National and State-Level Projections of Dentists and Dental Hygienists in the U.S., 2012-2025

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This brief presents national and state-level estimates of supply and demand for dentists and dental hygienists at baseline in 2012 and for 2025 using the Health Resources and Services Administration's (HRSA) Health Workforce Simulation Model (HWSM).[1] While the nuances of modeling supply and demand differ for individual health professions in this model, the basic framework remains the same. Data on supply and demand for providers in 2012 (with demand for dentists adjusted for shortages in Dental Health Professional Shortage Areas [DHPSA][2] in 2012) are used as baseline to project supply of and demand for dentists and dental hygienists in 2025. Assuming current national patterns of labor supply and service demand remain unchanged, the supply side projections account for new entrants to the workforce as well as changing workforce decisions (e.g. retirement and hours worked patterns) arising from the changing characteristics of the workforce. The demand projections account only for the changing population size and composition and assume that the number of visits covered by each provider remains constant over time. Both supply and demand projections are reported as full time equivalents (FTE).

KEY FINDINGS

Dentists

Nationally, increases in supply will not meet the increases in demand for dentists, which will exacerbate the existing shortage.

- Approximately 190,800 dentists were estimated to be active in the workforce in 2012. Assuming that the workforce participation patterns remain unchanged, the supply of dentists is expected to grow by 11,800 full-time equivalents (FTEs) – from 190,800 in 2012 to 202,600 in 2025 – a 6 percent increase nationally.

[1] This model uses a micro-simulation approach where supply is projected based on the simulation of career choices of individual health workers. Demand for health care services is simulated for a representative sample of the current and future U.S. population based on each person's demographic and socioeconomic characteristics, health-related behavior, and health risk factors that affect their health care utilization patterns. For more information on data and methods, please see the technical documentation at http://bhpr.hrsa.gov/healthworkforce/supplydemand/simulationmodeldocumentation.pdf.

[2] U.S. Department of Health and Human Services, Health Resources and Services Administration, *Dental HPSA Designation Overview* available at http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/dentalhpsaoverview.html. accessed December 2014.

- The national demand for dentists is projected to grow by 20,400 FTEs – from 197,800 in 2012 to 218,200 in 2025 - a 10 percent increase.

All 50 states and the District of Columbia are projected to experience a shortage of dentists.

- Projected changes in supply and demand for dentists between 2012 and 2025 differ by state, resulting in a variation in the extent of shortage across states in 2025.
- States projected to experience the greatest shortfalls in the number of dentists in 2025 are California (with 1,234 fewer FTE dentists than needed), Florida (with 1,152 fewer FTE dentists than needed), and New York (with 1,024 fewer FTE dentists than needed).

Dental Hygienists

At the national level, supply will outpace the demand for dental hygienists.

- Assuming the continuation of current training levels and workforce participation patterns, the supply of dental hygienists is expected to grow by 43,600 FTEs – from 153,600 FTEs in 2012 to 197,200 FTEs in 2025 – a 28 percent increase nationally.
- The national demand for dental hygienists is projected to grow by 15,500 FTEs – from 153,600 FTEs in 2012 to 169,100 FTEs in 2025 – a 10 percent increase nationally.

Excess supply of dental hygienists at the national level masks projected shortages in some states.

- States projected to have the greatest surplus in dental hygienist are California (with 5,154 additional FTEs than needed), Texas (with 3,324 additional FTEs than needed) and Florida (with 2,768 additional FTEs than needed).
- Five states are projected to experience a smaller growth in dental hygienist supply relative to demand, resulting in shortages by 2025. Shortages of dental hygienists in Mississippi, Montana, North Dakota, South Dakota, and West Virginia are expected to range from 21-93 FTE.

Evolving Role of the Dental Hygienist

Changes in oral health delivery and in health systems may somewhat ameliorate dentist shortages by maximizing the productivity of the existing dental health workforce.

- The roles of dental hygienists are expanding in some states.

- Increased use of dental hygienists could reduce the projected dentist shortage if they are effectively integrated into the delivery system.
- Research to model the implications of these recent trends in care delivery is ongoing and will inform future workforce projection models.

BACKGROUND

Oral health care is provided by dentists and dental hygienists, with support from dental assistants. Although other care delivery settings (such as corporate, community-based, school-based, or mobile settings) are gaining popularity, dental services are commonly provided in private clinic settings.

Dentists provide diagnostic, preventative, therapeutic, and restorative oral health services. To become a dentist, individuals must complete an accredited 4-year post-baccalaureate program. They may be educated in both general and specialty dentistry, depending on the length and focus of their training program. The average student debt for dental graduates in 2011 was $245,497. The high level of debt has been identified as a barrier to practicing in rural and low-income communities where earning potential is lower.[3]

Dental hygienists offer preventative and therapeutic services including cleanings, fluoride varnish, dental sealants, and patient education. Hygienists are educated in three types of programs accredited by the Commission on Dental Accreditation (CODA): 2-year associate degree programs, post-secondary certificate programs, and 4-year baccalaureate degree programs. Of late, some states have been looking to create professional certification for advanced practice dental hygienists/dental therapists to broaden dental hygienists' scope of practice and develop new models of team-based care with expanded roles for dental hygienists. These roles may include providing some basic restorative services, such as applying temporary crowns, performing diagnostic examinations, and prescribing antibiotics or painkillers, in addition to oral health cleanings and preventative services. [4]

This brief presents national and state-level estimates of the supply of and demand for dentists and dental hygienists in 2012 and 2025. Dental assistants have been excluded from this report as data on dental assistant supply are unreliable in the data set used in this study.

[3] American Dental Education Association, Survey of Dental School Seniors, 2011 Graduating Class, Average Educational Debt 1996 to 2011. Accessed at: http://www.adea.org/publications/tde/Pages/Students.aspx.
[4] American Dental Hygienists' Association, Competencies for the Advanced Dental Hygiene Practitioner (ADHP). Accessed at: http://www.adha.org/resources-docs/72612_ADHP_Competencies.pdf.

RESULTS

National Trends in Dentist Supply and Demand:

The HRSA HWSM estimates that the nation had approximately 190,800 active dentists in 2012.[5] Trending forward to 2025, approximately 60,600 will have departed the workforce and 70,700 new dentists will have entered the workforce. Adjusting for changes in the average number of hours worked per week, the net growth of 11,800 FTE dentists will result in a 6 percent increase in the national workforce to 202,600 FTE dentists by 2025 (Exhibit 1).

Exhibit 1: Projected National Supply and Demand for Dentists

	Full time equivalent
Supply	
Estimated supply, 2012	190,800
Estimated supply growth, 2012-2025	11,800
New entrants	*70,700*
Attrition [a]	*(60,600)*
Change in average work hours [b]	*1,700*
Projected supply, 2025	202,600
Demand[c]	
Estimated demand, 2012	197,800
Estimated demand growth, 2012-2025	20,400
Projected demand, 2025	218,200
Projected Supply (minus) Demand, 2025	**(15,600)**

Source: 2010 American Dental Association (ADA) Master file combined with published statistics from ADA, and estimates from HWSM
Notes: FTE: Full Time Equivalent; Numbers presented are rounded to the nearest hundred; Negative numbers are in parenthesis; [a] Includes retirements and mortality; [b] This represents the change in dentist full time equivalents resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked; [c.] The model assumes that demand and supply are equal in 2012, except for the number of additional dentists that would be needed to de-designate DHPSA.

[5] Analysis for other health professions (such as physicians) finds that health profession databases tend to overstate the number of active providers at the oldest age groups—often due to delays in updating a person's status after that person retires. To account for the overestimate of older active dentists from the American Dental Association data, HWSM discounts dentists older than 75 years.

Based on 2012 health care delivery and staffing patterns, and assuming that the current dentist demand is met by the current dentist supply (except for the 7,014 additional dentists needed to de-designate DHPSA[6]), the demand for dentists is projected to increase by approximately 10percent (20,400 FTEs), from an estimated 197,800 FTEs in 2012 to 218,200 FTEs in 2025. The excess growth in demand compared to dentist supply, combined with the existing shortages in DHPSAs, results in a projected national shortage of approximately 15,600 FTE dentists in 2025.

State Trends in Dentists Supply and Demand:

All 50 states and the District of Columbia are projected to see their dentist supply be outpaced by demand between 2012 and 2025. California will have the most severe projected shortage, with a deficit of 1,234 dentist FTEs, followed by Florida (1,152 FTEs), and New York (1,024 FTEs) (Exhibit 2).

Exhibit 2: Baseline and Projected Supply of and Demand for Dentists: 2012-2025

	2012			2025 Projected		
Region/State	**Supply**	**Shortage as captured by DHPSA**	**Demand (2012 Supply + shortage as captured by DHPSAs)**	**Supply**	**Demand**	**Difference [Supply-(Demand +DHPSA)]**
Northeast						
Connecticut	2,555	(86)	2,641	2,497	2,643	(232)
Maine	679	(44)	723	614	645	(75)
Massachusetts	4,922	(72)	4,994	4,628	4,894	(338)
New Hampshire	903	(4)	907	913	938	(29)
New Jersey	7,163	(18)	7,181	7,027	7,511	(502)
New York	14,234	(231)	14,465	13,584	14,377	(1,024)
Pennsylvania	7,560	(301)	7,861	6,695	7,226	(832)
Rhode Island	608	(33)	641	558	603	(78)

[6] HRSA estimated that 7,101 dentists would be needed to de-designate DHPSA in 2012, which included 87 dentists who would be required in Puerto Rico and U.S. territories.

	2012			2025 Projected		
Region/State	**Supply**	**Shortage as captured by DHPSA**	**Demand (2012 Supply + shortage as captured by DHPSAs)**	**Supply**	**Demand**	**Difference [Supply-(Demand +DHPSA)]**
Vermont	359	(1)	360	328	353	(26)
Northeast Subtotal	38,983	(790)	39,773	36,844	39,190	(3,136)
Midwest						
Illinois	8,508	(398)	8,906	8,103	8,602	(897)
Indiana	3,149	(52)	3,201	2,778	3,044	(318)
Iowa	1,708	(59)	1,767	1,458	1,554	(155)
Kansas	1,515	(85)	1,600	1,384	1,489	(190)
Michigan	6,097	(128)	6,225	5,431	5,908	(605)
Minnesota	3,455	(88)	3,543	3,450	3,614	(252)
Missouri	2,826	(281)	3,107	2,657	2,802	(426)
Nebraska	1,169	0	1,169	1,195	1,246	(51)
North Dakota	354	(7)	361	289	316	(34)
Ohio	6,260	(235)	6,495	5,887	6,279	(627)
South Dakota	442	(24)	466	403	422	(43)
Wisconsin	3,299	(120)	3,419	3,030	3,264	(354)
Midwest Subtotal	38,782	(1,477)	40,259	36,065	38,540	(3,952)
South						
Alabama	2,260	(304)	2,564	2,079	2,228	(453)
Arkansas	1,222	(80)	1,302	1,220	1,268	(128)
Delaware	365	(31)	396	382	409	(58)
District of Columbia	488	(17)	505	431	449	(35)
Florida	10,062	(853)	10,915	11,954	12,253	(1,152)
Georgia	4,724	(280)	5,004	5,475	5,581	(386)
Kentucky	2,459	(32)	2,491	2,270	2,369	(131)
Louisiana	2,166	(194)	2,360	2,008	2,152	(338)
Maryland	4,000	(49)	4,049	4,269	4,441	(221)
Mississippi	1,302	(206)	1,508	1,200	1,282	(288)
North Carolina	4,587	(270)	4,857	5,311	5,500	(459)
Oklahoma	1,946	(15)	1,961	1,918	2,036	(133)

	2012			2025 Projected		
Region/State	**Supply**	**Shortage as captured by DHPSA**	**Demand (2012 Supply + shortage as captured by DHPSAs)**	**Supply**	**Demand**	**Difference [Supply-(Demand +DHPSA)]**
South Carolina	2,309	(162)	2,471	2,382	2,504	(284)
Tennessee	3,351	(353)	3,704	3,381	3,564	(536)
Texas	13,087	(354)	13,441	17,365	17,501	(490)
Virginia	4,781	(123)	4,904	5,265	5,372	(230)
West Virginia	891	(39)	930	701	761	(99)
South Subtotal	60,000	(3,362)	63,362	67,611	69,670	(5,421)
West						
Alaska	559	(8)	567	618	641	(31)
Arizona	4,016	(396)	4,412	5,702	5,711	(405)
California	29,152	(193)	29,345	33,799	34,840	(1,234)
Colorado	3,780	(82)	3,862	4,490	4,598	(190)
Hawaii	1,142	(6)	1,148	1,197	1,241	(50)
Idaho	1,021	(54)	1,075	1,083	1,153	(124)
Montana	596	(28)	624	576	598	(50)
Nevada	1,443	(70)	1,513	2,117	2,136	(89)
New Mexico	941	(139)	1,080	1,090	1,149	(198)
Oregon	2,858	(160)	3,018	3,104	3,187	(243)
Utah	2,070	(68)	2,138	2,263	2,324	(129)
Washington	5,188	(174)	5,362	5,778	5,933	(329)
Wyoming	266	(7)	273	232	250	(25)
West Subtotal	53,032	(1,385)	54,417	62,049	63,761	(3,097
US[a]	**190,800**	**(7,000)**	**197,800**	**202,600**	**211,200**	**(15,600)**

Source: 2010 American Dental Association (ADA) Master file combined with published statistics from ADA and estimates from HWSM

Notes: Negative numbers are in parenthesis; [a] Numbers are rounded to the nearest 100.

National Trends in Dental Hygienist Supply and Demand:

Approximately 153,600 dental hygienists were active in the national workforce in 2012. Looking forward to 2025 using current supply determinants (such as rates of entry and workforce participation), it is estimated that approximately 42,200 dental hygienists will leave and 91,000

new hygienists will enter the workforce. Adjusting for changes in the average number of hours worked per week, the net growth of 43,600 new FTEs will result in a national workforce of 197,200 dental hygienists by 2025, an increase of 28 percent (Exhibit 3).

Assuming the current (2012) dental hygienist demand equals the current supply (153,600 FTEs), the demand for hygienists is projected to increase by 15,500 FTEs (10 percent) and will reach 169,100 FTEs by 2025. The higher growth in supply will result in an excess of 28,100 FTE hygienists by 2025.

Exhibit 3: Projected National Supply and Demand for Dental Hygienists

	Full time equivalent
Supply	
Estimated supply, 2012	153,600
Estimated supply growth, 2012-2025	43,600
New entrants	*91,000*
Attrition [a]	*(42,200)*
Change in average work hours [b]	*(5,200)*
Projected supply, 2025	197,200
Demand[c]	
Estimated demand, 2012	153,600
Estimated demand growth, 2012-2025	15,500
Projected demand, 2025	169,100
Supply in Excess of Demand, 2025	**28,100**

Source: Estimates form 2006-2012 American Community Survey and HWSM
Notes: Numbers presented are rounded to the nearest hundred; Negative numbers in parenthesis; [a] Includes retirements and mortality; [b] This represents the change in dental hygienist full time equivalents resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked; [c] The model assumes that demand and supply are equal in 2012.

State Trends in Dental Hygienist Supply and Demand:

Despite projections of an excess supply of hygienists at the national level, by 2025 five states are expected to see growth in demand for dental hygienists outpace supply, resulting in shortages (Exhibit 4).

West Virginia is projected to have the largest shortfall in 2025 (93 FTE hygienists), followed by Mississippi (48), Montana (38), South Dakota (27), and North Dakota (21). In contrast, states that currently have some of the largest numbers of hygienists (California, Florida, and Texas) are also projected to experience the largest increases in the adequacy of their hygienist supply.

Exhibit 4: Baseline and Projected Supply of and Demand for Dental Hygienists: 2012-2025

	2012	2025 Projected		
Region/State	**Supply & Demand**	**Supply**	**Demand**	**Difference (Supply-Demand)**
Northeast				
Connecticut	2,374	2,661	2,430	231
Maine	1,124	1,130	1,101	29
Massachusetts	4,542	5,161	4,516	645
New Hampshire	1,135	1,247	1,164	83
New Jersey	4,255	5,246	4,516	730
New York	7,787	9,425	7,884	1,541
Pennsylvania	6,176	6,187	5,939	248
Rhode Island	398	442	396	46
Vermont	619	682	616	66
Northeast subtotal	28,410	32,181	28,562	3,619
Midwest				
Illinois	6,045	6,412	6,112	300
Indiana	4,006	4,442	3,935	507
Iowa	1,954	2,023	1,832	191
Kansas	1,656	1,656	1,634	22
Michigan	8,295	8,742	8,160	582
Minnesota	3,192	3,531	3,325	206
Missouri	2,932	3,072	2,914	158
Nebraska	779	970	837	133
North Dakota	446	394	415	(21)
Ohio	5,563	6,391	5,570	821
South Dakota	537	494	521	(27)
Wisconsin	3,404	3,784	3,378	406
Midwest subtotal	38,809	41,911	38,633	3,278
South				

Region/State	2012	2025 Projected		
	Supply & Demand	Supply	Demand	Difference (Supply-Demand)
Alabama	3,814	4,516	3,788	728
Arkansas	1,169	1,306	1,204	102
Delaware	412	452	445	7
District of Columbia	--	--	--	--
Florida	9,096	13,498	10,730	2,768
Georgia	5,057	6,628	5,704	924
Kentucky	1,919	1,904	1,853	51
Louisiana	1,595	1,693	1,573	120
Maryland	2,894	3,642	3,253	389
Mississippi	1,515	1,448	1,496	(48)
North Carolina	4,775	6,343	5,485	858
Oklahoma	1,686	2,000	1,748	252
South Carolina	2,057	2,514	2,201	313
Tennessee	2,924	3,567	3,089	478
Texas	9,576	16,201	12,877	3,324
Virginia	3,955	5,062	4,420	642
West Virginia	1,259	1,072	1,165	(93)
South subtotal	53,703	71,846	61,031	10,815
West				
Alaska	416	554	480	74
Arizona	3,206	5,875	4,476	1,399
California	13,746	23,304	18,150	5,154
Colorado	2,425	4,065	3,062	1,003
Hawaii	846	1,112	927	185
Idaho	867	1,067	966	101
Montana	546	509	547	(38)
Nevada	960	1,994	1,489	505
New Mexico	715	1,156	865	291
Oregon	2,568	3,260	2,823	437
Utah	1,761	2,034	1,958	76
Washington	4,334	6,012	4,930	1,082
Wyoming	259	286	245	41
West subtotal	32,649	51,228	40,918	10,310
U.S.[a,b]	**153,600**	**197,200**	**169,100**	**28,100**

	2012	2025 Projected		
Region/State	Supply & Demand	Supply	Demand	Difference (Supply-Demand)

Source: Estimates form 2006-2012 American Community Survey and HWSM
Notes: Negative numbers in parenthesis; Data for Washington, D.C. are not presented separately because small sample size in ACS generated unstable supply estimates; [a] Numbers are rounded to the nearest hundred; [b] Includes Washington, D.C.

LIMITATIONS

The HWSM assumes that the labor markets for dentists and dental hygienists are currently in balance[7] (i.e., supply and demand are equal in the base year) except for the number of dentists that would be needed to de-designate DHPSAs. The DHPSA numbers are used as a proxy for the base-year shortfall for dentists since it is the only federal measure of shortage currently available. Therefore, the analysis is limited as it does not account for shortages that may exist in areas that are not designated as DHPSAs. Nor does it account for any current shortages in hygienists, as they are not included in the DHPSA methodology.[8]

The HWSM also assumes that the future production of dentists and dental hygienists will remain consistent with the recent historical patterns, except for the additional supply of dentists that will come from new training slots in the eight new dental schools that are scheduled to open over the next few years. Even small deviations in the parameters of the projections (such as changes in hours worked, enrollments or retirement patterns) from the assumed patterns could have a notable effect on future supply of dentists and dental hygienists.

Data limitations precluded the inclusion of dental insurance as a determinant of the demand for dental services. With the implementation of the Affordable Care Act (ACA), the number of individuals with dental insurance is likely to increase. It has been suggested that by 2018, the ACA will increase the number of children with dental benefits by about 15 percent and the number of adults with dental benefits by about 5 percent. Additionally, 12.4 million adults may

[7] Frank, R.H. *Microeconomics and Behavior*, Chapter 2, McGraw-Hill/Irwin Series in Economics. 2010.
[8] U.S. Department of Health and Human Services, Health Resources and Services Administration, *Dental HPSA Designation Overview* available at http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/dentalhpsaoverview.html. Accessed December 2014.

gain emergency only or limited dental benefits through expanded state Medicaid programs[9], but these numbers represent an upper bound as all states may not participate in the Medicaid expansion. Also, limited dental benefits are not expected to remove critical access problems and may only have a marginal impact on demand. However, to the extent that dental insurance coverage is positively associated with demand for services,[10] the actual shortage of dentists in 2025 may exceed the estimated shortage reported here.

CONCLUSIONS

The demand for dental care services is projected to grow on a national level, attributable primarily to future demographic changes. Supply of the oral health workforce is also expected to grow. However, the growth in the supply of dentists in 2025 will be smaller than that of demand, leading to a significant unmet demand nationally. This unmet demand will likely exacerbate access problems for underserved populations who forgo basic oral health care because of lack of proximity to a provider, inability to pay for care, and limited oral health literacy. Over 46 million people in the U.S. currently live in DHPSAs, lacking basic access to dental care. In addition to approximately 7,000 FTE dentists needed to eliminate these shortage designations, [11] HWSM projections show that up to 8,600 additional dentists (for a total of 15,600 dentists), may be required for the national supply of dentists to be adequate in 2025. In contrast to the projected shortage in the supply of dentists, dental hygienist supply is projected to be more than adequate to meet the requirements in 2025.

States are projected to vary widely in terms of their ability to meet the demands for dentists and dental hygienists in 2025. Analysis at the state-level shows that while disparities in access to dental care and oral health persists nationwide, [12,13] supply constraints in some states may create

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[9] American Dental Association, Affordable Care Act Expands Dental Benefits for Children but Does Not Address Critical Access to Dental Care Issues. Accessed at http://www.ada.org/sections/professionalResources/pdfs/HPRCBrief_0413_3.pdf.

[10] Institute of Medicine and National Research Council. 2011. Improving access to oral health care for vulnerable and underserved populations. Washington, DC: The National Academy Press.

[11] Shortage Designation: Health Professional Shortage Areas & Medically Underserved Areas/Populations. U.S. DHHS, HRSA, 2013. http://datawarehouse.hrsa.gov/.

[12] Dye BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected Healthy People 2020 oral health objectives for the United States, 2009–2010. NCHS data brief, no 104. Hyattsville, MD: National Center for Health Statistics. 2012.

[13] Centers for Disease Control and Prevention, National Center for Health Statistics, Health, United States, 2012: With Special Feature on Emergency Care. Hyattsville, MD. May 2013, citing the National Health Interview Survey, See: http://www.cdc.gov/nchs/hus.htm.

additional challenges to oral health service provision, [14] with expected shortages in the supply of dentists ranging from about 25 FTE to over a thousand in 2025. The high unmet demand in some states like California, Florida, and New York, will likely exacerbate access problems for the underserved populations that live in those states.

Changes in oral health delivery and in health systems may somewhat ameliorate dentist shortages by maximizing the productivity of the existing dental health workforce. Across the country, states are grappling with ways to expand access to dental care.[15,16] For example, Minnesota and Maine, are exploring ways to expand the reach of dentists by providing additional training to dental hygienists.[17] HRSA is providing support to the states for developing innovative programs to address oral health workforce needs in DPHSAs.[18] HRSA is also supporting the training of advanced dental hygienists who will expand dental hygienist roles to the maximum allowable under state scope practice laws.[19] However, training programs to support expanded roles are in their infancy and effects on dentist supply projections are not yet known.

[14] Institute of Medicine, Advancing Oral Health in America. 2011. Washington, D.C. National Academies Press citing Isong et.al, 2010.
[15] National Governors Association Report: The role of dental hygienist in providing access to oral health care. Accessed February 2014 from http://www.nga.org/files/live/sites/NGA/files/pdf/2014/1401DentalHealthCare.pdf.
[16] Institute of Medicine and National Research Council. Improving Access to oral health care for vulnerable and underserved populations. Washington DC: The National Academies Press
[17] American Dental Hygienists' Association, The Benefits of Dental Hygiene-Based Oral Health Provider Models. Accessed at www.adha.org/resources-docs/75112_Hygiene_Based_Workforce_Models.pdf.
[18] US DHHS, HRSA. Grants to Support Oral Health Workforce Activities. Funding Opportunity Number HRSA-15-052 available at http://apply07.grants.gov/apply/opportunities/instructions/oppHRSA-15-052-cfda93.236-cidHRSA-15-052-instructions.pdf.
[19] US DHHS, HRSA. Predoctoral Training in General, Pediatric and Public Health Dentistry and Dental Hygiene. Funding Opportunity Number HRSA-15-50 available at http://apply07.grants.gov/apply/opportunities/instructions/oppHRSA-15-050-cfda93.059-cidHRSA-15-050-instructions.pdf.