access to care for underserved populations, health promotion, and disease prevention.[7]

Some in dental hygiene raised fundamental issues with respect to the use of this national agenda to guide research efforts. However, the dental hygiene community must commit to using the agenda to guide research and other professional efforts. A consistent and reliable system is needed to monitor the progress and outcomes of efforts made in conducting research, in preparing hygienists as researchers, and in publishing findings. This tracking and evaluation system will provide direction and focus for the research conducted by dental hygienists.

In 1997, the ADHA House of Delegates adopted a model of evidence-based practice for dental hygiene. This model calls for conducting new research and promoting the application of research findings among all members of the profession—clinicians, educators, administrators, and researchers themselves. To support research efforts and build a rigorous body of knowledge, a research infrastructure is essential.

Another area of intense change is science and technology. Over the years, the health care community has achieved dramatic scientific and technological advances, resulting in a greater understanding of the relationship between oral health and systemic disease. As the associations between periodontal and cardiovascular diseases, diabetes, low birth-weight and other medical conditions become better defined, it will be incumbent upon dental hygienists to embrace these changes.

In addition, this past decade witnessed the release of the first-ever U.S. Surgeon General's Report on oral health (released June 2000): *Oral Health in America: A Surgeon General's Report* (Surgeon General's Report). The report's focus on oral health sensitized the nation to the connection between oral health and systemic disease and the reality that there is a silent epidemic of oral diseases affecting poor children, the elderly, and many members of racial and ethnic minority groups. The report also maintained that America's continued growth has resulted in broad socio-economic differences that hinder the ability of some segments of the population to access oral health care.[8]

Currently, almost 43 million Americans live in dental health professional shortage areas, as defined by the U.S. Department of Health and Human Services Health Resources and Services Administration,[9]

The disparity in access to oral health care is exacerbated by a current and projected worsening shortage of dentists. Dental workforce data projects a decrease in the number of graduating and practicing dentists.

and 108 million people lack private dental insurance, which is more than 2.5 times the number of those who lack medical insurance.[10] As a follow-up to the Surgeon General's Report, a *National Call to Action to Promote Oral Health* was released in May 2003 from the U.S. Department of Health and Human Services to support changes in the research and delivery of oral health care.[10]

Access to care continues to remain a concern to the public seeking oral health care and to dental hygienists attempting to provide care in all settings in order to improve oral health for all Americans. The disparity in access to oral health care is exacerbated by a current and projected worsening shortage of dentists. Dental workforce data projects a decrease in the number of graduating and practicing dentists. According to the Bureau of Labor Statistics, the projected growth for dentists is 4 percent—slower than average growth. However, for dental hygienists there is a projected growth of 43 percent—much faster than average—through 2012.[11]

Currently, there are 130,000 dentists in the U.S., compared to 120,000 practicing dental hygienists.[12] However, as the number of dentists decreases and the number of dental hygienists increases, this balance will shift dramatically. As this happens, fewer dentists will be available to address the needs of underserved segments of the population. With accredited education, licensure, growing numbers, and a regulatory system already in place, dental hygienists are the logical oral health care providers to play a key role in filling this void.

The extent of unmet need will worsen dramatically unless the oral health workforce is provided economic and other incentives to locate/practice in underserved areas. Further, these providers must exhibit cultural competence and communication skills to fully meet the needs of increasingly diverse populations. In addition, this workforce must have regulatory authority to practice to the extent of their educational qualifications and standards of competence rather than limited scopes of practice. It is important for dental hygienists to initiate planning of new models of oral health care delivery to meet the needs of underserved population groups. Once these models are initiated, it is important for policy makers and other health care providers to support their implementation.

In the face of this increasingly serious oral health manpower crisis and a lack of access to oral health care for certain segments of the population reaching crisis proportions, ADHA determined that it was time to prepare for the future of dental hygiene.

In 2002, ADHA appointed a working group of dental hygiene leaders from around the country and identified the following focus areas for the creation of a report on the future of dental hygiene: research, education, practice and technology, licensure and regulation, public health, and government. Throughout the year, member input was solicited at the ADHA annual session, board-of-trustees' strategic planning session, constituent officers' workshop, and council meetings. Dental hygienists and other interested individuals were encouraged to share their vision and ideas through dental hygiene publications and through the association's Web site and email list forum. Throughout this process, it became clear that dental hygienists share a number of fundamental beliefs that shape the focus and direction of dental hygiene. These beliefs are:

- Access to oral health care is a right of all people.
- The oral and general health needs of the U.S. population are growing, and dental hygiene practice and education must evolve to meet them.
- Dental hygienists should be able to provide the care they have been educated to deliver.
- Dental hygiene is part of an overall health care delivery system, not simply an arm of dentistry. Dental hygiene must create an integrated model of oral health care delivery with other health care providers.
- Dental hygiene needs to identify and remove the barriers that restrict the public's access to oral health care.
- Dental hygiene must move from a mechanical-based treatment of disease model to a wellness model of care.
- Dental hygienists advocate high standards of professional practice.
- It is the responsibility of dental hygienists to determine the profession's future regarding education, licensure, and practice, and they should continue to build the profession's knowledge through the expansion of its research base.

The Future Vision for Dental Hygiene

To establish the framework for dental hygiene's future, hygienists were asked to consider what dental hygiene would be like five years from now and 20 years from now.

A future vision for dental hygiene, developed by this process, is

Dental hygiene is the preventive oral health care profession, highly valued

There must be greater networking among dental hygienists and increased collaboration within and across career specialties to ensure that dental hygienists' concerns are heard and that the oral health needs of the public are met.

for its knowledge, skill and commitment to improving the quality of the nation's overall health by providing effective and accessible oral health care.

The profession contributes to quality health care by utilizing evidence-based approaches for clinical decisions, fostering professional growth through advanced education and life long learning, providing leadership in health policy to create change and improve delivery systems that will result in increased access to care for the public.

The majority of individuals who choose dental hygiene as a career remain active in the profession because of the opportunities for personal and professional development, the chance to help others through public service, stimulating work environments, and financial remuneration commensurate with various professional roles and responsibilities.

Focus Areas—A Call for Action

To realize the future envisioned by the dental hygiene advisory board, six focus areas were identified as essential to bring about positive change for the dental hygiene profession as well as the health care delivery system.

- **Research**
- **Education**
- **Practice and Technology**
- **Licensure and Regulation**
- **Public Health**
- **Government**

Dental hygiene leaders from around the country were asked to serve on subcommittees related to each area of the report. These groups began to articulate a desired future for each focus area. They developed goals and recommendations to define what must occur over the course of the next decade and beyond to realize the future for dental hygiene. The following pages summarize multiple goals and recommendations developed for the six focus areas.

As each subcommittee developed its draft report, several themes emerged: dental hygienists must develop professional socialization skills, there must be greater networking among dental hygienists and increased collaboration within and across career specialties, and there must be increased collaboration with policy makers and the public to ensure that dental hygienists' concerns are heard and that the oral health needs of the public are met.

Research

It is widely recognized that dental hygiene practice must be based on sound research and scientific information. To promote research and advance the scientific base of dental hygiene practice, a research infrastructure is required. Such an infrastructure will support research efforts and enable the systematic and purposeful building of a rigorous body of knowledge. The five essential elements of a research infrastructure are derived from a model published in the dental hygiene literature.[13]

A research infrastructure suggests a level of coordination and integration of activities that extends beyond any one organization, institution or center, and requires considerable commitment, communication and effort on the part of the dental hygiene community at large.

A cadre of professionals trained and actively participating in research will support the dental hygiene research infrastructure. Ideally, researchers in the profession should be prepared through doctoral education. Faculty and students need to be socialized to the importance and benefits of research and graduate education. Further, educational programs must actively promote research as a career path. Mechanisms for supporting advanced education and mentoring systems are required to enable new researchers to engage in the research process effectively.

Integrating research throughout all facets of the profession requires significant dedication on the part of all dental hygienists. The professional community must commit to using the NDHRA to guide research, enhance patient-centered care and foster other professional efforts. All dental hygienists, regardless of their practice settings and professional interests, must take ownership of the NDHRA. Achieving national health objectives should be an inherent part of their professional activities, both inside and outside of the research arena. This is especially important for practitioners, who provide the greatest representation of the profession to the public. The decisions that they make every day must be firmly grounded in knowledge that is obtained from research and clinical experience, to improve their professional judgment and ultimately, to improve the quality of services provided.

Integrating research throughout all facets of the profession requires significant dedication on the part of all dental hygienists.

Aim One

Create a research infrastructure and support the dental hygiene body of knowledge through coordinated research initiatives.

Recommendations

1. Critical Mass of Researchers/Scientists:

- Increase the number of dental hygienists with doctoral degrees in order to enhance funding opportunities.
- Increase the number of dental hygienists with doctoral degrees, with degrees in dental hygiene or other disciplines, including the basic and applied sciences, epidemiology, public health, health policy, education, and other professional degrees.
- Increase the number of dental hygienists serving as primary investigators in research, as well as the number of dental hygienists who are qualified to participate in research.

2. Identify Research Priorities:

- Commit to using the ADHA NDHRA to guide research and other professional efforts.
- Target research priorities related to health services, access to care/underserved populations, and health promotion/disease prevention to meet national health objectives.
- Encourage dental hygiene researchers to utilize interdisciplinary models of collaboration in research endeavors.
- Identify the status of current research endeavors.
- Identify the need for studies that replicate and validate existing bodies of work.
- Identify the need for conducting additional studies to expand upon what has already been learned.
- Utilize graduate dental hygiene programs as "centers" for investigation, with concentrated research efforts focused on particular fields of study. Using the NDHRA as a guide, these schools could serve as regional sites for multi-center research studies to conduct large-scale investigations that add to the body of knowledge.

3. Communication Systems to Promote Linkages:

- Create a uniform taxonomy that is used to define the language of the dental hygiene profession so that the literature can be indexed accurately in national databases such as, but not limited to, MEDLINE, PubMed, CINAHL, and HealthSTAR.

- Develop a consistent and reliable system to monitor the progress and outcomes of dental hygiene research.
- Develop a comprehensive database for information management that is utilized uniformly across the profession, and that reflects the scope of dental hygiene's body of knowledge.
- Complete the application process for the *Journal of Dental Hygiene* to be included in the Science Citation Index so that the authors and university employers can document the impact of their publications.

4. Funding for Research:

- Raise and provide funding for research projects that address specific priorities identified by the NDHRA.
- Sponsor training programs for dental hygiene investigators.

5. Valuing Research:

- Encourage all dental hygiene programs to adopt an educational philosophy that reinforces the importance of research in documenting the efficacy of practice, so that an appreciation and basic understanding for the process becomes an inherent part of the value system of each dental hygienist.
- Encourage all dental hygienists to apply the basic research skills of problem solving, critical thinking, and decision making to all professional activities.
- Create forums for dental hygiene researchers to present their work, share information, and exchange ideas for future projects with their research colleagues and other dental hygienists.

Aim Two

Increase the number and quality of dental hygiene researchers.

Recommendations

- Utilize articulation agreements that allow dental hygiene students to complete baccalaureate degrees and to facilitate their entrance into graduate schools.
- Educate dental hygienists to evaluate the scope, quality, merit, and utility of research used to guide evidence-based practice.
- Prepare dental hygienists to develop the skills necessary to apply an evidence-based methodology, including:
  - converting information needs into clinical questions so that they can be answered

Limited availability of research resources necessitates careful examination of and consensus as to the next steps for advancing professionalization.

  - conducting a computerized literature search with maximum efficiency for finding the best external evidence with which to answer the question
  - critically appraising the evidence for its validity and usefulness
  - applying the results of the appraisal or evidence in practice
  - evaluating their performance in applying an evidence-based methodology.

- Encourage dental hygienists, researchers, journal editors, journal reviewers, and educators to utilize and comply with the Consolidated Standards of Reporting Trials (CONSORT), international standards now being adopted by medical and dental journals, to improve the quality of the conduct and reporting of research studies.
- Create opportunities for dental hygiene educators to share effective strategies for teaching and mentoring research.
- Develop and implement ADHA-sponsored research development training workshops on topics such as the use of technology, information resources, library skills, and evidence-based teaching methodologies, offering these workshops online and/or as a component of professional meetings.
- Establish research as a career path in existing dental hygiene education programs at the master's degree and doctoral levels.

Aim Three

Integrate research in all facets of the profession.

Recommendations

- Utilize the NDHRA as the driving force behind the work efforts of the ADHA councils and the strategic plan of the association.
- Charge each ADHA council with identifying research needs, goals, and objectives related to their specific areas of interest from the NDHRA.
- Charge the Council on Research and the ADHA Institute for Oral Health Research Grant Review Committee with systematically managing the funded research conducted under their auspices in order to improve accountability in the tracking of research progress.
- Work collaboratively with the National Center for Dental Hygiene Research to maximize resources and work effort.
- Educate all dental hygienists in the scientific method so that they are

competent in searching and evaluating the literature and adopt an evidence-based philosophy.

- Advocate for increased dental hygiene research initiatives through federal agencies and other public and private funding sources.

Summary

Dental hygiene has an emerging research infrastructure that must be purposefully advanced and supported. To expedite the development of this infrastructure, the initial focus and funding of research efforts should be on the priorities identified from the NDHRA. Building an infrastructure is particularly critical for dental hygiene in today's health care environment. Limited availability of research resources necessitates careful examination of and consensus as to the next steps for advancing professionalization. However, achieving excellence in practice, the cornerstone of professionalization, is intricately tied to and dependent upon putting into place a viable structure for conducting research.

Education

With the many national calls for changing the oral health care delivery system and education of oral health professionals, it is important to revise the dental hygiene educational curriculum to prepare future dental hygienists to deliver quality oral health care to all segments of the U.S. population and to be responsive to an evolving health care delivery system.

Historically, the dental hygiene education curriculum was predicated on the delivery of oral health care through the private practice dental delivery system. Currently, significant segments of the U.S. population do not receive any oral health care through this traditional system. With the many national calls for changing the oral health care delivery system and education of oral health professionals, it is important to revise the dental hygiene educational curriculum to prepare future dental hygienists to deliver quality oral health care to all segments of the U.S. population and to be responsive to an evolving health care delivery system.

As the population ages and becomes more culturally diverse, overall health and oral health needs will become more complex, requiring health care practitioners to have a broad-based education. Health promotion and prevention of oral diseases, rather than the current focus on treatment of existing disease, also must receive considerable attention within the dental hygiene educational system.

Entry-level dental hygiene programs are currently offered in a variety of education settings such as schools of allied health, dental schools, community or junior colleges, and technical colleges and universities. Since 1990, there have been 95 new programs established, of which only two offer a baccalaureate degree.[14] Programs in educational settings that limit their length struggle to incorporate new content and techniques to enhance oral health care. As a result, curricula are overcrowded.

Workshops held throughout the 1990s and early 2000s addressed the need for a dental hygienist who is broadly prepared and has the necessary skills to cope with an accelerating pace of change. Conferences have identified the need to move toward the baccalaureate degree as the entry point for the profession with a universal core curriculum that integrates oral health with interdisciplinary studies.[15,16] The failure to standardize entry level at the baccalaureate level has had an adverse impact on the pace of development of advanced dental hygiene programs and the continued development of the dental hygiene body of knowledge. Given that some other professions and allied health professions have already moved beyond the baccalaureate degree as the entry to practice, dental hygiene must plan for the advanced degree as the entry to practice in the future.

A challenge facing dental hygiene is that accreditation standards for dental hygiene education are not established by the profession. Currently, dental hygiene education programs fall under the accrediting authority of the American Dental Association's Commission on Dental Accreditation (ADA CDA). ADA CDA consists of 30 individuals, with only one appointee made by organized dental hygiene. Other health professions and allied health professions control their own accreditation processes and standards through independent agencies recognized by the U.S. Department of Education.

Dental hygiene scholars are needed to lead the development of theory and knowledge unique to the discipline of dental hygiene. Currently, there is a shortage of dental hygiene faculty that is expected to increase as a result of program closures in university and dental school settings.[17] Doctoral preparation of dental hygienists is essential for building the dental hygiene knowledge base for advancing the professionalization process.

Aim One

Redesign dental hygiene curricula based on the increasingly complex oral health needs of the public.

Recommendations

- Evaluate the dental hygiene curriculum and create new models for entry level programs that address
  - oral health needs
  - training programs in community-based, underserved areas
  - community health and disease management
  - cultural competence
  - needs of special groups
  - health services research
  - public policy development
  - evidence-based research methodology and practice
  - collaborative practice models.
- Collaborate with appropriate professional organizations to advance awareness of faculty and dental hygiene education program leaders to embrace the need for curricular changes that reflect the oral health needs of the public.
- Conduct education workshops that focus on curricular advancements.
- Collaborate with appropriate organizations to design dental hygiene curricula that better reflect public health needs and the corresponding role of the dental hygienist.

Dental hygiene scholars are needed to lead the development of theory and knowledge unique to the discipline of dental hygiene.

Aim Two

Advance the educational preparation necessary for entering the dental hygiene profession.

Recommendations

- Implement the baccalaureate degree as the entry point for dental hygiene practice within five years.
- Create articulation agreements, degree completion programs, and distance learning technology as mechanisms for achieving the goal of implementing dental hygiene entry at the baccalaureate level so that the resources of associate programs continue to be fully maximized.
- Once the baccalaureate entry-level system has been established, create a 10-year plan for initiating the master's degree as the entry to practice.
- Conduct educators' workshops designed to address implementation issues for baccalaureate and master's degree programs.

Aim Three

Create an independent dental hygiene accrediting agency.

Recommendations

- Establish an independent third party to accredit dental hygiene education, recognized by the U.S. Department of Education, beginning with baccalaureate degree-completion programs and moving to accrediting master's degree programs. Over time, the agency would accredit all dental hygiene education programs.

Aim Four

Create a doctoral degree program in dental hygiene.

Recommendations

- Develop curricular models for both professional (doctor of science in dental hygiene) and academic (doctor of philosophy) doctoral programs in dental hygiene.
- Conduct educators' workshops at professional meetings to promote the development of doctoral programs in dental hygiene.
- Publish curricular models for doctoral programs in dental hygiene professional journals.

Summary

At this point in time, our education programs have not begun to address the research, public health, public policy, cultural, leadership, and funding challenges presented in the Surgeon General's Report. The current entry-level dental hygiene education model is limited by a curriculum that is narrowly defined with respect to content and length. As dental hygiene advances and the educational preparation for entry into the profession evolves, the dental hygiene curriculum must be redesigned to reflect those changes.

Dental hygiene must keep pace with professions such as teaching, occupational therapy, and physical therapy that have recognized the importance of advanced education as the entry to practice. As health care delivery systems change and the relationship between systemic disease and oral health becomes more defined, the demands for advanced-level practitioners will increase. The knowledge and skills of dental hygienists will need to expand. Curriculum modifications will need to be made to reflect these changes. Expanding the curriculum accordingly will allow dental hygienists to further develop the scientific basis for dental hygiene practice.

Ensuring high standards and quality education at all levels of dental hygiene education by the profession will afford dental hygiene the autonomy to adapt curricular changes as needed to meet the future health care needs of the public and the profession.

Developing curricular models for doctoral programs in dental hygiene will assist dental hygiene educators in creating quality programs that meet the needs of students, the profession, and the missions of colleges and universities. Providing advanced education specific to the discipline of dental hygiene will allow greater opportunities for advancing the art and science of the profession.

Practice and Technology

The creation of an advanced dental hygiene practitioner (ADHP) will require dental hygienists and dentists to work together in new ways in order to reach out to underserved populations.

Unmet oral health care needs have historically been a problem in the U.S. and will likely continue to be in the future. The primary factor in controlling oral diseases, including dental caries and periodontal disease, is the prevention of the disease. Often the lack of funding by state and federal governments to provide oral health services is cited as a continuing reason for the growing unmet oral health needs of the public. This trend will likely continue as our nation struggles to find a means to provide oral health services in an economically viable way.

In addition to the economic problems related to oral health care delivery, the lack of availability of oral health care providers is troubling. As previously noted in this report, the number of dentists is predicted to grow at a much slower rate (4 percent) compared to the projected growth of dental hygienists (43 percent).[11] This is expected to create a shortage in the number of practicing dentists. Dental hygienists' roles must continue to expand as the number of graduating dental hygienists increases and the number of graduating dentists decreases.

The dental hygiene profession has recognized the need to expand the traditional roles of dental hygienists through the creation of an advanced dental hygiene practitioner as a means to increase the public's access to preventive and therapeutic oral health services. Many areas of the country that lack the availability of dentists to provide restorative dental services could be better served by an advanced dental hygiene practitioner (ADHP) with the authority to provide not only preventive services, but also minor restorative services and refer patients with more advanced restorative needs on to a dentist. The creation of an advanced dental hygiene practitioner will require dental hygienists and dentists to work together in new ways in order to reach out to underserved populations. In addition, changes in state practice acts and educational programs will be required to assure that the public's diverse oral health care needs are met. Should these changes not occur, other professionals such as physicians and nurses will assume this role.

Meeting the demand for dental hygiene services is currently restricted due to limitations on the settings in which dental hygienists are legally allowed to practice and lack of direct reimbursement for dental hygiene services. To date, not all states allow for direct reimbursement to dental hygienists for services they

perform under the Medicaid program. Fiscal solvency is an important consideration for all oral health professionals as they attempt to reach out into the community to provide oral health care services. In order for dental hygienists to work as primary care providers, they must be able to receive direct reimbursement for services rendered.

The aging of the population, as well as the diverse cultural background of our society, will change the manner in which all health care professionals deliver services. The U.S. Bureau of the Census projects the number of Americans over the age of 65 will grow 17 percent by 2010 and 76 percent between 2010 and 2030.[18] Also, according to the Census Bureau, the Asian population is expected to more than triple to 33 million by 2050 and the African-American population will rise 71 percent to more than 61 million, but Hispanics will see the most dramatic increases, projected to grow by 188 percent, or to 102 million, or more than one-quarter of the American population.[19] In addition, consumers today are more technologically savvy, better educated, and demand a high return on their health care investments. Dental hygienists need to be better prepared to address the multi-faceted needs of our diverse population, especially the ever-growing segment of the elderly. Evidence-based, patient-centered care requires being more aware of the desires and needs of consumers, and possessing the ability to communicate effectively with all groups.

Information technology has transformed society and dental hygiene practice over the last 20 years. The Internet, mobile technology, and advances in medical diagnostic and therapeutic agents and devices have changed the way we live and the manner in which health care providers deliver services. In dental hygiene, lasers, digital radiography, caries diagnostic equipment, cordless handpieces, a variety of probes, and other innovations have changed the landscape of clinical practice.

As more technological advances occur, dental hygienists must use an evidence-based approach in evaluation. Dental professionals also have seen the direct application of knowledge gained from what is perhaps the greatest technological advance of our time: the Human Genome Project (HGP). Begun in 1990, the HGP aims to identify all the genes in human DNA, determine the sequences of the three billion chemical base pairs that make up human DNA, store the information in databases, improve tools for data analysis, transfer related technologies to the private sector, and address the ethical, legal, and social issues that may arise from the project.

Dental professionals also have seen the direct application of knowledge gained from what is perhaps the greatest technological advance of our time: the Human Genome Project.

As much as technological advances have affected the profession, genomes are positioned to revolutionize it.

Aim One

Create multiple levels of clinical dental hygiene practitioners with representative titles and appropriate levels of education and degrees.

Recommendations

- Change the title "dental hygienist" to reflect the expanding roles and responsibilities of the profession.
- Create a licensed advanced dental hygiene practitioner (ADHP) with advanced education and training to provide a wider range of services including, but not limited to, diagnostic, preventive, restorative and therapeutic services directly to the public.
- Create collaborative practice models for dental hygiene that include, but are not limited to, the following:
  - dental hygiene professionals working with medical teams, such as:
    - contracting with hospitals and private practices for in- and outpatient programs
    - primary care, ob/gyn, pediatric, and geriatric medical programs
    - transplant patient pre- and post-care
    - kidney dialysis support
    - pre- and post-cardiac care support
    - pre- and post-care oncology support
    - preventive and therapeutic care for physically and mentally disabled patients.
- Create alternative delivery models for providing dental hygiene services that include, but are not limited to, the following:
  - providing preventive and triage services in-house or on-site for businesses/corporations
  - working as administrators of oral health clinics with hygienists performing clinical procedures and supervising licensed and certified dental assistants
  - working in school-based/school-linked and college settings performing preventive services, routine examinations, and simple restorative procedures
  - working with portable equipment or in mobile dental vans performing preventive services, such as routine examinations, and simple restorative procedures
  - working in hospitals, chronic care facilities, and residential facilities performing preventive services, routine examinations, and simple restorative procedures

- serving as visiting dental hygiene professionals, and owning and operating home oral health agencies that provide dental hygiene services similar to "visiting nurses."

- Create curriculum models and competency certification systems for specialty areas, which include but are not limited to, the following:
  - pediatrics
  - geriatrics
  - periodontics
  - oncology
  - anesthesiology
  - public health
  - forensics
  - developmentally disabled
  - hospital dental hygiene.

Aim Two

Promote direct reimbursement to dental hygienists for services they provide.

Recommendations

- Advocate with third party payers—medical and dental—for direct reimbursement for dental hygienists.
- Work with state Medicaid directors to recognize dental hygienists as Medicaid providers.
- Develop insurance codes that appropriately reflect the dental hygiene process of care.

Aim Three

Develop a dental hygiene workforce that is able to meet the changing demographic and cultural challenges that will occur as a result of America's evolving population.

Recommendations

- Educate dental hygienists to meet the multiple care needs of the geriatric population.
- Develop education, techniques, and messages that are more consumer-focused in keeping with a client-centered approach to care.
- Increase the cultural diversity of dental hygiene professionals.
- Ensure that all dental hygiene professionals are culturally competent and able to communicate and deliver health care that is culturally sensitive.

Aim Four

Develop a dental hygiene labor force that keeps pace with the genetic revolution and other technological advances.

Recommendations

- Incorporate new technology in the curriculum of dental hygiene

education programs and professional continuing education.

- Educate dental hygienists about technological advances and their application to dental hygiene practice.
- Provide continuing education opportunities for learning and applying new technology for practicing dental hygienists.
- Activate the ADHA Task Force on Genetics to evaluate the innovations in genetics and their applications to the dental hygiene profession.
- Develop ethical and policy statements that address genetics.
- Develop tools to assist dental hygienists in understanding and addressing genetic issues.
- Develop innovative technologies to enhance health and wellness.
- Use an evidence-based approach to evaluate the efficacy of new technology for dental hygiene practice and its impact on health outcomes.

Dental hygiene must move from a mechanically based occupation to an evidence-based health profession.

Summary

As our nation addresses the unmet oral health needs of our citizens, it has become imperative for health professions to re-examine their roles and responsibilities in providing services to the public. The traditional method of providing dental hygiene services through private dental practices is inadequate to meet the oral health needs of the country, and must be expanded. The clinical practice of dental hygiene also must evolve as there are advancements in technology and science. Dental hygiene must move from a mechanically based occupation to an evidence-based health profession. New roles and responsibilities will develop for dental hygienists as technological advances, practice settings, and dental hygiene education and regulatory requirements evolve. The creation and implementation of an advanced dental hygiene practitioner (ADHP) is one method of increasing the public's access to preventive and therapeutic services provided by dental hygienists.

As new models of dental hygiene practice are developed, in addition to the traditional private practice model, dental hygienists will be able to meet the preventive and therapeutic needs of clients in a variety of settings. As primary care providers, they should receive direct reimbursement for the services they deliver.

The challenge of educating health care professionals to deliver evidence-based

care that is culturally sensitive will become increasingly more important as America's population becomes more diverse. In addition, as America's population ages, dental hygienists will have to adapt their practices to address this trend. Moreover, dental hygienists must be aware of consumerism's impact on their profession, including direct-to-consumer marketing, information technology, cost-competition in the health care marketplace, and client expectation of affordable, quality care.

The clinical practice of dental hygiene must evolve as advancements occur in technology and science. Dental hygiene must move from a mechanically based occupation to an evidence-based health profession. New roles and responsibilities will be created for dental hygienists as technological advances, practice settings, and dental hygiene education requirements evolve. Future decades will see technological advancements that will change and shape our society more quickly than ever before, as new information about human health and disease is discovered via the HGP. Dental hygienists must learn how to translate this new knowledge into clinical applications. The development of tools, ethical guidelines, and policies will assist dental hygienists in incorporating technological advances in all settings.

Licensure and Regulation

Professional regulation refers to the supervision of licensure and practice standards of professions by state government to ensure the health and safety of the public. Recognizing the purpose of regulatory boards, it is appropriate for the public to play a greater role in professional regulation. The wave of the future appears to be increasing the number of consumers participating in this process.

Today, dental boards are overwhelmingly composed of dentists who regulate both their own profession and dental hygiene. In most states, consumers and dental hygienists hold only a minority of seats on the board. Dental boards often make decisions based on the practice issues and economics of private dental offices and frequently tend to ignore dental hygiene concerns. Given the conflict of interest that occurs when employer dentists regulate their own employees, dental boards make frequent decisions that limit access to dental hygiene services.

It is imperative that new regulatory models be developed whose primary focus is dental hygiene.

Currently, a number of states have dental hygiene committees or varying degrees of self-regulation, but they exist in a largely advisory capacity. Given the situation, it is imperative that new regulatory models be developed whose primary focus is dental hygiene. A dental hygiene board would eliminate the conflicts of interest that exist today and foster greater emphasis on providing a delivery system that affords expanded access to dental hygiene services and oral health care.

In order to assure the public's health and safety and access to quality dental hygiene services now and in the future, it is critical that dental hygiene professionals have the authority to regulate themselves by determining educational requirements, practice standards, and competency assurance.

The urgency of expanding access to care is highlighted by the Surgeon General's Report, which indicates that a "silent epidemic of oral diseases is affecting our most vulnerable citizens—poor children, the elderly, and many members of racial and ethnic minority groups."[8] This disparity is exacerbated by dental workforce data that projects an oncoming shortage of dental practitioners. Concomitant to the numerical decline of dental practitioners, there is a progressive increase in the number of dental hygiene schools and their graduates. With accredited education, licensure, and a regulatory system already in place, dental hygienists are the logical

manpower resource to play a key role in addressing access to care. However, access to oral health care continues to be hindered in many states by restrictive supervisory requirements and the scope of practice limits.

Dental hygienists have created new models of regulation and care delivery that are safe, effective and allow for the continued referral of patients to dentists for further treatment. It is time to create further pathways for these competent practitioners to meet the oral health needs of American society. As these new regulatory models are created, one of the *future* issues that they will have to address is the assurance of competence for dental hygiene practitioners throughout their practice lifetimes.

Although existing state boards have focused substantial resources on assessment of entry-level competence, *continued* competence has been addressed only indirectly, primarily by mandatory continuing education requirements, which were in effect in all but three states in 2002. There is growing public interest in continued competence as evidenced in a 1998 report from the PEW Foundation that recommended:

"States should require that their regulated health care practitioners demonstrate their competence in the knowledge, judgment, technical skills and interpersonal skills relevant to their jobs throughout their careers."[20]

The greatest barrier to broad-scale implementation of such requirements is an efficient, readily available mechanism to assess all practitioners periodically and screen out those who need closer scrutiny. It is generally recognized that state boards of dentistry have neither the resources nor the manpower to periodically reassess the competence of all practitioners using the traditional clinical assessment mechanisms.

Dental hygienists should be actively involved in both the development and administration of a continued competence mechanism for dental hygiene. Being well prepared for the implementation of continued competence will be an important factor in the realization of self-regulation for dental hygiene.

Aim One

Implement a dental hygiene regulatory environment governed by a majority of dental hygienists with consumer representation that ensures the health and safety of the public, and enhances access to care.

Dental hygienists should be actively involved in both the development and administration of a continued competence mechanism for dental hygiene.

Recommendations

- Achieve self-regulation in all states.
- Publish examples of models of dental hygiene self-regulation, with analysis of what has been learned and how these models have benefited the oral health of the public.
- Enhance the ability of dental hygienists to interpret and enforce the statutes and rules, setting requirements for licensure, re-licensure, and specialty certification.
- Advocate for dental hygienists to interpret and maintain standards of practice and determine the assessment of professional competence.
- Require graduation from a formal, accredited, post-secondary dental hygiene program as a prerequisite for licensure in all states.
- Establish the dental hygiene license as the prerequisite for providing those services requiring the professional skills, judgment, and education of a dental hygienist.

Aim Two

Implement a practice environment for dental hygienists that expands scope of practice, practice settings, and licensure mobility, and eliminates supervision requirements.

Recommendations

- Achieve greater mobility to move from state to state without interruption in the ability to practice.
- Remove restrictive supervision laws that prevent dental hygienists from providing oral health care services.
- Create uniformity in the scope of practice from state to state.
- Educate dental hygiene students to function in all practice settings.
- Collaborate with organized dental groups, dental public health, and/or public health agencies to create new models for the delivery of care that demonstrate dental hygienists can safely and effectively provide competent care in unsupervised settings.

Aim Three

Develop assessment methodologies to determine initial and continued competence of dental hygienists in the knowledge, judgment, technical skills, and interpersonal skills relevant to their jobs.

Recommendations

- Develop and promote innovative assessment methodologies to assure that applicants for dental hygiene

licensure have fulfilled standards of competency for entry into the profession of dental hygiene.

- Develop and administer a system to certify dental hygienists with advanced and/or specialized skills, and document that they have fulfilled standards of competency to provide those services.
- Develop policy recommendations and methodologies for a system of continued competence that is relevant and appropriate for dental hygienists. As the public and/or legislative demand for continued competence grows, dental hygienists should be prepared to provide guidance to dental hygiene regulatory agencies.

Summary

In most states, the board of dentistry is an arm of state government, is accountable to the legislature, and has as its sole purpose the protection of the public. However, the distinction between protecting the public and protecting the profession is often poorly understood by the practicing profession. The scope of practice for dentists is fairly uniform across the country, but the scope of practice for dental hygienists varies greatly from state to state.

Self-regulation would eliminate the conflict of interest that exists today when employer dentists regulate their own employees and allow for greater emphasis on providing a delivery system that affords expanded access to dental hygiene services and oral health care.

Dental hygiene as a profession should take the lead in bringing together oral health stakeholders including practitioners, educators, researchers, regulators, third-party payers, health policymakers, and consumers who possess the expertise to create new pathways for competent practitioners to meet the oral health needs of society.

There is growing public interest in continued competence for health professionals and some professions are beginning to address methodologies for assuring continued competence. Dental hygienists should be actively involved in both the development and administration of a continued competence mechanism for dental hygiene.

Public Health

Poor children experience twice as much dental disease than their more affluent peers and are more likely to suffer severe consequences due to lack of treatment services.

Much has been written about the current state of the dental public health workforce in the U.S. and what actions are needed to enhance its capacity and capability to address the significant oral health problems facing the entire nation. With growing attention to and concern for the future of the dental public health workforce, policy makers will be faced with difficult challenges related to gaps in oral health care and the expanding role of public health dental hygienists in the future.

Dental disease continues to exist in America with profound disparities among our nation's most vulnerable groups. Dental disease experience is disproportionate. Minority, low-income, certain special care (e.g., elderly, disabled) and medically underserved populations, as well as many who live in rural communities, suffer from oral pain and disease due to an inability to access oral health care services in a timely manner. Poor children experience twice as much dental disease than their more affluent peers and are more likely to suffer severe consequences due to lack of treatment services. Between the ages 6-8, 26 percent of white children have untreated dental disease compared to 36 percent of African Americans and 43 percent of Hispanics. Low-income children suffer nearly 12 times more restricted-activity or lost days from school than children from higher-income families. For adults over age 65, nearly one-third has untreated cavities and 13-39 percent is edentulous.

The Surgeon General's Report speaks to a number of public health interventions that have served to improve the oral health of Americans over the last half century. Among them are community water fluoridation and school-based and school linked dental sealant programs. Both programs are generally administered through state Offices of Oral Health and are aimed at preventing dental disease at the state and local levels. Dental hygienists participate in these programs by coordinating efforts, managing programs and by providing education and technical assistance. These preventive efforts have historically received federal support. In recent years, however, public funds have become less available and states have been forced to downsize oral health programs, reducing capacity and limiting full-time professional leadership and adequate staff to implement programs.

The *National Call to Action to Promote Oral Health* (*Call*) provided the impetus for the re-birth of state programs to develop

state oral health plans that will move the national agenda forward. The *Call* has identified five action steps: Remove Barriers; Change Perceptions; Build Infrastructure; Expand the Science Base; and Build Partnerships. It is estimated that implementation of these steps on the national, state, and community levels will serve to promote and enhance the oral health of all Americans.

The dental hygiene profession as an organization of health care providers needs to recognize and interface with the national agenda. As state oral health plans unfold, it will be critical for both the profession as a whole and dental hygienists as individuals to position themselves at the forefront to provide direction and leadership. The opportunity for progress is here and potential for growth and development is bountiful. With oral health change at hand, hygienists may now maximize their opportunities to provide technical expertise and skills to meet the demands of the nation's poor.

Aim One

Increase the number of dental hygienists with training in public health and those with graduate degrees in public health.

Recommendations

- Promote and improve public health competency in education, research, and practice.
- Train dental hygienists to use appropriate, standardized methodologies to document and evaluate the efficacy of public health interventions in addressing oral care needs (e.g. cost:benefit analysis of dental hygiene services rendered).
- Establish cultural competency as an educational priority for dental hygienists as they seek to promote and improve oral health for minority populations.
- Recruit and support more students from diverse backgrounds, including the underserved. Establish financial incentives for minority dental hygiene students.
- Expand state-supported scholarship and loan forgiveness incentive programs to include dental hygienists at all levels of dental hygiene practice.
- Expand community service models to provide students with adequate experience in community-based health settings serving diverse

With oral health change at hand, hygienists may now maximize their opportunities to provide technical expertise and skills to meet the demands of the nation's poor.

populations, including low-income groups.

- Establish a standardized core public health curriculum for dental hygiene programs that includes use of competencies and outcome measures.
- Establish the master's in public health as the credential for employment in public health leadership/government positions.

Aim Two

Increase the number of dental hygienists working in leadership positions and policy settings.

Recommendations

- Partner with the larger health care community to establish an ongoing multidisciplinary leadership collaborative that addresses population-based public health issues and reinforces the public dental health workforce.
- Encourage hygienists to assume leadership roles in developing and directing community–based oral health education and oral health initiatives.

Aim Three

Increase access to oral health care services by expanding the dental hygiene public health workforce.

Recommendations

- Advocate for the inclusion of an advanced dental hygiene practitioner as an integral member of the dental hygiene public health workforce.
- Promote reciprocity of dental hygiene credentials by all licensing boards so that dental hygienists may relocate more readily to underserved areas.
- Acquire Medicaid dental provider status for dental hygienists.
- Guide the expansion of model stationary and mobile public dental clinics operating in underserved communities.
- Develop and utilize the case-management approach to assure access. Contracted dental hygienists should collaborate with school nurses; Head Start representatives; health services managers; Women, Infants, and Children nutritionists; School-Based Health Center nurse practitioners; and others to identify children at risk, those in need of

care, and to provide the appropriate referral.

Summary

The persistent lack of access to basic oral health care by many sectors of the population demonstrates the failure of the dental profession to assure oral health for all Americans. The shortage of public health dentists and hygienists is growing and the cultural makeup of the dental workforce is generally not reflective of diversity in the population.

A marked decline in the supply of dentists in recent years, and a projected decline in dental school graduates, raises major concerns about the adequacy of the dentist workforce to address unmet oral health care needs. The increasing supply of dental hygienists and their contribution to increased productivity in dental practices suggest that their role in both private and public dental care is significant and warrants greater attention, as well as increased professional and public support. We must work to encourage more of these hygienists to work in public health settings.

As the oral health needs of the nation increase, dental hygienists will need to become more knowledgeable and skilled to help to meet the demand for services. Dental public health curriculum and community service components in dental hygiene school programs will need to be more fully developed to adequately prepare students to work in public health settings.

As the future unfolds, hygienists will be leading the way in oral health care providing guidance to non-dental health providers and other non-traditional partners.

In addition, funds at the state and federal level, which are currently inadequate for education, public oral health care services and for the provision of services to low-income populations, will need to be increased and more readily available to hygienists for the provision of oral health care services.

Finally, state and federal policy changes addressing oral health care services for Medicaid, low-income and other special population groups will need to be implemented, so that the American public may fully access those oral health care services to which they are entitled.

Government

The contributions of dental hygienists within government agencies may be made as clinicians, administrators, researchers, and community-based educators or change agents.

Dental hygienists should take advantage of opportunities to serve at all levels of government to administer programs that provide access to care for the public, impact and interpret the laws that regulate the profession, and improve the oral health of the nation. The contributions of dental hygienists within government agencies may be made as clinicians, administrators, researchers, and community-based educators or change agents. In many of these positions, dental hygienists use the public health principle of ensuring the "greatest good for the greatest number" and often use population-based approaches rather than relying on the private practice model of individualized patient care.

Aim One

Increase the number of dental hygienists employed at all levels of government—federal, state, and local—who are able to influence policies and programs, and provide leadership to improve the oral health and general health of the public.

Recommendations

- Increase the number of dental hygienists serving at all levels of government in all branches as follows:
  - Increase the number of dental hygienists with graduate degrees working in government settings.
  - Increase the number of dental hygienists participating as providers in state or local publicly- or government-funded programs such as Medicaid and the State Children's Health Insurance Program.
  - Increase the number of dental hygienists serving in the armed forces as clinicians and administrators.
  - Increase the number of dental hygienists serving as elected and appointed officials.
- Encourage dental hygienists to pursue master's and doctoral degrees in disciplines, such as public health, public administration, business, health policy, and research, so they are well trained to attain roles in government. Promote distance- and Web-based courses as a way of pursuing higher education.
- Develop a public policy focus in undergraduate dental hygiene programs, including standardized curriculum with competencies.
- Increase opportunities for dental hygiene students and dental hygienists to participate in

internships and practicums that can be conducted at all levels of government.

- Develop a recruitment plan integrating strategies that are comprehensive and responsive to diversity to encourage more dental hygienists to pursue employment in federal, state, and local government.
- Expand loan repayment and tax incentive programs for hygienists serving in state and federal programs.
- Seek changes in state practice acts to increase access to preventive dental hygiene services for underserved populations by removing restrictive supervision barriers and expanding scopes of practice.
- Influence legislation that allows dental hygienists to be Medicaid providers, in order to increase access for underserved populations.
- Encourage and support dental hygienists to run for United States Senate, Congress, state legislatures, and other elected offices.
- Encourage government funding agencies to support research studies that assess the costs, benefits, and outcomes (health services research) of dental hygiene services in addressing public oral health care needs.
- Train dental hygienists to apply for funding to conduct research studies that utilize appropriate, standardized methodologies to document and evaluate the costs, benefits, and outcomes of dental hygiene services rendered to the public.

Summary

Dental hygienists have a significant opportunity to have an impact at all levels of government in order to improve the oral health of the public. Two common characteristics that the varied government-related positions share is a focus on programs that are population-based, and the need to use research data, both for program planning and for evaluation. As government systems require accountability for the use of public funds, any decision-making must be supported by current relevant data. Government programs must present evaluation data that demonstrate the appropriateness and efficacy of chosen strategies, and document that allocated resources have been used most judiciously. As most governmental programs do not have enough resources to treat all diseases that occur, they must focus on reducing disease through primary prevention and on changing norms through health promotion, disease prevention, and policy initiatives, which are the most cost-effective approaches.

Conclusion

Americans face an epidemic of oral diseases. Dental caries and periodontal disease, respectively, continue to be the major cause of tooth loss in children and adults, while more than 27,000 cases of oral and pharyngeal cancer are diagnosed each year.

In addition, many research studies have demonstrated that periodontal disease is a potential risk factor for a number of diseases and conditions—heart and lung disease, diabetes, and pre-mature and low birth-weight babies—making poor oral health an element in life-threatening health problems responsible for the deaths of millions of Americans each year.

Despite this critical situation, almost half of Americans do not receive regular oral health care.

Add to this an increasingly serious oral health care manpower crisis and a lack of access to oral health care for certain segments of the population reaching crisis proportions, and it is obvious that something has to be done. Given the current disparities in access to oral health care and the expected worsening shortage of dentists, it is easy to see that maximizing the services dental hygienists are educated to perform—promoting expanded practice settings and removing restrictive supervision requirements—is essential to the current and future health of the nation.

With accredited education, licensure, growing numbers of dental hygienists, and a regulatory system already in place, dental hygienists are the logical oral health care providers to play a key role in responding to the oral health care challenges facing the nation.

It is clear that in order to promote total health, the public needs comprehensive preventive oral health care. Dental hygienists are the health care professionals with the knowledge and skills best suited to meet these needs. Legislators, state regulators, and other health entities must capitalize on the opportunities dental hygienists offer and utilize them more effectively.

In addition, the profession itself must embrace change, focus on growth and development, and plan for its future as well as the future oral health needs of the public.

Dental hygienists are the logical oral health care providers to play a key role in responding to the oral health care challenges facing the nation.

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The Dental Hygiene Faculty Shortage: Causes, Solutions and Recruitment Tactics

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Abstract

Purpose: Peer-reviewed professional publications were examined for pertinent information associated with faculty shortages in the dental professions. The review found 6 suggested causes, including inadequate compensation, lack of diversity amongst faculty, inadequate mentoring for new faculty, lack of modeling to prospective dental hygiene educators, little awareness of faculty shortages and lack of institutional support for dental hygiene faculty. The causes and solutions for faculty shortages and recruitment tactics employed by parallel professions were evaluated to determine their applicability to the dental hygiene faculty shortage. There remains a scarcity of information regarding dental hygiene faculty shortages and how dental hygiene programs and institutions should address such shortages.

Keywords: dental hygiene, faculty shortage, education, mentoring, diversity, compensation

This study supports the NDHRA priority area, Professional Education and Development: Evaluate the extent to which current dental hygiene curricula prepare dental hygienists to meet the increasingly complex oral health needs of the public.

Introduction

Perceived causes and suggested solutions for the dental hygiene faculty shortage play a role in America's access to care problem. The ability of an individual to obtain dental care is known as access to care.[1] The lack of access to dental care gained national prominence in May of 2000 when the U.S. Department of Health and Human Services published the United States Surgeon General's National Call to Action to Promote Oral Health.[2] The American Dental Education Association (ADEA) believes dental educators should promote and ensure access to effective oral health care,[3] and as debates regarding solutions are ongoing, the general consensus is that reversing the trend of faculty shortages would create more dental care providers, and thus alleviate the access to care problem.[1-3] This literature review focuses on the dental hygiene faculty shortage. Current peer-reviewed publications were examined for pertinent information associated with faculty shortages in the dental professions.

Review of the Literature

Faculty shortages affect both students and patients.[4] Some of the reasons faculty positions remain open are too few applicants, more faculty members leaving academia than entering and faculty members moving into private practice.[5,6] Information assessing dental hygiene educators reveals almost half of full-time faculty members are approaching retirement age, which is expected to create vacancies within the next 10 years.[5-8]

Shortages may stem from dental hygienists lacking the education needed to become effective educators.[8,9] According to the Commission on Dental Accreditation, dental hygiene educators should possess a minimum of a baccalaureate degree.[10] Many educational settings require full-time faculty to hold at least a master's degree.[8] Careers in academia require skills and knowledge that are not included in entry-level dental hygiene programs, which establishes the necessity for more baccalaureate and masters level dental hygiene programs.[8,9] The conversion of existing associate degree dental hygiene programs to baccalaureate degree is also needed to address the dental hygiene educator shortage.[8]

Compensation

Compensation differences between private practice and dental hygiene educators may be a reason for the dental hygiene faculty shortage.[8] Some educational settings offer salaries lower than what practicing dental hygienists earn, which may result in fewer dental hygiene graduates pursuing careers in education.[9] New graduates prefer clinical practice over academia because the remuneration in education is inadequate to cover their outstanding debt loads.[6] Disclosures of benefits not available to practicing dental hygienists, such as predictable

and stable income, extended time off, retirement and paid medical and dental insurance, should be offered to prospective educators.[6] Academia offers a stimulating intellectual environment, satisfaction from teaching, textbook writing, lecturing, patentable research, continued education and faculty practice opportunities.[4,6] Undergraduate dental hygiene students should be supplied with information about how graduate education can lead to faculty positions and potential paid memberships to ADEA and the American Dental Hygienists' Association, continuing education, uniform allowances and malpractice and licensure fees.[8,9,11]

Diversity

The lack of diversity among faculty may contribute to the lack of diversity among dental hygienists. Ninety-four percent of full-time baccalaureate dental hygiene faculty members are Caucasian, and 96% are female.[8] Eighty-nine percent of dental hygiene program directors (n=203) reported 0 to 5% of the student population were male, and 21% were minorities.[5] Suggestions to recruit minorities include using television, radio and print media to recruit diverse ethnic, racial and gender groups.[8]

ADEA formed the Center for Equity and Diversity and the Section on Minority Affairs to advance diversity in dental professions, develop comprehensive strategies to increase minorities in dental professions and invite various presidents of organized dentistry and dental hygiene to define and discuss minority issues.[12] Organizations such as the National Dental Association and the National Dental Hygienists' Association represent African American dental professionals and serve as a recruitment tool for minorities in the dental professions.[13,14]

Mentoring

Health care professions have defined a mentor as a person who guides another by being a teacher, role model, advisor, counselor and coach.[15-18] Advancement of the less experienced individual's personal and professional life is a recurring premise of mentoring.[15-20] Thorpe and Kalischuk developed the Collegial Mentoring Model for nursing, described as a friendship-based, collegial relationship promoting honest and open communication over an extended period of time.[18] A case-based analysis by Glickman et al discusses mentoring as 1 of 3 human relations fundamentals, along with motivating people and performance counseling.[21] Mentors must possess special qualities such as experience, commitment to the role as mentor, acceptance, guidance and nurture of the protégé, being approachable, good interpersonal skills, a sense of self-confidence, faculty camaraderie, generosity, competence and a commitment to the mentor/protégé relationship.[16,20,22]

Reviewing the literature revealed that the nursing profession utilizes mentoring in several different venues, from mentoring the neophyte faculty member, utilizing the College Mentoring Model for peer mentoring, to mentoring interested undergraduate students towards a career in academia.[16,19,23,24] Dental educators use mentoring in the same manner as nurses.[21,25-27]

Although research demonstrates the benefits of mentoring and the continued need for formal or informal mentoring of faculty members, the existing dental hygiene publications related to mentoring focus on faculty development of academic careers or research, and not faculty recruitment and retention.[15,16,19,21,28-31] Blanchard and Blanchard indicated 26% of dental hygiene programs were actively pursuing student mentorship to facilitate student transitions into clinical practice or other career fields.[32]

Obstacles dental hygiene faculty encountered were lack of formal structure and evaluation of the mentoring experience, variable mentor quality, lack of resources and inadequate support.[32] Dental hygiene faculty are receptive to mentoring their undergraduates, but reported inadequate time in the existing curriculum, lack of faculty to administer the program, lack of mentor volunteers, no perceived need for implementation and heavy workload as reasons for not implementing a formal mentoring program.[31,32] Results from one survey revealed divisions in opinion regarding the addition of formal mentoring programs, with 43% (n=43) in favor and 54.4% either opposed (n=36) or answering "maybe" (n=20).[32] Interestingly, a similar survey of dental hygiene program directors indicated a positive correlation between length of mentoring experiences of the director and job satisfaction.[31]

The importance of influencing undergraduate students towards an academic career is a recurring theme in the literature when considering mentoring as a solution to the dental hygiene faculty shortage.[16,20,22,27,28,32-36] Barnes noted that recognizing and mentoring undergraduate students and promoting the pursuit of a career in academia should be used as a recruitment tactic for new faculty.[33] A survey of Canadian dental hygiene faculty regarding suggestions and topics for attracting new faculty included responses such as peer teaching, role modeling, mentoring, providing information about higher education, advertisement of higher education dental hygiene programs, courses discussing career options and encouragement of students toward pursuing academic careers.[29]

Role Modeling

Since students' perceptions about dental hygiene faculty becomes their beliefs, incidental learning about faculty life must be provided in a positive light, hopefully inviting students towards an academic career.[23,28,34] Rosenfield notes modeling is a double-edged process, not entirely in the control of the faculty member. A difference in practicing dental hygienists and dental hygiene faculty may influence the perception of students. Dental hygiene students might perceive themselves as resembling dental hygienists in private practice instead of dental hygiene faculty.[28]

Another reason students feel they

don't resemble dental hygiene faculty is the difference in age between dental hygiene faculty and students. Bertolami et al makes the point that a mentor/role model loses effectiveness if they are significantly older than their protégé.[34]

The educators affecting dental hygiene students may be projecting the message that dental hygiene education is not interesting, important or fun. The effects frustrated faculty have on students are noted in Trotman's study of dental students (n=30).[35] The student interviews revealed few examples of full-time faculty that made academic careers look attractive. Students perceived there was no incentive for teaching, and full-time faculty were pulled in too many directions while part-time faculty were viewed more as role models.[35]

A survey evaluating the emerging workforce of nurses' (early to late 20s) preferences for faculty compared to responses from the entrenched nursing workforce (between ages 40 and 68) suggests a divide in faculty perception of students' preferences for faculty behavior. The top 3 answers of the well-established nursing workforce were clinical competence, approachability and a caring attitude, while emerging nurses listed approachability, good communications skills and professional attitude, respectively.[36]

Awareness

A potential cause of the current dental hygiene faculty shortage may be a lack of awareness of the problem, as well as a lack of perceived opportunities, especially among students enrolled in undergraduate dental hygiene programs.[11,37] To create awareness of this issue, students should have the opportunity to explore career opportunities outside of the traditional curriculum, which typically directs students towards private practice.[11] With most dental hygiene programs, there is evidence of a lack of emphasis on encouraging careers in academia, and students only have an abstract concept of teaching and research.[11] When dental educators ask dental students to consider academic career aspirations, they are encouraging them to make a career decision completely different from their initial career plan of clinical practice.[34]

Imprinting students early with the idea of becoming an educator and assisting in financing their education can enhance recruitment of future educators. In addition, educators should try to attract individuals who are interested in teaching as a moral vocation, with the goal of encouraging a career that may not be as lucrative, but more satisfying on a personal level.[34]

Students do not choose academic paths for various reasons. Financial compensation, the lack of interest in academia from the educational culture and students inability to make long term career decisions are all contributing factors.[38] Students do not possess the knowledge or information necessary to make an informed decision to pursue a career in education.[39]

Evidence suggests the dental profession as a whole does a good job of promoting the benefits of private practice, but this message is not conveyed regarding an academic career.[38] Solutions exist to help address the lack of encouragement to pursue a career in academia. One solution would be to implement programs promoting both research and academic careers. Elective courses allowing students to experience teaching, including developing their own "micro course," gives students exposure to a career in academia. An elective course, "Hands on Experience of Future Dental Educators," was offered as an apprentice teaching experience at the UCLA School of Dentistry in 2000. Based on the feedback of student teachers (n=21) who participated in the elective course, the majority indicated it was a positive and rewarding experience. All but 1 of the student teachers indicated they would like to incorporate teaching into their future plans. This study suggests the positive impact of the student teaching experience and could be incorporated into dental hygiene curricula.[37]

The ADEA task force on the Status of Allied Dental Faculty argued dental hygiene faculty shortages, as well as demands for researchers, can be attributed to the small number of master's programs in dental hygiene.[39-41] The recommendations from the task force included the use of technology to maximize faculty resources, loan forgiveness incentives and alternate ways of rewarding faculty.[39]

Institutional Support

Lack of institutional support through faculty development is another problem contributing to dental hygiene faculty shortages. Faculty development is crucial in promoting academic excellence.[41-46] Due to competing research and clinical priorities, medical and allied health education does not get the attention needed to improve teaching or encourage scholarships for education.[43] One approach utilized in several medical universities includes the implementation of formal faculty development programs.[41] These have been referred to as grass roots programs,[47] Medical Education Scholars Programs[42] and Academies.[48] Goals of these programs were to enhance teaching methods, promote the scholarship of teaching, enhance curriculum development, enhance assessments development, promote advising and mentoring and promote executive leadership skills.[41-43,47,48]

One such program used to address improving teaching and encouraging scholarship of education in the health sciences was conducted at West Virginia University.[43] Led by university administrators and a committee of teachers from the preclinical and clinical faculty programs from the schools of dentistry, medicine, nursing and pharmacy, a "cross-discipline Health Sciences Teaching Scholars Program" was developed.[43] Beginning as a weekly face-to-face program, this evolved into a combination online web course with 1 hour weekly face-to–face meetings. Results of the program indicated the online discussions encouraged thinking about the subject manner beyond the

classroom hours. Due to the availability of online access, learning was reinforced, and for the presenters of the online modules, web development skills were enhanced. As the program evolved, participation increased due to wide access of the internet, allowing greater flexibility for clinical faculty.

Other methods cited for faculty development include a 7-tier hierarchy developed by Ullian and Stritter, which includes individual activities such as self-assessment, observation of "exemplary practice" videotapes, shadowing experienced or exemplary teachers, being videotaped while teaching and receiving feedback, journal clubs, lunch-and-learn discussion groups, rewarding teaching effectiveness for new and junior faculty and tuition support for faculty to participate in graduate programs in education.[45]

The outcomes of these faculty development programs revealed an increase in enthusiasm for teaching, educational research, publications of educational abstracts, editorials, chapters and books and an increase in presentations about education at professional association meetings.[46] Although these faculty development programs have been successful, they have not been encouraged in health sciences.[48] Inclusion of faculty development programs may ultimately result in improved teaching performance and better outcomes for students.[49]

Conclusion

Methods to address the dental hygiene faculty shortage are multifaceted. A combination of a situational approach using the suggestions discussed in this paper may provide successful alleviation of the problem at individual institutions. Experimental programs addressing the recruitment of diverse faculty members are also needed. Information regarding dental hygiene students and mentoring is not readily available. Research is needed to assess current dental hygiene programs and their use of formal or informal mentoring programs, their implementation of the programs and their rate of success or failure. By creating awareness of the dental hygiene faculty shortage problem, identifying new approaches may become easier. Another step towards addressing the faculty shortage is to gain the acceptance and enthusiasm of entities willing to make the changes needed to alleviate the shortage. Although these approaches may be beneficial, the need for additional research relating to the dental hygiene faculty shortage is necessary. It is critical for current faculty members to address the dental hygiene faculty shortage and encourage curriculum reform to aid the movement for faculty development and recruitment both within their dental hygiene programs and through their local dental hygiene associations. With increased knowledge of the approaches available to address the issue and action on the part of dental hygiene professionals, educators and institutions throughout the country, the dental hygiene faculty shortage may be alleviated in the future.

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