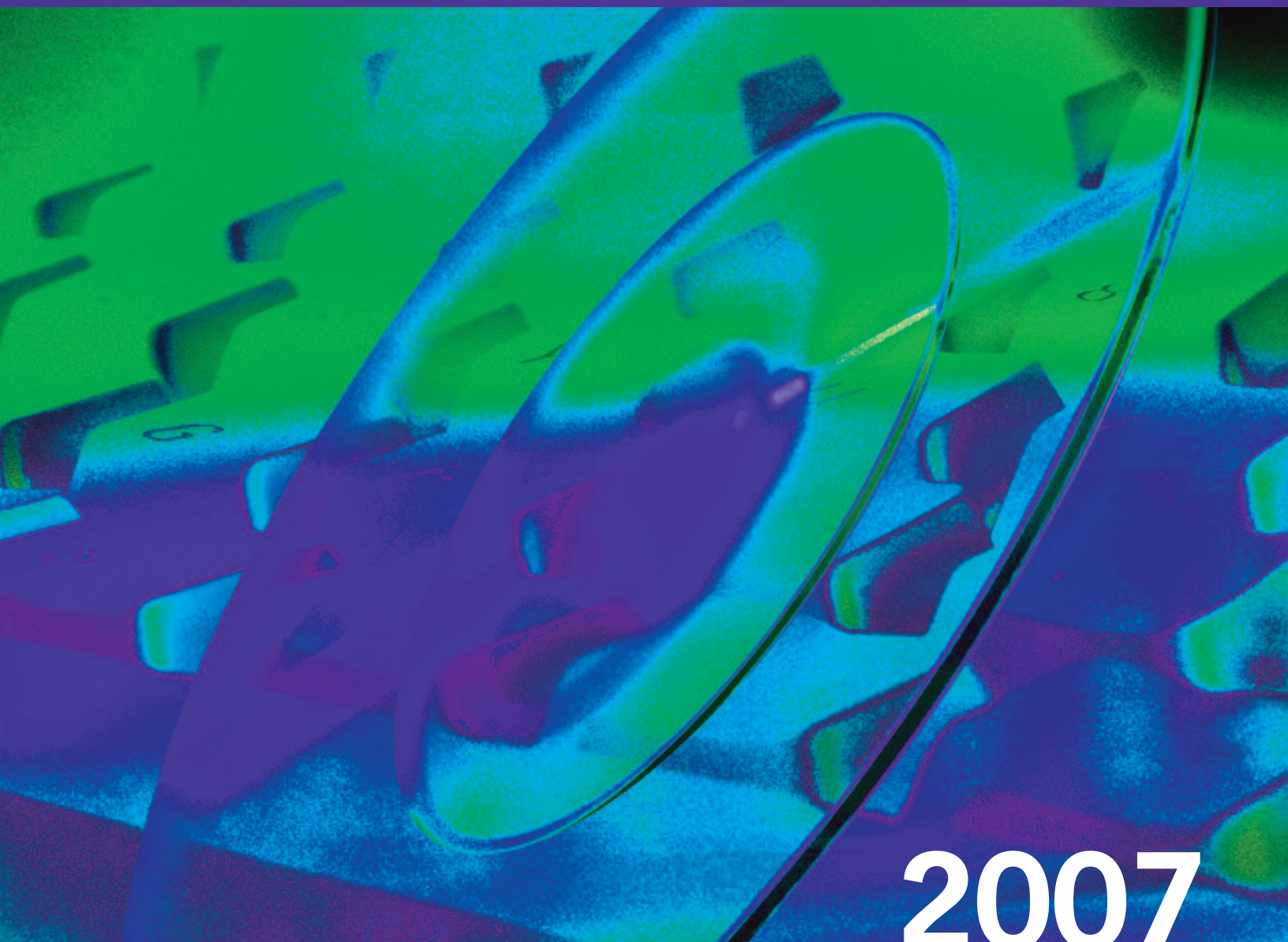


Survey of Dental Hygienists in the United States

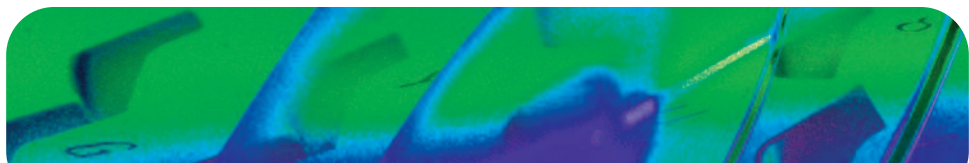
Executive Summary



2007



American
Dental
Hygienists'
Association



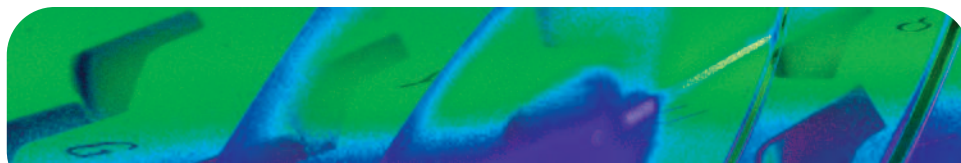
This study was conducted by the Center for Health Workforce Studies at the School of Public Health, University at Albany (the Center) for the American Dental Hygienists' Association. The report was prepared on behalf of ADHA by the Center. Research for this report was funded in part by a grant from the Dental Trade Alliance Foundation.

Survey of Dental Hygienists in the United States, 2007: Executive Summary

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Preface

In the spring and summer of 2007, the Center for Health Workforce Studies (the Center) at the School of Public Health, University at Albany, funded by the American Dental Hygienists' Association (ADHA), conducted a sample survey of licensed dental hygienists in the 50 states and the District of Columbia to learn about their personal demographics, prior and current education, current employment, continuing education, membership in professional associations, job market, job satisfaction, and attitudes and opinions about current issues in dental hygiene. This report summarizes the survey responses and presents a variety of information about this important workforce.

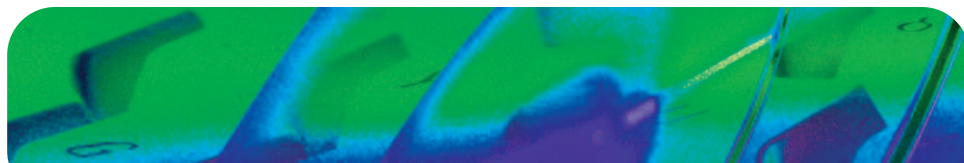
A longer report is available that provides additional details based on the survey responses. That report [Langelier and Wing, 2008], which includes a copy of the survey questionnaire, is expected to be distributed in the summer of 2008.

This summary report was prepared by Margaret Langelier and Paul Wing of the Center staff, with assistance from Tracey Continelli. The authors are indebted to the dental hygienists who took the time to complete the survey. The survey design and execution was facilitated by Gaetano J. Forte, the survey manager for the Center. The authors acknowledge the contributions of McKenzie Smith, director of research, and others at ADHA, to both the design of the survey questionnaire and the content of the report. The contributions of a formal advisory committee are also gratefully acknowledged. Responsibility for the accuracy of the report rests solely with the authors.

The Center was established in 1996 to collect, analyze, and present data about health care workers to inform provider, professional, government, and education organizations; policy makers; and the public. Today, the Center is a national leader in the field of health workforce studies. It supports and improves health workforce planning and access to quality health care through its collection, tracking, analysis, interpretation, and dissemination of information about health professionals at the national, state, and local levels. Additional information about the Center can be found on its Web site: <http://chws.albany.edu>

The American Dental Hygienists' Association (ADHA) was formed in 1923 to develop communication and mutual cooperation among dental hygienists. Today, ADHA is the largest national organization representing the professional interests of approximately 150,000 registered dental hygienists (RDHs) in the United States. Additional information about the ADHA can be found on its Web site: <http://adha.org>.

Questions about this report or the Center can be directed to Ms. Langelier or Dr. Wing at 518-402-0250. Questions about the larger Dental Hygiene Masterfile Study can be directed to McKenzie Smith at 312-440-8900.



Master File Project Advisory Committee

A panel of experts, the Master File Project Advisory Committee (MPAC), has provided valuable guidance and support for this survey, and for the larger study of which it is a part. A list of those involved on the committee is provided below. The MPAC has actively participated in all aspects of this study since its inception in 2006, including survey design, report review, and tactical and strategic guidance. Their contributions are gratefully acknowledged.

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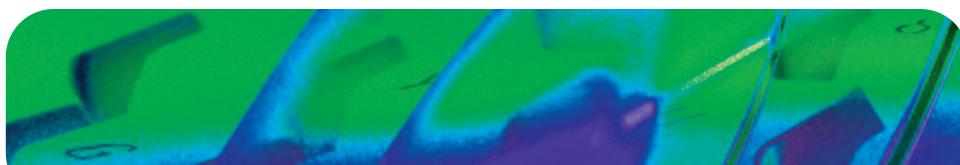


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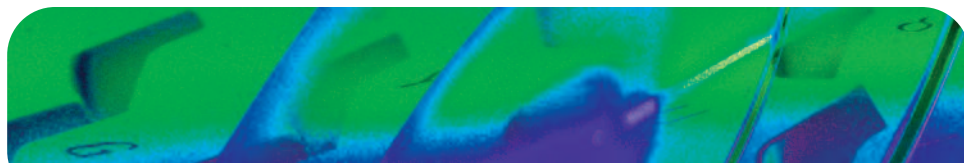
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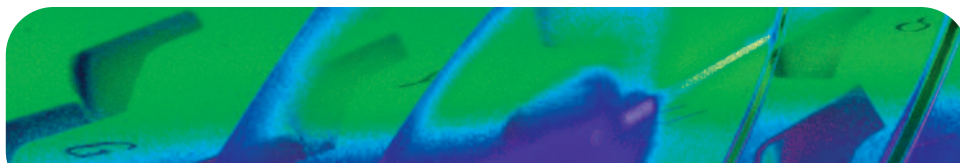


Key Findings

As part of a strategic initiative to establish itself as the preferred source of information about all aspects of the dental hygienist profession, the American Dental Hygienists Association (ADHA) commissioned the Center for Health Workforce Studies (the Center) at the School of Public Health, University at Albany, New York to conduct a survey of currently licensed dental hygienists in the United States. This survey was one of several projects designed to inform the ADHA and other interested stakeholders about different aspects of the profession.

The following points are among the key findings revealed by this survey and related projects conducted as part of the larger study:

- As of the end of 2007, there were approximately 152,000 dental hygienists licensed to practice in the U.S. Of these, approximately 130,000 were active practitioners.
- The number of licensed dental hygienists per 100,000 population ranged from 91.5 in Vermont to 23.8 in Tennessee (excluding Washington, D.C.). About one-quarter of dental hygienists held licenses in two or more states.
- Almost all (99%) practicing dental hygienists were women, and most (91.5%) were non-Hispanic White.
- More than half (53.8%) of the active dental hygienists practiced 31 or more hours per week. Nearly 30% reported two or more work sites.
- More than 9 of 10 (92%) reported a private dental practice as their primary work site. Nearly 26% percent of dental hygienists worked with a specialty dentist in either their primary or secondary work site.
- Work-related injuries were reported by 33.8% of dental hygienists. The three most common ailments identified by those who reported work-related injuries were shoulder injuries/tendonitis (44.6%), neck injuries (34.2%), and carpal tunnel syndrome (32.1%).
- The level of supervision of dental hygienists varied significantly across the 50 states, generally reflecting variations in legal scope of practice.
- The average hourly wage of dental hygienists in their primary employment site was \$32.87. Wages were highest in the Pacific census division (\$43.76 on average per hour) and lowest in the East South Central census division (\$26.32 on average per hour).
- Job satisfaction among dental hygienists is higher than for many health professions. About 86% of the practitioners were either somewhat satisfied or very satisfied with their current dental hygiene employment, and 9.4% were somewhat or very dissatisfied.
- Nearly half (48.3%) of dental hygienists rated the degree of difficulty in finding employment as a dental hygienist as either very or somewhat easy, while 30.7% rated it as somewhat or very difficult. The degree of difficulty was rated as easier in metropolitan areas, and in the Pacific and New England census divisions.



Background

The ADHA commissioned the Center to conduct a comprehensive study of the dental hygiene profession beginning in 2006. The study included a survey of dental hygiene education program directors in 2006, a survey of currently practicing dental hygienists in 2007, and anticipates a survey of students graduating from dental hygiene education programs in 2008-09.

The formal study also entailed the creation of a Master List of dental hygienists across the U.S. compiled from individual state license files that were culled for duplications and outdated licenses. A listing of more than 150,000 dental hygienists currently licensed to practice was provided to ADHA in 2007. Interviews were also conducted to gain the perspectives of both internal and external informants about the current practice of dental hygiene and the clinical evolution of the profession.

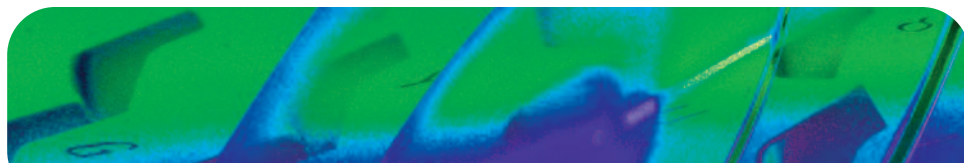
A random sample of 11,366 currently licensed dental hygienists received the eight-page *Survey of Dental Hygienists in the United States, 2007*. This scannable instrument contained questions about demographics, educational background and continuing education, current employment, tasks performed in professional practice, volunteer activities, special permits, kinds of patients served, types of employers, occupational injuries, and attitudes and opinions about issues affecting the profession. Dental hygienists were provided with multiple choice response options but were also permitted to make narrative comments or statements. The response rate of 44% was geographically representative of the known dental hygiene community.

This paper is the executive summary of a comprehensive technical report that includes detailed tabulations of all the responses to the survey. This summary presents the highlights from the full report, which is available from ADHA.

DEMOGRAPHIC PROFILE OF THE PROFESSION

The demographic profile of dental hygienists that emerged from the survey responses revealed no surprises. The profession is predominantly female and mostly non-Hispanic White. There were some indications of changes in the racial/ethnic background of younger dental hygienists.

- Dental hygienists were 99% female and 1% male.
- Most dental hygienists (91.2%) were non-Hispanic White. All other racial/ ethnic groups were underrepresented compared to the U.S. population. Table 1 shows that the median age of minority dental hygienists was younger than that of non-Hispanic Whites.
- The mean age of dental hygienists was 44.1 and the median age was 45. The median age of women in the U.S. labor force in 2006 was 41 [Toossi, 2008].



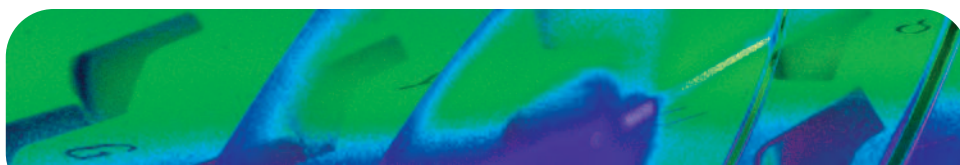
- Dental hygienists were more likely to be married and reside with children younger than 18 than the total U.S. population. Overall, 43.9% of dental hygienists had one or more children in their household compared to 34.6% of the U.S. population [USCB1, 2006].
- On average, dental hygienists had worked in the dental hygiene profession for 18.3 years. The median number of years worked as a dental hygienist was 17. The range of years worked was less than one year to 59 years.

Table 1. Mean and Median Age of Dental Hygienists by Race/Ethnicity, 2007

Race/Ethnicity	Mean Age	Median Age
Asian/Pacific Islander	42.0	41
Black/African-American	42.2	42
American Indian/Alaska Native	45.4	42
White (non-Hispanic)	44.4	45
Hispanic/Latino	40.7	40
Other	39.2	39

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions A.2 and A.4

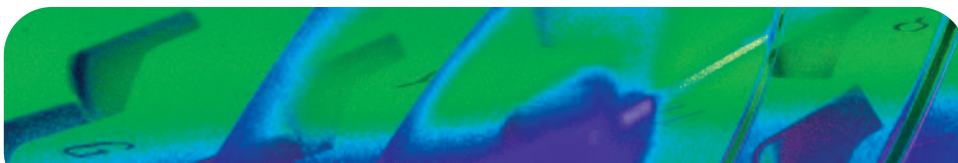
- Most dental hygienists (82.7%) lived in metropolitan statistical areas (MSAs) (at least one urbanized area with a population greater than 50,000) [USCB2, 2008]. Among the remaining dental hygienists, 11.2% resided in micropolitan areas (at least one urban cluster with a population greater than 10,000 but less than 50,000) [USCB2, 2008] and 6.1% lived in rural areas (not defined as either metropolitan or micropolitan).
- Most dental hygienists (97.7%) reported a work address in the same state as their state of residence. However, 2.3% of dental hygienists worked in a state other than the state of residence. Among those living and working in different states, 81.7% reported working in a metropolitan area common to both states and the remainder worked in a non-metropolitan area.
- The number of dental hygienists per 100,000 population varied across the nation from 90.1 dental hygienists per 100,000 population in Vermont to 23.8 dental hygienists per 100,000 population in Tennessee (excluding Washington, D.C.) (Figure 1).



- About 5% of dental hygienists had an advanced degree (defined as master’s degree, post-master’s certificate, doctoral, or professional education).
- Most dental hygienists (97%) had a certificate or degree in dental hygiene. Some dental hygienists also held degrees in dental hygiene education (8.4%), in health education (3.8%), in public health (2.2%), in health services administration (2%), and in business administration (2.5%).
- Fifteen percent of dental hygienists had certificates or degrees in “other” subjects including dentistry, education, dental assisting, biology, chemistry, and science. A list of “other” certificates and degrees can be found in Appendix A of the technical report.

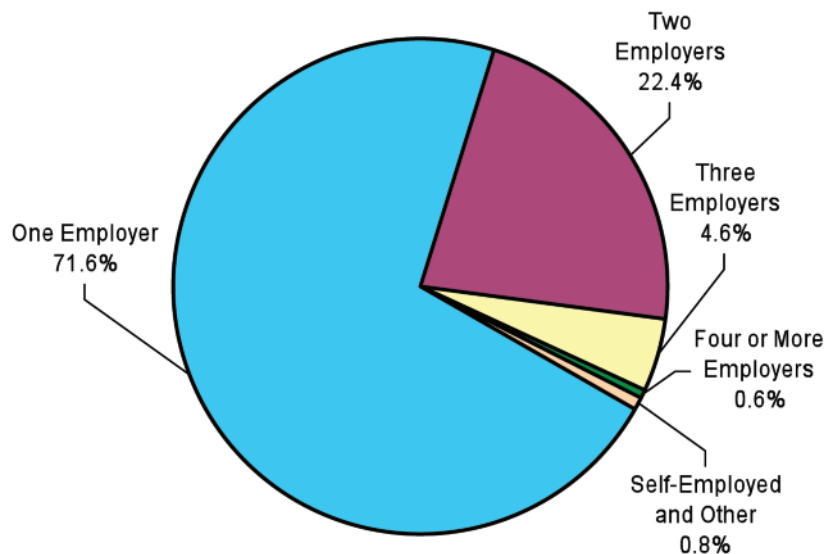
EMPLOYMENT

- More than half (53.8%) of dental hygienists worked full time (31 or more hours per week) and the remainder (46.2%) worked part time (30 or fewer hours per week).
- Dental hygienists who were single or divorced/separated were more likely than married or widowed dental hygienists to work for more than one employer. Minority dental hygienists were more likely than non-Hispanic Whites to work for more than one employer. Dental hygiene educators were more likely than clinical dental hygienists and administrators/managers to work for more than one employer.
- Although most dental hygienists worked primarily in clinical roles (95%), three in 10 dental hygienists also assumed secondary roles (29.6%) that included educator, consultant, administrator, regulatory roles, and corporate sales.
- Among those in secondary roles, more than half (53.4%) reported a secondary role as a dental hygiene educator.
- More than 18% of all dental hygienists reported either a primary or a secondary role as a dental hygiene educator. The percentage of dental hygienists reporting either a primary or secondary worksite in an academic/educational institution (4.7%) was less than those reporting an educator role, suggesting that many dental hygienists serving as educators were precepting clinical rotations for students in community settings.
- Nearly one-third of respondents (30%) not currently teaching in a dental hygiene education program expressed interest in teaching in an academic program in the future. Both the percentage of dental hygienists already teaching in education programs and the percentage of dental hygienists with an interest in teaching suggested strong interest in mentoring new dental hygiene professionals.



- The next most common secondary role was administrator/manager (15.5% of all dental hygienists in secondary roles). Dental hygienists in these roles were unlikely to identify secondary worksites suggesting that dental hygienists were assuming both clinical and administrative roles in primary worksites. In a salary analysis by differentiated roles of dental hygienists, administrators/ managers had the highest mean annual income (\$56,022) of dental hygienists in any role.
- Nine of 10 dental hygienists (91.9%) reported working primarily in private dental practices, either solo (65.5%) or group (26.4%).
- Seven in 10 dental hygienists (71.6%) worked only in a primary worksite and three of 10 dental hygienists (28.4%) reported both a primary and a secondary or multiple worksites (Figure 2).
- Less traditional settings such as community or school based clinics, hospitals, prisons, and nursing homes were more commonly cited by dental hygienists reporting secondary employment worksites (Table 2).
- There were regional differences in employment. Dental hygienists in the Midwest and South census regions were more likely to work for only one employer (78.5% in each region) than for two or more employers. Dental hygienists in the West census region were more likely to report two or more employers (35.1% in that region) than dental hygienists in any other census region.
- Dental hygienists in metropolitan areas were more likely than dental hygienists in micropolitan or rural areas to report secondary or multiple employers (27.9% in metropolitan areas reported secondary or multiple employment).

Figure 2. Percent of Dental Hygienists Working for One or More Employer or Self-Employed, 2007



Source: Survey of Dental Hygienists in U.S., 2007. CHWS, Question C.3.

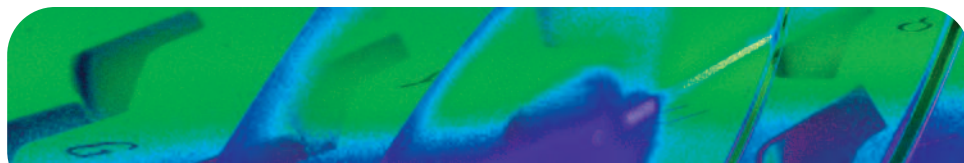
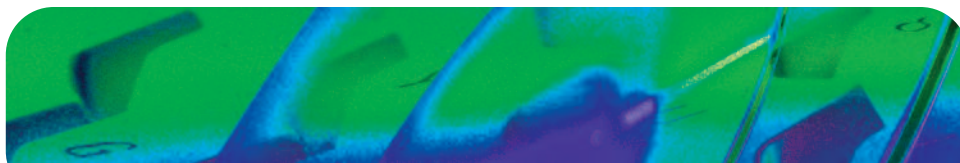


Table 2. Percent of Dental Hygienists by Type of Primary and Secondary Worksite, 2007

Type of Worksite	Primary	Secondary
Private Dental Office - Solo	65.5%	51.1%
Private Dental Office - Group	26.4%	25.7%
Academic /Educational Institution	3.1%	5.6%
Community/Migrant/Rural Clinic	1.1%	1.8%
Government Agency	0.8%	1.0%
Other Public Health Setting	0.5%	1.5%
School Based Clinic	0.4%	1.8%
Corporate/Industry Employer	0.4%	1.1%
Community/Veterans Hospital	0.3%	0.3%
Prison	0.3%	0.4%
Indian Health Service	0.2%	0.2%
Staffing Organization	0.1%	1.3%
Mobile Unit	0.1%	0.8%
Nursing Home/LTC Facility	0.1%	1.4%
Research Organization	0.0%	0.2%
Home Health Provider	0.0%	0.4%
Regulatory Agency	0.0%	0.3%
Other	0.6%	4.9%

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question C.4

- Almost half of dental hygienists (47.7%) with graduate education (defined as master’s, post-master’s, doctoral, or professional education) reported secondary employment while only one-quarter of dental hygienists (25.1%) with associate degrees reported secondary employment.
- Among dental hygienists working directly with dentists, 36.3% worked with one dentist at one worksite, 30.2% worked with more than one dentist at a single worksite, and 33.5% worked with multiple dentists at two or more worksites.
- Nine of 10 dental hygienists (92.1%) worked with at least one general dentist in a primary or secondary worksite.



- Dental hygienists also worked with specialty dentists. The most common specialty dentist employers were periodontists (7.5% of dental hygienists worked with a periodontist in either a primary or secondary worksite). Dental hygienists were somewhat more likely to work with specialty dentists if they worked at more than one worksite.

SPECIAL PERMISSIONS/ADVANCED PRACTICE

There were several indicators in the survey data that the dental hygiene profession was evolving beyond traditional dental hygiene roles, employment settings, and clinical services. One of the most significant indicators of this progression was the number of dental hygienists with special permits, privileges, and/or permissions to provide clinical services beyond the core competencies of dental hygiene.

- Almost half of dental hygienists (47.3%) reported having a special certification or permit to practice in an expanded or alternative function (as defined in state specific legislation) or to practice under special circumstances or privilege (e.g., unsupervised practice).
- About three quarters of dental hygienists (76.4%) with special permits, permissions, and/or privileges held a single special permit, while 21.1% held two or more special permits or privileges.
- Six of 10 dental hygienists with special permits (60.4%) held a permit to administer infiltration or block anesthesia (31.8%). The next most common special permit was registered dental hygienist in expanded functions (RDHEF) (35.5% of dental hygienists with special permits).

MULTIPLE LICENSES

About one-quarter of survey respondents (24.5%) held two or more current state licenses. Multiple licenses are sometimes required because dental hygiene licenses are not portable when dental hygienists move to another state. This is especially problematic for dental hygienists who live in border areas.

- Dental hygienists with more than one license were more likely to have a bachelor's degree or higher (41.3% with multiple licenses had a bachelor's degree) than dental hygienists with only one license (33.8% with one license had a bachelor's degree).
- Table 3 shows that dental hygienists licensed in more than one state earned a higher mean annual income (\$47,494) than dental hygienists with a single license (mean annual income \$46,466).
- A small percentage of dental hygienists (1.7%) held six or more current state licenses to practice dental hygiene.

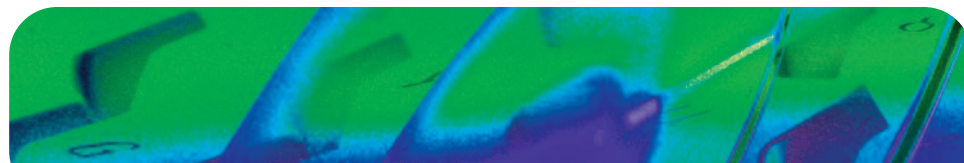


Table 3. Mean Annual Income of Dental Hygienists by Work Status and Number of Licenses, 2007

Work Status	Licensed in Only One State	Licensed in At Least Two States
Part Time	\$35,213	\$36,367
Full Time	\$55,588	\$56,381

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions C.12 and C.14.

CLINICAL SERVICES

With expansion in dental hygiene employment settings and involvement in specialty practices has also come the opportunity to provide an expanded array of clinical services including basic restorative care. While increased scope of practice for dental hygienists was evident from the survey results, it was also obvious that dental hygienists continued to provide the core clinical services that are recognized as basic competencies of the profession.

- The average weekly hours spent on dental hygiene core competencies like prophylaxis (21.4 hours), patient education (11.8 hours), and dental hygiene assessment (11.2 hours), and dental hygiene diagnosis (10.1 hours) were more than for all other clinical tasks.
- Some dental hygiene clinical services were practice specific (e.g., wire ligature adjustments) while others were geared to specific patient populations (e.g., sealant applications). The types of services provided by dental hygienists included anesthetic/analgesic and restorative services as well as services using new technology including digital radiography, lasers, and periodontal endoscopes.
- Only a few dental hygienists performed restorative services. Just 0.7% of dental hygienists provided resin restorations, 0.3% placed or carved amalgam restorations, and 3.2% placed or carved temporary restorations.
- The prevalence of clinical services that represented core competencies of dental hygiene persisted despite the type of general or specialty practice in which the dental hygienists worked. Dental hygiene assessment, dental hygiene diagnosis, cleaning/prophylaxis and patient education were commonly performed in the specialty practices where dental hygienists worked. The rates of other kinds of services varied with the type of specialty practice.

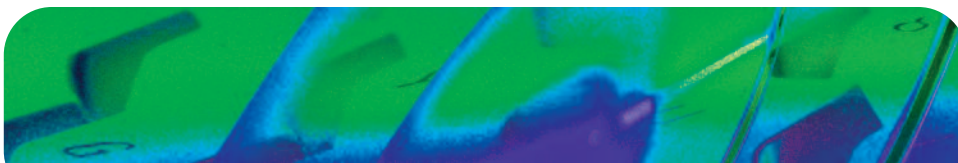


Table 4. Percent of Dental Hygienists Providing Clinical Service by Type of Specialty Practice Employer, 2007

Type of Specialty Dentist Employer	DH Assessment	DH Diagnosis	Cleaning and Prophylaxis	Patient Education	Sealant Applications	Digital Radiography	Place/Carve Amalgam Restorations
General Dentist	93.0%	87.7%	98.2%	97.1%	55.1%	45.6%	0.3%
Pedodontist	87.6%	81.7%	95.9%	96.3%	61.8%	43.2%	1.2%
Public Health Dentist	85.9%	73.2%	85.9%	87.3%	60.6%	35.2%	1.4%
Orthodontist	86.0%	82.4%	91.9%	94.9%	55.9%	48.5%	0.7%
Prosthodontist	95.2%	92.8%	97.6%	96.0%	37.6%	43.2%	0.8%
Periodontist	90.6%	84.6%	95.0%	95.3%	32.9%	43.6%	0.6%
Endodontist	81.6%	84.2%	94.7%	94.7%	63.2%	44.7%	2.6%
Oral/Maxillofacial Surg	84.6%	82.1%	94.9%	87.2%	64.1%	28.2%	2.6%
Cosmetic Dentist	93.1%	91.2%	97.7%	98.2%	60.8%	65.4%	0.5%
Other	91.4%	76.5%	92.6%	92.6%	51.9%	43.2%	0.0%

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question C5 and C.7.

Note: Percents sum to greater than 100% because some dental hygienists reported multiple services

LEVELS OF REQUIRED SUPERVISION

Dental hygienists were asked not only to describe the clinical services provided at their worksites, but also to indicate the amount of time spent weekly providing each service and the level of required supervision for each task. An analysis of required supervision for specific dental hygiene clinical services revealed that there were differences across states in the supervision required for many of the tasks. Mean supervision scores were computed based on a scale in which direct supervision for a task was scored as 4, indirect supervision was scored as 3, general supervision was scored as 2 and no supervision was scored as 1.

- Figure 3 shows that the mean national supervision score for cleaning and prophylaxis, a fundamental service of dental hygiene was 2.73 (closer to indirect supervision (3) than to general supervision (2)). The range in mean supervision scores across states was from 2.33 in Colorado to 3.50 in West Virginia.
- Some dental hygiene tasks had lower mean national supervision scores than cleaning and prophylaxis. Those tasks included intraoral photography (2.50), “other” (2.50), tobacco counseling (2.53), placing and removing dressings (2.55), patient education (2.57), and fluoride treatments (2.59).
- The mean national supervision scores for administration of nitrous oxide anesthesia (3.16) and local anesthesia (3.06) were among the highest for any dental hygiene service. The range in mean supervision scores for local anesthesia (2.0 to 4.0) was greater than for cleaning and prophylaxis. Additional details on these analyses can be found in the full report.

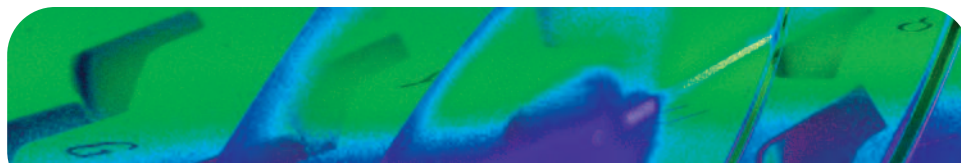
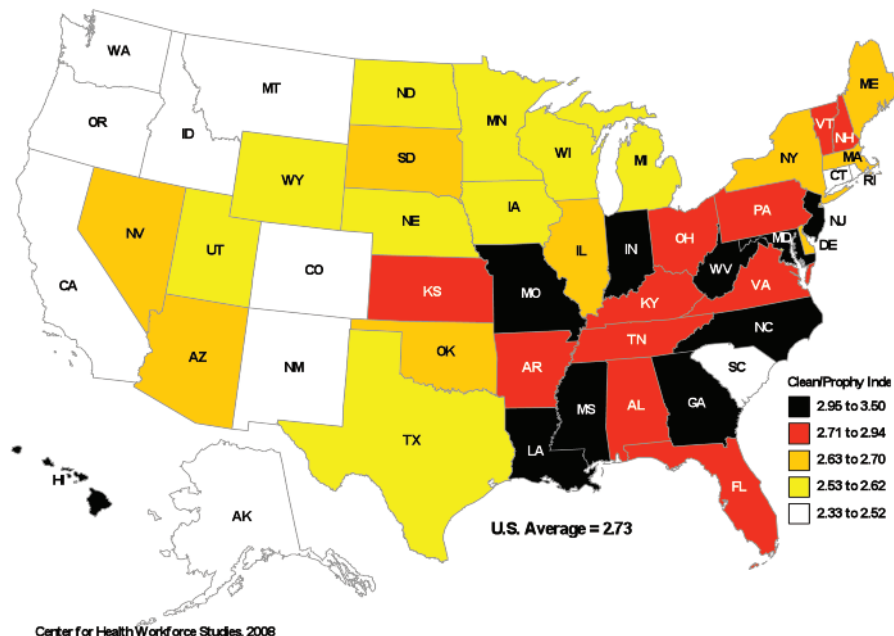


Figure 3. Mean State Supervision Scores for Cleaning and Prophylaxis by a Dental Hygienist, 2007

(Direct Supervision = 4, Indirect Supervision = 3, General Supervision = 2, No Supervision = 1)

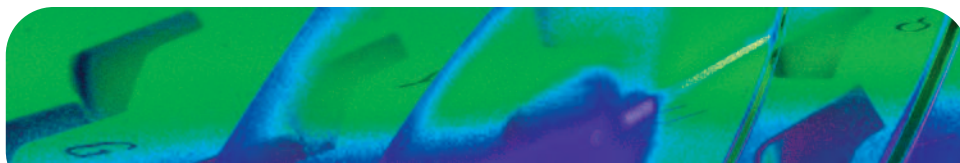


Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions C.7.

HOURLY WAGES AND ANNUAL INCOME

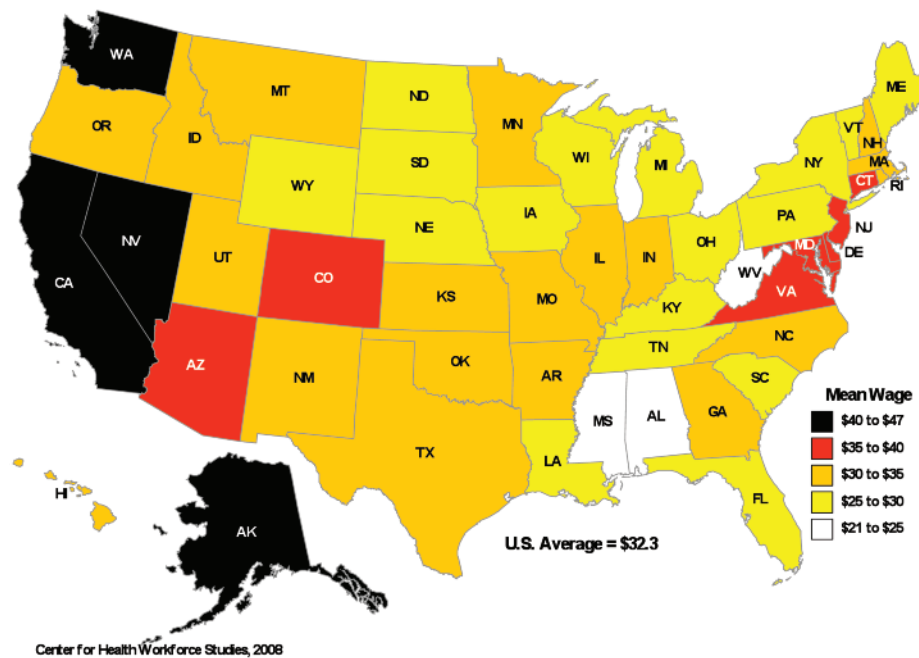
Hourly wages and annual income for dental hygienists varied with a number of factors including level of dental hygiene education, work status (full time/part time), geographic location, type of worksite, type of employing dentist, and possession or not of special permits.

- The mean hourly wage for dental hygienists at the primary employment site was \$32.86. The median hourly wage at the primary employment site was \$32 and the mode was \$30 per hour.
- Sixty-eight percent of dental hygienists earned between \$25 and \$41 per hour at their primary worksite.
- Mean hourly wages were highest for dental hygienists not employed directly by dentists (i.e., “other” employers) (mean hourly wage \$36.97) and for dental hygienists working with cosmetic dentists (mean hourly wage \$34.48) or periodontists (mean hourly wage \$34.15). Mean hourly wages were lowest for dental hygienists working for public health dentists (mean hourly wage \$26.39).
- Analysis of mean hourly wage by possession or not of special permits revealed that dental hygienists with infiltration and/or block anesthesia permits earned the highest mean hourly wage (\$34.91 per hour). Dental hygienists with no special permits or privileges averaged (\$31.57 per hour).



- There were regional differences in mean hourly wage with dental hygienists in the Pacific census division earning an average of \$43.68 per hour, and dental hygienists in the East South Central census division earning an average of \$26.32 per hour. Figure 4 shows the mean hourly wages by state.
- Mean aggregated hourly wage was negatively and significantly correlated with the ratio of dental hygienists to dentists. As the ratio of dental hygienist/dentist increased at the state level, the average hourly pay decreased (correlation coefficient -0.421**) (p. = .002).

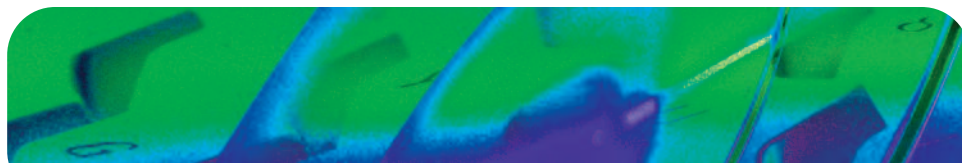
Figure 4. Mean Hourly Wages of Licensed Dental Hygienists, 2007



Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions C.6 and C.11a.

Computations of mean annual income revealed differences similar to those found in the analysis of mean hourly wages. Again, mean annual income varied based on work status (part time or full time), geography, dental hygiene education, dental hygiene roles and employment settings, and on advanced practice permits and permission.

- The overall mean annual income from employment as a dental hygienist was \$46,770 per year. The mean annual part-time income (30 hours or fewer per week) was \$35,483 and the mean annual full-time income (31 or more hours per week) was \$55,810.
- Median annual income of all dental hygienists was \$46,000 per year. Median part-time annual income was \$35,000 and median full-time annual income was \$53,000.



Although estimates of mean annual incomes by types of employment worksite were computed, it was difficult to draw conclusions for some employment settings because the numbers of dental hygienists in some settings were too small for meaningful comparisons. Table 5 shows the means for three work settings.

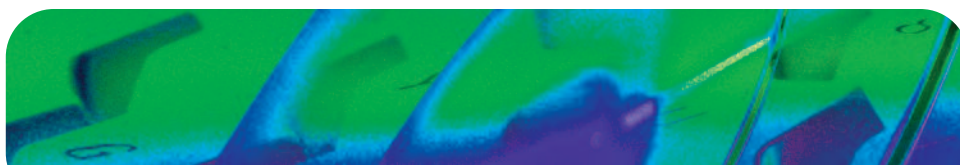
- Among dental hygienists who worked in private dental practices, mean annual income increased with full-time work status and also with full-time work status with primary and secondary employment.
- Dental hygienist educators who worked full time in a primary worksite had higher mean annual incomes (\$56,220) than dental hygiene educators who worked part time in one worksite (\$33,143) or part time in both a primary and secondary worksite (\$29,455) or full time in both a primary and secondary worksite (\$52,400)

Table 5. Mean Annual Income of Dental Hygienists in Private Practice and in Academic Work Settings, 2007

Type of Worksite	Part Time w/Primary Worksite Only	No. Of DHs	Part Time w/Primary & Secondary Worksites	No. Of DHs	Full Time w/Primary Worksite Only	No. Of DHs	Full Time w/Primary & Secondary Worksites	No. Of DHs
Private Dental Office Solo Practice	\$35,063	995	\$36,305	282	\$54,748	877	\$57,580	452
Private Dental Office Group Practice	\$35,711	343	\$39,078	77	\$55,648	466	\$58,197	178
Academic/Educational Institutions	\$33,143	14	\$29,455	22	\$56,220	50	\$52,400	45

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions C.4 and C.12

- Dental hygienists working full time in corporate/industrial settings earned the highest mean annual income overall (\$65,333) of dental hygienists working full time in only a primary setting.
- Income varied by type of dentist employer. Mean annual incomes were highest for dental hygienists working for oral/maxillofacial surgeons (\$57,412) and cosmetic dentists (\$55,071). Mean annual incomes were lowest for dental hygienists working for orthodontists (\$44,052) and general dentists (\$46,595).
- Dental hygienists working as administrators/managers reported the highest mean annual income (\$56,022) of dental hygienists working in any role. Clinical dental hygienists reported a mean annual income of \$46,625.
- Mean annual income varied by geographic region. Dental hygienists in the Pacific census division reported the highest mean full-time annual income (\$70,977) and dental hygienists in the East South Central census division reported the lowest (\$46,711).



- Table 6 shows that mean annual full time income progressed with current highest level of dental hygiene education.

Table 6. Mean Full Time Dental Hygiene Salary by Current Highest Level of Dental Hygiene Education, 2007

Current Highest Level of Education	Mean Full-Time Salary (31 or More Hours/Week)	Number of DHs
Certificate/Diploma	\$53,741	54
Associate Degree	\$54,315	1,368
Bachelor's Degree	\$58,105	658
Master's Degree, Post-Master's Certificate	\$59,276	116
Doctoral/ Adv. Prof Degree/ DDS	\$61,313	16
Other	\$64,375	16

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Questions B.2 and C.12

- Dental hygienists with a special permit to provide infiltration and/or block anesthesia had the highest mean full time annual income (\$59,264) based on possession of special permits. Dental hygienists with no special permits had the lowest mean full time annual income (\$53,286).
- Annual incomes appeared to remain relatively stable over the length of the dental hygiene professional career. Dental hygienists who had worked the longest had the lowest mean annual incomes but this was likely due to the fact that dental hygienists with many years of professional experience were significantly less likely (correlation coefficient -0.173** p value < 0.001) to work full time than those who had practiced for a shorter time period.

BENEFITS

Seven of 10 dental hygienists (70.5%) reported receiving some kind of employment benefit from their employer(s). Just over half (52.2%) indicated their employer provided them with benefits, and another 18.3% indicated they received employment benefits but shared in the cost. The remaining 29.5% of dental hygienists reported no employment benefits.

- Figure 5 shows that the most common employment benefit was paid vacation/holidays/sick leave (88.6% of those who received any benefits) followed by retirement plans (69.6%).

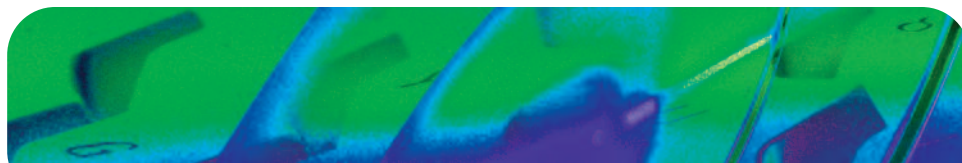
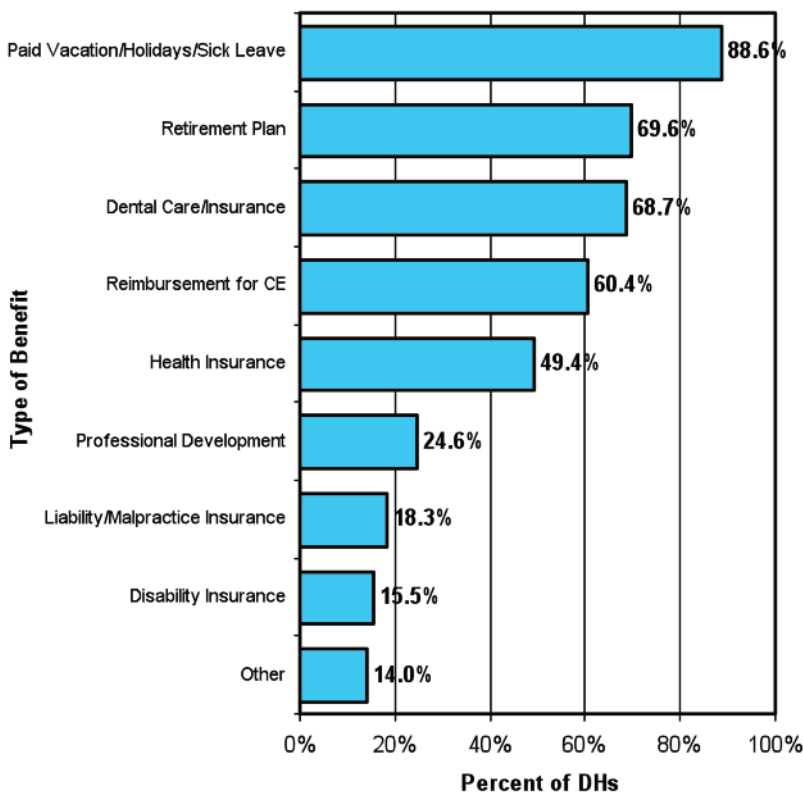


Figure 5. Percent of Dental Hygienists Receiving Selected Employment Benefits



Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question C.13a.

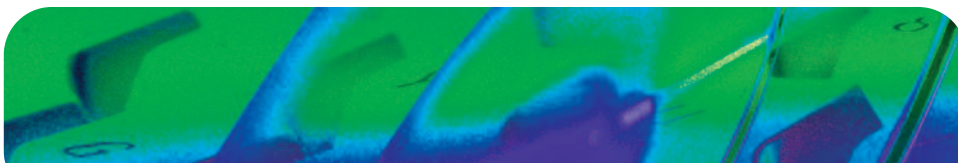
Note: Percents sum to more than 100 because many dental hygienists reported multiple benefits.

- More dental hygienists received dental care or dental insurance as a benefit (68.7%) than received health insurance as a benefit (49.4%).

PUBLIC HEALTH AND VOLUNTEER ACTIVITIES

Almost a third (30%) of dental hygienists participated in public health, oral health education, public policy, or oral health planning activities. Among those who were involved in public health activities, 73.1% participated in public oral health screening activities.

- Nearly half of dental hygienists (45.2%) reported some volunteer activity related to their profession. Among those who volunteered, the largest percentage (25.5%) volunteered between one and five hours annually.
- The most common location for volunteer activity was in schools at all levels – nursery, grade, middle, and high schools (52.9%). The next most common location for volunteer dental hygiene activity was at community health fairs (36.0%).



- Dental hygienists with graduate degrees (defined as master's, post-master's certificates, doctoral, or professional education) were more likely than other dental hygienists to participate in volunteer oral health activities.

PATIENT POPULATIONS

Dental hygienists provided services to various populations in the practices where they worked. Patients varied by age, race/ethnicity, underlying medical conditions, and social characteristics (e.g., language of origin, insurance status, etc.).

- Almost half (47.3%) of dental hygienists reported that between 50% and 100% of their patients were adults aged 19 years to 65 years.
- Although dental hygienists indicated serving patients of all ages in their practices, infants (aged 0 to 2 years) were the least reported. Almost three-quarters (73.2%) of dental hygienists reported seeing no infants in their practices. Forty-four percent of dental hygienists reported that between 1% and 10% of their patients were children between ages 3 and 12.
- Special needs patients represented a small proportion of patients seen by a large proportion of dental hygienists. Eight of 10 dental hygienists (82.5%) indicated that 1% to 10% of their patients were special needs patients. Only 7.2% of dental hygienists indicated no special needs patients were served in the practices where they worked.
- About half of dental hygienists (50.6%) indicated that between 1% and 10% of their patients were Black/African-American, Hispanic/Latino, or American Indian/Native Alaskan, and 57.8% indicated that between 1% and 10% of their patients spoke English as a second language.

OCCUPATIONAL INJURIES

Just over one-third of dental hygienists (33.8%) indicated they had experienced an occupational injury or illness related to their work.

- Figure 6 shows that the most common injuries were shoulder injury/tendonitis (44.6%) and neck injuries (34.2%).
- Fifty-three percent of dental hygienists who reported a workplace injury or illness indicated they used medication to control the discomfort and 49.5% indicated they had shortened their work hours as a result of their injury or illness.

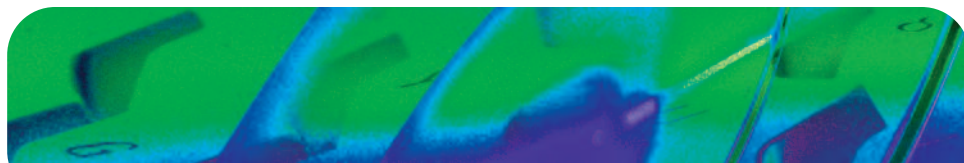
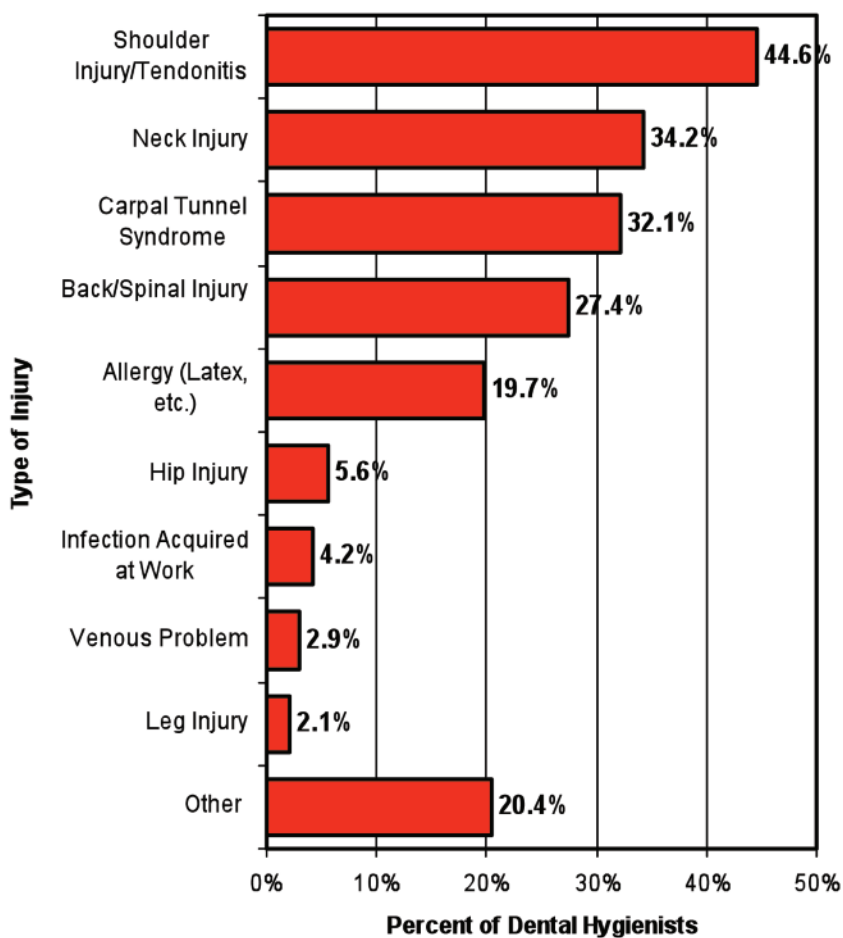


Figure 6. Type of Occupational Injury or Illness Experienced by Dental Hygienists with Employment-Related Injury or Illness, 2007



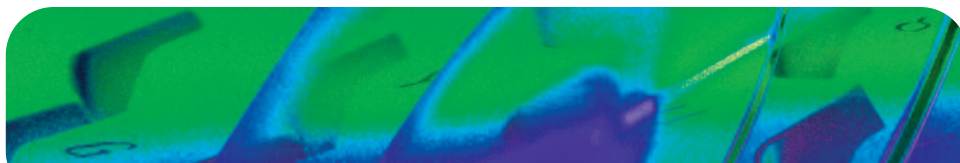
Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question C.19a.

Note: Percents sum to more than 100% because some dental hygienists reported multiple injuries.

CONTINUING EDUCATION

Topics chosen for continuing education (CE) provide a snapshot of dental hygienists' professional interests. The topics selected for CE courses taken in the last two years and the topics of interest for future CE suggested that dental hygienists were challenged in their practices by the need to learn advanced skills, new technologies, and the demands of "special needs patients."

- Table 7 shows that the most common topic for CE taken over the previous two years was medical emergencies/CPR/life support (83.3%). This was likely a common requirement for renewal of state licenses. The next most common subjects of CE were infection control (75.0%) and periodontics (73.1%).



- About one-third of dental hygienists (32.3%) had taken a course in local anesthesia and/or nitrous oxide analgesia, pharmacology (31.4%), advanced ultrasonics (28.7%), or digital radiography (28.5%).

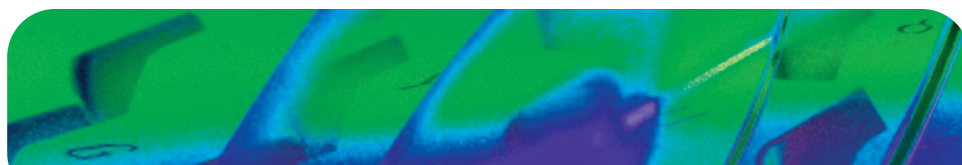
Table 7. Percent of Dental Hygienists Participating in CE Courses by Topic, 2007

Topic of Course	Percent of DHs
Medical Emergencies/CPR/Life Support	83.3%
Infection Control	75.0%
Periodontics	73.1%
Scaling/Root Planing	42.6%
Chemotherapeutics	38.9%
Nutrition	37.8%
Legal Aspects of Hygiene Practice/HIPPA	34.0%
Local Anesthesia/Nitrous Oxide Analgesia	32.3%
Pharmacology	31.4%
Dental Hygiene Ethics	30.3%
Advanced Ultrasonics	28.7%
Digital Radiography	28.5%
Pain Control	26.7%
Bleaching	22.2%
Dental Hygiene for Special Needs Patients	19.4%
Radiography	15.4%
Hands on Clinical Course	13.3%
Lasers	12.0%
Periodontal Endoscopy	10.7%
Dental Hygiene in a Public Health Setting	7.0%
Restorations (Amalgam/Resin)	6.5%
Prosthodontics	5.9%
Endodontics	3.4%
“Other”	15.6%

Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question D.4

Note: Percents sum to more than 100% because some respondents selected multiple topics.

- Dental hygienists also listed “other” topics of CE taken in the past two years that were not specifically enumerated in the survey responses. These topics included forensic dentistry, implants, pedodontics, invisalign, and TMJ. Dental hygienists also indicated CE topics of future interest including advanced ultrasonics, lasers, forensics, and treating special needs patients.



- Almost three-quarters of dental hygienists (73.8%) earned some CE credits from their local or state professional association. Half (50.3%) earned some credits from national conferences and professional meetings, and nearly half (49.2%) earned some credits from local dental hygiene academic education programs.

JOB MARKET

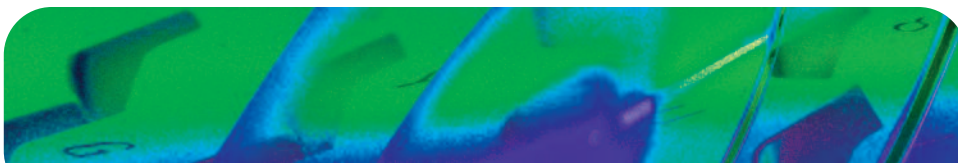
Nearly half of dental hygienists (48.3%) indicated that it was either very easy (20.8%) or somewhat easy (27.5%) to find dental hygiene employment in their geographic area. Nearly one-third (30.7%) indicated that it was either somewhat difficult (23.0%) or very difficult (7.7%) to find a dental hygiene job in their geographic area.

- Dental hygienists working in metropolitan areas were more likely than others to assess finding dental hygiene employment to be very easy or somewhat easy (51%).
- Figure 7 shows that dental hygienists in the East North Central and West North Central census divisions were more likely than dental hygienists in other census divisions to report difficulty in obtaining dental hygiene employment (56% and 46%, respectively).
- A majority of dental hygienists working in the Pacific, Middle Atlantic, and New England census divisions reported that it was somewhat easy or very easy to find dental hygiene employment (67%, 61%, and 60%, respectively).
- Dental hygienists were asked to identify the reasons for difficulty in finding dental hygiene employment and 73.7% identified one reason as an oversupply of dental hygienists in the particular geographic area. About one-third of dental hygienists (34.1%) who identified difficulty in finding employment attributed that difficulty to overproduction of dental hygienists by dental hygiene education programs in the area. About one-fifth of the dental hygienists (22.3%) who indicated difficulty in finding employment identified one of the contributing factors as too few dentists in the area. (Note: Total percent sums to greater than 100 because dental hygienists were permitted to identify multiple reasons for difficulty in securing employment in their particular area.)

JOB SATISFACTION

Figure 8 shows that the level of job satisfaction among dental hygienists was high, with 53.8% indicating they were very satisfied and 32.2% indicating they were somewhat satisfied with their current employment. A small percentage of dental hygienists (4.5%) were neutral (neither satisfied nor dissatisfied), and the rest were either somewhat dissatisfied (8.1%) or very dissatisfied (1.3%).

Although the level of overall job satisfaction was high, there were particular features of the dental hygiene job that were identified as dissatisfying, even by some who reported overall satisfaction.

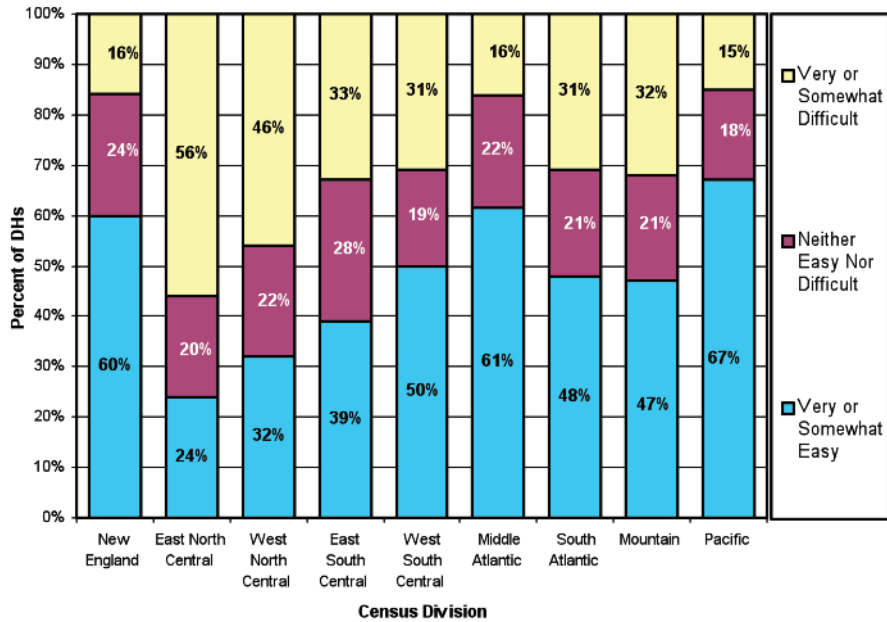


- Among all dental hygienists (whether satisfied or dissatisfied generally with their jobs), 43.6% reported the pay scale for dental hygiene employment was too low. Another third (36.1%) expressed some dissatisfaction with their current employer for personal reasons. A lack of needed benefits was a concern expressed by 33.5% of respondents.

FUTURE PLANS

A majority of dental hygienists (64.3%) indicated their intention to remain in their current position for the next five years. Some dental hygienists expected to seek a similar position in another practice (9.0%). Other dental hygienists anticipated departure from the profession through retirement (7.9%) or leaving dental hygiene for employment in another field (3.5%).

Figure 7. Dental Hygienist Assessments of Ease or Difficulty in Finding Dental Hygiene Employment by Census Division, 2007



Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question C.6 and F.1

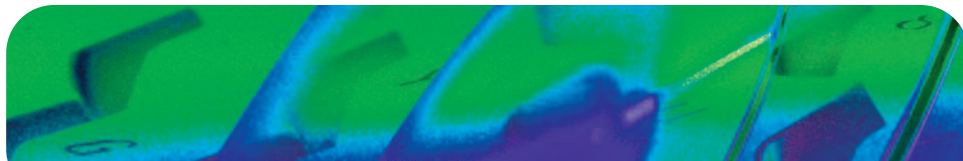
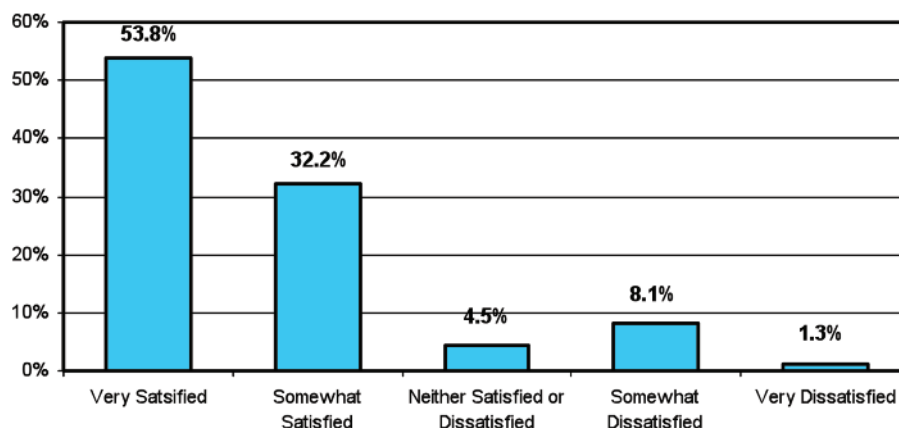


Figure 8. Level of Satisfaction or Dissatisfaction with Current Dental Hygiene Employment, 2007



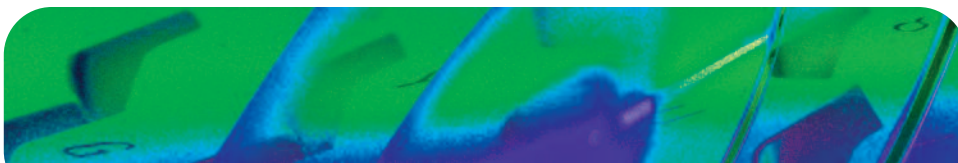
Source: Survey of Dental Hygienists in U.S., 2007, CHWS, Question F.2.

Conclusions

Although the dental hygiene practitioner survey provided significant details about current dental hygiene practice, the overall impression from the survey responses was of a profession in transition. The survey responses revealed information and insights about dental hygienists' demographic and educational profiles, employment patterns, clinical roles, continuing education patterns, and involvement in public health and volunteer activities. The survey responses also revealed dental hygienists' contributions to important public health goals to achieve better oral health for a number of population groups.

When interpreted in the context of the other components of the larger Dental Hygiene Workforce Study, the survey responses also reveal meaningful changes in the dental hygiene profession.

- Although the dental hygiene profession remained largely female and non-Hispanic White, there were indications of greater racial/ethnic diversity among younger dental hygienists.
- Although a majority of dental hygienists remained associate-degree educated, more than one-third of dental hygienists had a bachelor's, master's, doctoral, or professional degree as their current highest level of education (35.6%). Some dental hygienists were currently pursuing further academic education (4.9%) and others (35.3%) anticipated additional education in the future. A majority (70%) of dental hygienists indicated their support for the initiative to move entry-level education for the profession to the bachelor's degree level.

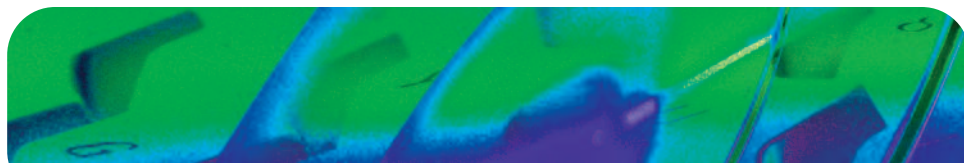


- Most dental hygienists continued to work with general dentists (92.1%), but many also worked with periodontists, pedodontists, orthodontists, prosthodontists, endodontists, public health dentists, oral and maxillofacial surgeons, and cosmetic dentists.
- While dental hygienists continued to provide the core clinical services of dental hygiene (prophylaxis and education), scopes of practice have expanded variously (depending on enabling state legislation) to include a range of services from fluoride treatments and sealant applications to anesthesia and restorative services. Nearly half (47.3%) of dental hygienists reported having expanded practice permits and privileges of one type or another.
- The continuing education topics reported by dental hygienists provided evidence of expanding clinical interests and a need for education in current technologies, new skills, and patients with compromising medical, mental, and social conditions. The breadth of topics of both current and anticipated CE was testament to an evolving profession.

Although the survey responses revealed greater dental hygiene professional participation in oral health services, they also revealed concerns about structural aspects of dental hygiene jobs. The concerns included differentials in wages across states; regional variations in availability of dental hygiene jobs; and continuing concerns about lack of adequate employment benefits, limited career ladders, restrictive supervision, and licensing requirements. Despite these concerns, dental hygienists were highly satisfied with their current employment (86%).

A number of challenges for the dental hygiene profession were revealed by the survey responses, especially in the narrative comments supplied by respondents. These included the need to:

- Standardize entry-level education to ensure consistent professional skills and create CE programs to support competency for practicing professionals;
- Recruit a more diverse workforce to work with patient populations that are increasingly diverse;
- Have professional self-regulation and relaxation of supervision requirements that act as barriers to preventive oral health care in some states;
- Help professionals learn about and adopt new oral health technologies as they are developed;
- Rationalize provision of care to underserved populations as economic incentives shift or change; and
- Move dental hygiene professionals to new service delivery models as the locus of service provision shifts to non-traditional community settings.



These issues are suggested as consequential areas on which the advocates for the profession, including the ADHA, governing bodies and boards, and individual dental hygienists, should focus in the future. The importance of each to the profession was supported by the responses to the survey.

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