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BOWEN CENTER FOR HEALTH
WORKFORCE RESEARCH & POLICY

2018 Oral Health Licensure Survey Data Report

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Executive Summary

Determining the supply and distribution of Indiana's oral health workforce is crucial to understanding the capacity available to meet oral healthcare needs of Indiana citizens. Such data can also be used to inform initiatives aimed at increasing diversity, cultural competency, quality of care, and dental care access in underserved communities.¹ Data presented in this report provide a snapshot of key demographic and practice characteristics for the oral health workforce in Indiana.

The 2018 Indiana Oral Health Licensure Survey Data Report presents key information derived from data collected from the dentist and dental hygienist re-licensure survey administered by the Indiana Professional Licensing Agency (IPLA) during the license renewal period. In 2018, 4,001 dentists and 4,996 dental hygienists renewed their professional licenses. Of those who renewed their license, 2,697 dentists (67.4%) and 3,521 dental hygienists (70.4%) reported actively practicing and had a valid Indiana license address and were included in this report.

Marion County encompasses the largest reported oral health workforce full-time equivalents (FTEs): 376.7 FTE for dentists and 235.2 FTE for dental hygienists. Based on the survey samples, there are significantly fewer oral health professionals available to serve Indiana citizens in rural, less populous counties such as LaGrange, Crawford and Jennings Counties. Additionally, a relatively low proportion of dentists reported offering services to low-income persons (i.e. accepting Medicaid).

The 2018 Indiana Oral Health Licensure Survey Data Report details data on the dentist and dental hygienist professions to provide stakeholders with information needed to improve the quality and accessibility of oral health care for Indiana residents through policymaking, workforce development, and resource allocation. Additional analyses and reports may be made available upon submission of a technical assistance request at family.medicine.iu.edu/hws.

¹ Cohen JJ, Gabriel BA, Terrell C. The case for diversity in the health care workforce. *Health Affairs (Millwood)*. 2002; 21(5): 90-102

Section I: Background Information

Introduction

The Bowen Center for Health Workforce Research and Policy (Bowen Center) aims to improve population health by informing health workforce policy through data management, community engagement and original research. The Bowen Center has a rich history of collecting, analyzing, and disseminating health workforce data and research for the State of Indiana. Understanding the status of Indiana's health care workforce is critical to ensuring that Indiana residents have access to high quality care, to developing programs that will train practitioners to meet future needs and to recruiting and retaining health care professionals in Indiana.

The 2018 Indiana Oral Health Licensure Survey Data Report presents key information and data collected from the dentist and dental hygienist re-licensure surveys administered by the Indiana Professional Licensing Agency (IPLA) during the biennial license renewal period. The report includes data on a large sample of dentists and dental hygienists that may be used to promote meaningful policy discussion and to inform evidence-based health workforce policy development.

The data are presented in two sections: (1) dentist workforce and (2) dental hygienist workforce. Both sections contain demographic, educational and professional characteristics as well as essential supply and geographic distribution information.

Methods

Survey Administration

Indiana dentists who renewed their license using IPLA's online system (n=4,001) were invited to complete a voluntary survey which collected data on demographics, education and professional practice characteristics. Per the Indiana State Department of Health (ISDH) data reporting needs, this survey was updated from surveys administered in previous years to include questions required to support federal shortage area designations.

Indiana's dental hygienist re-licensure survey was adapted from the dental hygienist Minimum Data Set (MDS) created by the Health Resources and Services Administration (HRSA), National Center for Health Workforce Analysis. HRSA has established MDS tools for many licensed health professionals to facilitate the establishment of national databases with consistent core data elements covering demographics, educational, credentialing, and practice characteristics. Indiana's dental hygiene re-licensure survey was administered by the IPLA during the biennial licensure renewal period.

Dataset Construction

Data on dentists and dental hygienists presented in this report originated from two sources: base license file and licensure survey file. The base license file contained administrative data including license status, expiration date, license number, and date of birth. These data were used to calculate age and apply the inclusion and exclusion criteria used to generate the report sample. The licensure survey data file contained demographic, educational and professional characteristics reported by dentists and dental hygienists during the license renewal cycle.

The licensure survey file underwent cleaning and coding procedures developed by the Bowen Center.² After these procedures were completed, the base license file and licensure survey file were merged on license number to create a Dentist Master File and Dental Hygienist Master File. These master files were then transferred to the department of Biostatistics to be imported into the Indiana Health Professions Database.

² Complete documentation of procedures can be found on IUPUI ScholarWorks: <https://hdl.handle.net/1805/16704>

License address data were accessed by the Polis Center for address cleaning and geocoding. This process involves standardizing addresses using 360Science software and geocoding using address locator software. These procedures returned the geographical coordinates of the license address as well as the county federal information processing standards (FIPS) code and census block ID. These values are then returned to the Indiana Health Professions Database to be used for data reporting.

Sample selection criteria were applied to the two master files to determine the samples of dentists and dental hygienists actively practicing in Indiana. The following criteria were applied:

1. Dentist or dental hygienist renewed license online in 2018;
2. Dentist or dental hygienist responded to the respective 2018 re-licensure survey;
3. Dentist or dental hygienist holds an active, probationary or valid to practice while reviewed license;
4. Dentist or dental hygienist reported actively working in dentistry or dental hygiene;
5. Dentist or dental hygienist reported an Indiana license address; and
6. Dentist or dental hygienist whose license address could be confirmed through geocoding

Dentists and dental hygienists who did not meet the inclusion criteria were excluded from the sample. The final sample includes 2,697 dentists (67.4%) and 3,521 dental hygienists (70.4%) who held an active, valid to practice while reviewed or probationary license; reported actively working in dentistry or dental hygiene; and provided an Indiana practice location that could be geocoded. The inclusion and exclusion criteria applied to the merged datasets for dentists and dental hygienists are presented on the following two pages.

Dentist Workforce Inclusion and Exclusion Criteria

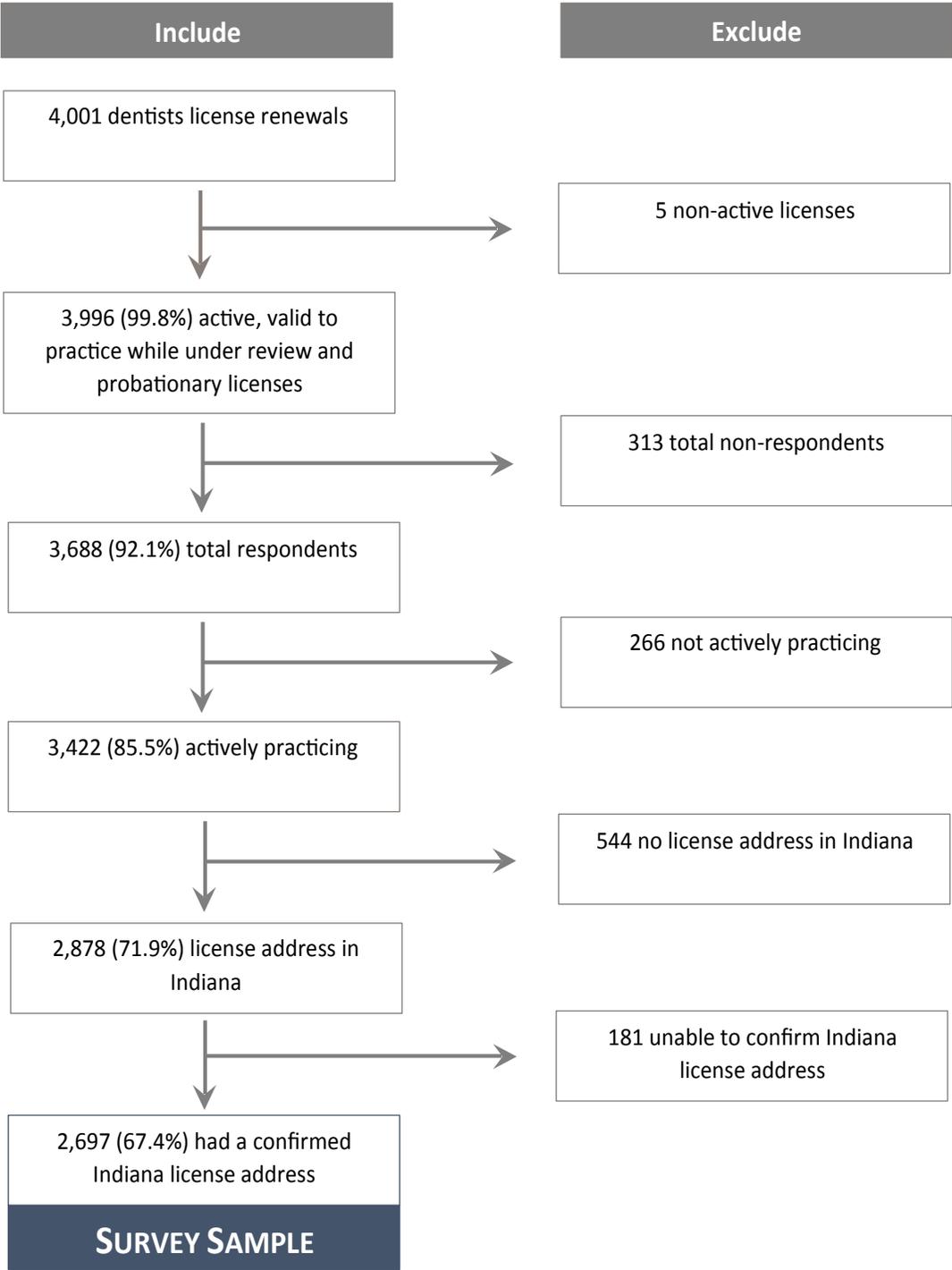


Figure 1.1: Dentist Survey Sample Selection Criteria

Dental Hygienists Workforce Inclusion and Exclusion Criteria

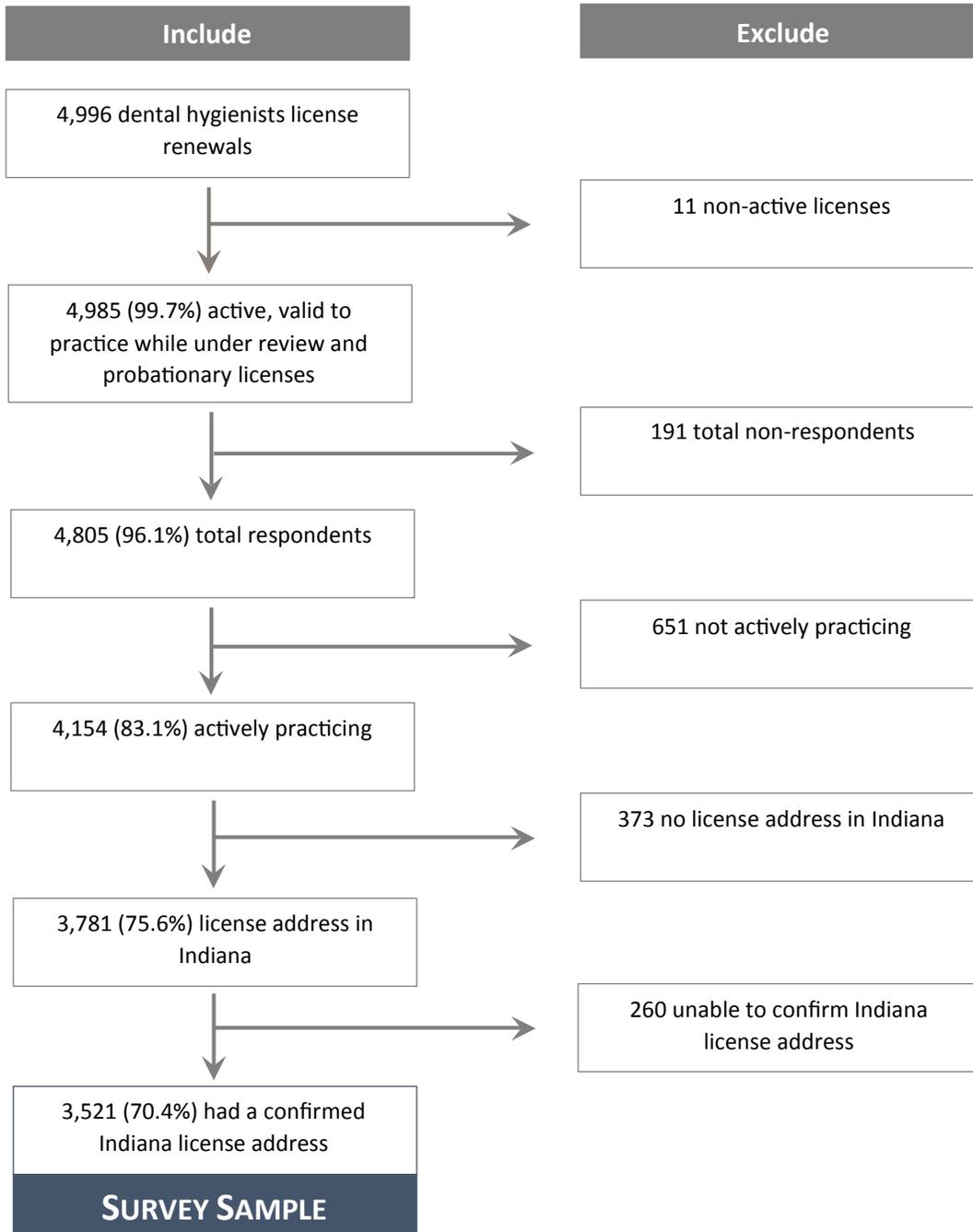


Figure 1.2: Dental Hygienist Survey Sample Selection Criteria

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FTE Assignment

A full-time equivalent (FTE) was assigned to each individual based upon the survey response indicating average number of hours per week spent in direct patient care. To accurately map the distribution and capacity of the dentist and dental hygienist workforce throughout Indiana, FTEs were assigned to each individual practitioner. Geographic information system (GIS) maps present the distribution of the dentist and dental hygienist workforce by FTE throughout the report. Table 1.1 outlines the FTE assignment to each hourly category.

Table 1.1: FTE Calculation Based on Reported Hours per week in Patient Care

Reported Hours per Week in Patient Care	Assigned FTE
0	0
1 – 4	0.1
5 – 8	0.2
9 – 12	0.3
13 – 16	0.4
17 – 20	0.5
21 – 24	0.6
25 – 28	0.7
29 – 32	0.8
33 – 36	0.9
37 – 40	1.0
41 or more	1.0

Rurality

County rurality was determined by population. If a county had a population of at least 50,000 it was designated as “urban”. If the county population was less than 50,000 the county was designated as “rural”.

Limitations

The analyses and data presented in this report have several key limitations that should be taken into account when utilizing and interpreting these data. The information in this report was collected in self-reported response format as part of a voluntary survey. As is the case with all survey research, it is likely there is some level of response bias. In this case, it is possible responses to a question do not reflect the absolute practice characteristics of a provider. Although these self-reported data may not be considered absolute, they provide a method of gauging dental practice characteristics. This report should be used only to inform policy discussion.

Additionally, the data presented in this report only represent a sample of the entire dentist and dental hygienist workforce. Due to missing data and the voluntary nature of the survey it is likely some dentists and dental hygienists are not represented in the final samples of this report. Also, some survey respondents did not answer every question, therefore the tables presented throughout this report include non-respondents to each question. Although this report contains samples of the dentists and dental hygienists who renewed their license, these are fairly large samples (67.4% of dentists and 70.4% of dental hygienists) and may be valuable for informing health workforce policy and programming.

Lastly, to meet State of Indiana needs and because of changes in the methodology for administration of the dentist and dental hygienist re-licensure surveys, several updated versions have resulted over the years. Therefore, a conservative approach was taken and data trend analyses are not presented in this report.

Supplemental Data Tables

The primary purpose of the 2018 Indiana Oral Health Licensure Survey Data Report is to provide a snapshot of key information pertaining to the dental and dental hygienist workforce in Indiana. This report only presents highlights of the re-licensure survey data. Additional data tables can be requested online through the Bowen Center at family.medicine.iu.edu/hws.

Section II: Dental Workforce

Demographic Characteristics

The average age of Indiana dentists is 50.2 years. Male dentists are older than their female counterparts: the average age of male dentists is 52.9 with 13% being under the age of 35, while female dentists have an average age of 43.6 with 28% being under the age of 35. Demographic data demonstrate little racial and ethnic diversity within these professions. The majority identified as non-Hispanic (85.6%) and white (87.2%). Asian dentists make up the largest minority at 5.6%. Table 2.1 provides more details on the demographic characteristics of the dental workforce.

Table 2.1: Dentist Demographic Characteristics

	Female		Male		Non-Respondents		Total	
Mean Age	43.6		52.9		55.2		50.2	
	N	%	N	%	N	%	N	%
Age Groups								
Under 35	222	28.0	244	13.0	2	8.7	468	17.4
35-44	238	30.0	335	17.8	3	13.0	576	21.4
45-54	187	23.6	375	19.9	4	17.4	566	21.0
55-64	115	14.5	552	29.3	7	30.4	674	25.0
65 and Older	30	3.8	364	19.4	7	30.4	401	14.9
Non-Respondents	1	0.1	11	0.6	0	0.0	12	0.4
Total	793	100.0	1,881	100.0	23	100.0	2,697	100.0
Ethnicity								
Hispanic or Latino	32	4.0	30	1.6	1	4.3	63	2.3
Not Hispanic or Latino	688	86.8	1,615	85.9	5	21.7	2,308	85.6
Non-Respondents	73	9.2	236	12.5	17	73.9	326	12.1
Total	793	100.0	1,881	100.0	23	100.0	2,697	100.0
Race								
White	626	78.9	1,709	90.9	17	73.9	2,352	87.2
Asian	79	10.0	71	3.8	1	4.3	151	5.6
Black or African American	36	4.5	42	2.2	1	4.3	79	2.9
Native Hawaiian/Pacific Islander	3	0.4	4	0.2	0	0.0	7	0.3
American Indian or Alaska Native	1	0.1	0	0.0	0	0.0	1	0.0
Other	19	2.4	15	0.8	1	4.3	35	1.3
Multiracial	19	2.4	21	1.1	0	0.0	40	1.5
Non-Respondents	10	1.3	19	1.0	3	13.0	32	1.2
Total	793	100.0	1,881	100.0	23	100.0	2,697	100.0

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: Age was calculated as the difference between the respondent's date of birth and the date of survey completion. Data regarding gender, race and ethnicity were derived from questions 1, 2, and 3 in the 2018 Dentist Re-Licensure Survey.

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Educational Characteristics

Educational characteristics are provided in Table 2.2. Self-reported educational characteristics demonstrate the majority of dentists obtained professional training in Indiana (81.4%) followed by a contiguous state (11%). Of the dentists who reported their highest education, the majority (68.3%) reported that they did not complete a dental residency. However, General Practice Residency (6.9%) was the most commonly reported residency, followed by Orthodontics and Dentofacial Orthopedics (5.8%).

Table 2.2: Dentist Education and Training Characteristics

Location of Training Program	N	%
Indiana	2,195	81.4
Contiguous State	296	11.0
Other US State	196	7.3
Another Country	10	0.4
Non-Respondents	0	0.0
Total	2,697	100
Highest Level of Training in Dentistry	N	%
Dental School-No residency completed	1,843	68.3
Residency-Advanced Education in General Dentistry Programs (AEGD)	74	2.7
Residency-Advanced General Dentistry Education Programs in Dental Anesthesiology	7	0.3
Residency-Advanced General Dentistry Education Programs in Oral Medicine	0	0.0
Residency-Advanced General Dentistry Education Programs in Orofacial Pain	1	0.0
Residency-Dental Public Health	2	0.1
Residency-Endodontics	69	2.6
Residency-General Practice Residency	185	6.9
Residency-Oral and Maxillofacial Pathology	6	0.2
Residency-Oral and Maxillofacial Radiology	2	0.1
Residency-Oral and Maxillofacial Surgery	104	3.9
Residency-Orthodontics and Dentofacial Orthopedics	156	5.8
Residency-Pediatric Dentistry	126	4.7
Residency-Periodontics	53	2.0
Residency-Prosthodontics	38	1.4
Residency-Other	19	0.7
Non-Respondents	12	0.4
Total	2,697	100

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: Data were derived from questions 4 and 5 in the 2018 Dentist Re-Licensure Survey.

Professional and Practice Characteristics

Professionally, just over three fourths (76.1%) of dentists reported their dental practice type as General Dental Practice, followed by Orthodontics and Dentofacial Orthopedics (5.6%). Most (94.7%) also reported their primary role as a Practicing Dentist (General Dentist or Specialist), while a small percentage reported their primary role as a Dental Educator (2.9%). Additional details on dentists' professional characteristics can be found in Table 2.3.

Table 2.3: Dentist Professional Characteristics

Dental Practice Type	N	%
General Dental Practice	2,052	76.1
Orthodontics and Dentofacial Orthopedics	151	5.6
Periodontics	128	4.7
Oral and Maxillofacial Surgery	103	3.8
Endodontics	71	2.6
Prosthodontics	48	1.8
Dental Public Health	44	1.6
Pediatric Dentistry	39	1.4
Other	27	1.0
Oral and Maxillofacial Pathology	6	0.2
Oral and Maxillofacial Radiology	3	0.1
Non-Respondents	25	0.9
Total	2,697	100.0
Primary Role	N	%
Practicing Dentist (General Dentist or Specialist)	2,554	94.7
Dental Educator (Academia)	78	2.9
Other - Dental Related	16	0.6
Federal Services Professional	9	0.3
Dental/Insurance Industry Consultant	4	0.1
Dental Researcher	4	0.1
Other - Non-Dental Related	0	0.0
Non-Respondents	32	1.2
Total	2,697	100.0

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: Data were derived from questions 7 and 8 in the 2018 Dentist Re-Licensure Survey.

Dentists' practice characteristics are provided in Tables 2.4-2.6 on the following two pages. More than half (54.2%) of Dentists reported their primary practice setting as Solo Practice followed by Group Practice (20.1%) and Partnership (16.0%) (Table 2.4 on the following page).

Table 2.5 on the following page presents data regarding services provided to low-income patients. Such data are collected and used to support needs assessments which identifying Dental Health Professional Shortage Areas in Indiana.³ Over half (53.3%) of dentists reported that they do not accept Indiana Medicaid patients followed by 8.5% reported Indiana Medicaid accounts for > 0% - 5 % of their practice. In contrast, 6.7% of dentists reported having greater than 50% of Indiana Medicaid Patients in their practice. The majority of dentists reported that they do not offer a sliding fee scale at their practice location (81.5%). It is important to note that "sliding fee scale" is a federally-defined payment schedule. Therefore, data provided in this table do not reflect all charity or discount services offered by dentists.

³To learn more about health professional shortage areas and how they help Hoosier communities visit the Health Resources and Services Administration Health Workforce page: <https://bhwh.hrsa.gov/shortage-designation/what-is-shortage-designation>

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Table 2.4: Dentist Primary Practice Characteristics

Primary Practice Setting	N	%
Dental Office Practice - Solo Practice	1,462	54.2
Dental Office Practice - Group Practice	542	20.1
Dental Office Practice - Partnership	431	16.0
Other Setting	55	2.0
Hospital/Clinic	49	1.8
Health Center (CHC/FQHC/FQHC look-alike)	32	1.2
Federal Government Hospital/Clinic (includes military)	18	0.7
School Health Service	19	0.7
Correctional Facility	12	0.4
Longer-Term Care/Nursing Home/Extended Care Facility (non-hospital)	7	0.3
Other Public Health/Community Health Setting	8	0.3
Mobile Unit Dentistry	5	0.2
Local Health Department	4	0.1
Indian Health Service	1	0.0
Home Health Setting	0	0.0
Headstart (including early Healthstart)	0	0.0
Staffing Organization	0	0.0
Teledentistry	0	0.0
Non-Respondents	52	1.9
Total	2,697	100.0

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: Data were derived from question 13 in the 2018 Dentist Re-Licensure Survey.

Table 2.5: Dentist Patient Panel Characteristics

Percent of Patient Panel on Medicaid	N	%
I do not accept Medicaid	1,437	53.3
I accept Medicaid but have no Medicaid patients	23	0.9
Indiana Medicaid accounts for >0% - 5% of my practice	230	8.5
Indiana Medicaid accounts for 6% - 10% of my practice	179	6.6
Indiana Medicaid accounts for 11% - 20% of my practice	178	6.6
Indiana Medicaid accounts for 21% - 30% of my practice	195	7.2
Indiana Medicaid accounts for 31% - 50% of my practice	190	7.0
Indiana Medicaid accounts for greater than 50% of my practice	182	6.7
Non-Respondents	83	3.1
Total	2,697	100.0
Percent of Patient Panel on a Sliding Fee Scale*	N	%
I do not offer a sliding fee scale	2,199	81.5
I offer a sliding fee scale but have no patients on this payment schedule	50	1.9
Sliding fee patients account for >0% - 5% of my practice	21	0.8
Sliding fee patients account for 6% - 10% of my practice	98	3.6
Sliding fee patients account for 11% - 20% of my practice	43	1.6
Sliding fee patients account for 21% - 30% of my practice	51	1.9
Sliding fee patients account for 31% - 50% of my practice	44	1.6
Sliding fee patients account for greater than 50% of my practice	40	1.5
Non-Respondents	151	5.6
Total	2,697	100.0

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: According to HRSA (Health Resources & Services Administration), the guidelines for a Sliding Fee Scale discount are "A full discount to individuals and families with annual incomes at or below 100% of the Federal Poverty Guidelines, except that nominal charges for service may be collected from such individuals and families where imposition of such fees is consistent with project goals and no discount to individuals and families with annual incomes greater than twice those set forth in such Guidelines [200% of the Federal Poverty Guidelines]" (HRSA, 2018, para. 5-6). The frequency of dentists offering a sliding fee scale may not include Dentists who offer a discount or charitable service to lower income communities. Data were derived from questions 16 and 19 in the 2018 Dentist Re-Licensure Survey.

Workforce Capacity and Distribution

Regarding time spent in patient care, the greatest percentage (26.1%) of dentists reported working between 33-36 hours per week followed by 22.2% of dentists who work 29-32 hours per week (Table 2.6).

Table 2.6: Dentist Average Hours per week in Patient Care

Average hours/week in patient care	N	%
0 hours per week	24	0.9
1-4 hours per week	45	1.7
5-8 hours per week	66	2.4
9-12 hours per week	42	1.6
13-16 hours per week	111	4.1
17-20 hours per week	157	5.8
21-24 hours per week	196	7.3
25-28 hours per week	282	10.5
29-32 hours per week	600	22.2
33-36 hours per week	703	26.1
37-40 hours per week	317	11.8
41 or more hours per week	78	2.9
Non-Respondents	76	2.8
Total	2,697	100.0

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: Data were derived from question 15 in the 2018 Dentist Re-Licensure Survey.

Geographic distribution of Indiana dentists are displayed in Table 2.7 and Map 2.1 on the following three pages. Population-to-Provider FTE (PPR) ratios are useful for measuring community level workforce capacity, a key indicator of access to care. According to the Health Services and Resources Administration (HRSA), a geographic region with a population to dentist FTE ratio greater than 5,000:1 is considered to have insufficient dentist capacity. An examination of self-reported dentist FTE in Indiana identifies that fifteen counties have PPRs above 5,000:1, indicating insufficient capacity. Five of these counties are designated as urban. The remaining seventy-six counties have PPRs that fall below the HRSA threshold. Map 2.1 represents dental workforce capacity for the general population. They may not represent capacity available for special or low-income populations. Additionally, while PPRs are helpful measures of capacity, the formal process for identifying a federal DHPSA may include additional measures.

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Table 2.7: Geographic Distribution of Indiana Dentists

County	Rurality	General Dentistry		Pediatric Dentistry		Other Dental Practice		Total Dentists	
		FTE	Population to General Dentist FTE	FTE	Population to Pediatric Dentist FTE	FTE	Population to Other Dental Type FTE	FTE	Population to Total Dentist FTE
Adams	Rural	6.9	5,020	-	-	0.5	69,284	7.4	4,681
Allen	Urban	95.9	3,789	4.6	79,011	25	14,538	127.1	2,859
Bartholomew	Urban	23.3	3,411	-	-	5.7	13,945	29	2,740
Benton	Rural	1	8,752	-	-	-	-	1	8,752
Blackford	Rural	1	12,476	0.3	41,586	-	-	1.3	9,596
Boone	Urban	28.5	2,123	-	-	6.6	9,168	35.1	1,723
Brown	Urban	0.8	18,763	-	-	-	-	0.8	18,763
Carroll	Urban	0.8	25,017	-	-	-	-	0.8	25,017
Cass	Rural	7.3	5,270	-	-	0.8	48,095	8.1	4,750
Clark	Urban	18.1	6,253	-	-	3.6	31,439	21.7	5,215
Clay	Urban	2.5	10,674	-	-	0.6	44,476	3.1	8,608
Clinton	Rural	8.3	3,956	-	-	-	-	8.3	3,956
Crawford	Rural	0.7	15,130	-	-	-	-	0.7	15,130
Daviess	Rural	3.3	9,821	-	-	0.8	40,513	4.1	7,905
Dearborn	Urban	4.7	10,570	-	-	-	-	4.7	10,570
Decatur	Rural	4.5	5,831	-	-	-	-	4.5	5,831
DeKalb	Rural	11.2	3,790	-	-	1.9	22,341	13.1	3,240
Delaware	Urban	26.4	4,444	-	-	8.7	13,486	35.1	3,342
Dubois	Rural	12.8	3,303	-	-	4.9	8,630	17.7	2,389
Elkhart	Urban	37.3	5,380	0.4	501,712	4.6	43,627	42.3	4,744
Fayette	Rural	3.2	7,429	-	-	-	-	3.2	7,429
Floyd	Urban	21.3	3,563	-	-	8.6	8,825	29.9	2,538
Fountain	Rural	1.9	8,888	-	-	-	-	1.9	8,888
Franklin	Urban	2.3	9,971	-	-	1.6	14,334	3.9	5,880
Fulton	Rural	5.1	4,024	-	-	0.9	22,807	6	3,421
Gibson	Urban	8.8	3,825	-	-	-	-	8.8	3,825
Grant	Rural	12.5	5,511	-	-	2.6	26,498	15.1	4,562
Greene	Urban	8.6	3,815	-	-	1.5	21,876	10.1	3,249
Hamilton	Urban	157.5	1,883	4	74,158	67.2	4,414	231.1	1,283
Hancock	Urban	16.4	4,349	-	-	0.6	118,880	17	4,195
Harrison	Urban	6.1	6,431	0.5	78,460	-	-	6.6	5,943
Hendricks	Urban	48.2	3,183	-	-	10.1	15,191	58.3	2,631
Henry	Rural	4.3	11,429	-	-	-	-	4.3	11,429
Howard	Urban	22.4	3,694	-	-	5.7	14,520	28.3	2,924
Huntington	Rural	8.4	4,388	-	-	-	-	9.4	3,921
Jackson	Rural	5.7	7,626	-	-	1.4	31,050	7.1	6,122
Jasper	Urban	3.7	9,040	-	-	-	-	3.7	9,040
Jay	Rural	2.6	8,175	-	-	-	-	2.6	8,175
Jefferson	Rural	12.2	2,660	-	-	1.9	17,080	14.1	2,301
Jennings	Rural	0.6	46,855	-	-	-	-	0.6	46,855
Johnson	Urban	48.4	3,009	-	-	11.1	13,121	59.5	2,447
Knox	Rural	9	4,229	-	-	0.8	47,577	9.8	3,883
Kosciusko	Rural	10.7	7,288	-	-	-	-	10.7	7,288
LaGrange	Rural	2.7	14,105	-	-	-	-	2.7	14,105
Lake	Urban	127.5	3,855	1	491,596	22	22,345	152.2	3,229

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: FTE data were derived from question 14 in the 2018 Dentist Re-Licensure Survey. County location was based on location of dentists' license address.

Data Report

Table 2.7: Geographic Distribution of Indiana Dentists

County	Rurality	General Dentistry		Pediatric Dentistry		Other Dental Practice		Total Dentists	
		FTE	Population to General Dentist FTE	FTE	Population to Pediatric Dentist FTE	FTE	Population to Other Dental Type FTE	FTE	Population to Total Dentist FTE
LaPorte	Urban	23.3	4,775	-	-	2.1	52,990	25.4	4,381
Lawrence	Rural	6	7,635	-	-	0.7	65,448	6.7	6,837
Madison	Urban	24.9	5,232	-	-	4	32,570	29.6	4,401
Marion	Urban	270.1	3,429	5.6	165,416	99.5	9,309	376.7	2,459
Marshall	Rural	8.6	5,460	-	-	-	-	8.6	5,460
Martin	Rural	-	-	-	-	-	-	0.9	11,402
Miami	Rural	4	9,052	-	-	-	-	4	9,052
Monroe	Urban	30	4,746	0.2	712,020	10.2	13,961	42.3	3,366
Montgomery	Rural	5.9	6,469	-	-	2.4	15,905	8.3	4,599
Morgan	Urban	10.5	6,609	0.2	347,015	2.5	27,761	13.2	5,257
Newton	Urban	0.8	17,571	-	-	-	-	0.8	17,571
Noble	Rural	11	4,322	-	-	0	-	11	4,322
Ohio	Urban	1	6,033	-	-	-	-	1	6,033
Orange	Rural	0.7	28,178	-	-	-	-	0.7	28,178
Owen	Rural	1.9	11,153	-	-	-	-	1.9	11,153
Parke	Rural	3.2	5,345	-	-	1.8	9,503	5	3,421
Perry	Rural	4.1	4,735	-	-	-	-	4.1	4,735
Pike	Rural	1	12,687	-	-	-	-	1	12,687
Porter	Urban	33.6	4,957	-	-	7.9	21,084	41.5	4,013
Posey	Urban	1.6	15,979	-	-	1	25,567	2.6	9,833
Pulaski	Rural	1.5	8,698	-	-	-	-	1.5	8,698
Putnam	Urban	2.3	16,369	-	-	-	-	2.3	16,369
Randolph	Rural	1.9	13,471	-	-	-	-	1.9	13,471
Ripley	Rural	2.9	9,866	-	-	0.7	40,874	3.6	7,947
Rush	Rural	5.4	3,146	-	-	-	-	5.4	3,146
Scott	Urban	69.7	3,834	0.8	334,057	18.8	14,215	90.2	2,962
St. Joseph	Rural	2.5	9,513	-	-	-	-	2.5	9,513
Shelby	Urban	7.5	5,925	-	-	0.6	74,068	8.1	5,486
Spencer	Rural	1.8	11,586	-	-	-	-	1.8	11,586
Starke	Rural	1	23,117	-	-	-	-	1	23,117
Steuben	Rural	4.7	7,290	-	-	0.9	38,074	5.6	6,119
Sullivan	Urban	0.9	23,456	-	-	-	-	0.9	23,456
Switzerland	Rural	1	10,500	-	-	-	-	1	10,500
Tippecanoe	Urban	37.6	4,812	-	-	14.8	12,226	53	3,414
Tipton	Urban	2.2	7,078	-	-	0.4	38,932	2.6	5,989
Union	Rural	0.4	18,247	-	-	-	-	0.4	18,247
Vanderburgh	Urban	42.3	4,286	0.2	906,525	12.6	14,389	56	3,237
Vermillion	Urban	1.1	14,418	-	-	-	-	1.1	14,418
Vigo	Urban	20.9	5,180	0.9	120,297	8.7	12,444	30.5	3,549
Wabash	Rural	4.8	6,741	-	-	-	-	4.8	6,741
Warren	Rural	0.8	10,458	-	-	-	-	0.8	10,458
Warrick	Urban	13.8	4,419	-	-	4.1	14,876	17.9	3,407
Washington	Urban	4	6,982	-	-	0.9	31,033	4.9	5,700
Wayne	Rural	11.6	5,850	-	-	3.5	19,390	15.1	4,494
Wells	Urban	5.1	5,450	-	-	-	-	5.1	5,450
White	Rural	5	4,877	-	-	-	-	5	4,877
Whitley	Urban	4.1	8,129	-	-	0.7	47,614	4.8	6,943

Source: Indiana Dentist Re-Licensure Survey, 2018

Notes: FTE data were derived from question 14 in the 2018 Dentist Re-Licensure Survey. County location was based on location of dentists' license address.

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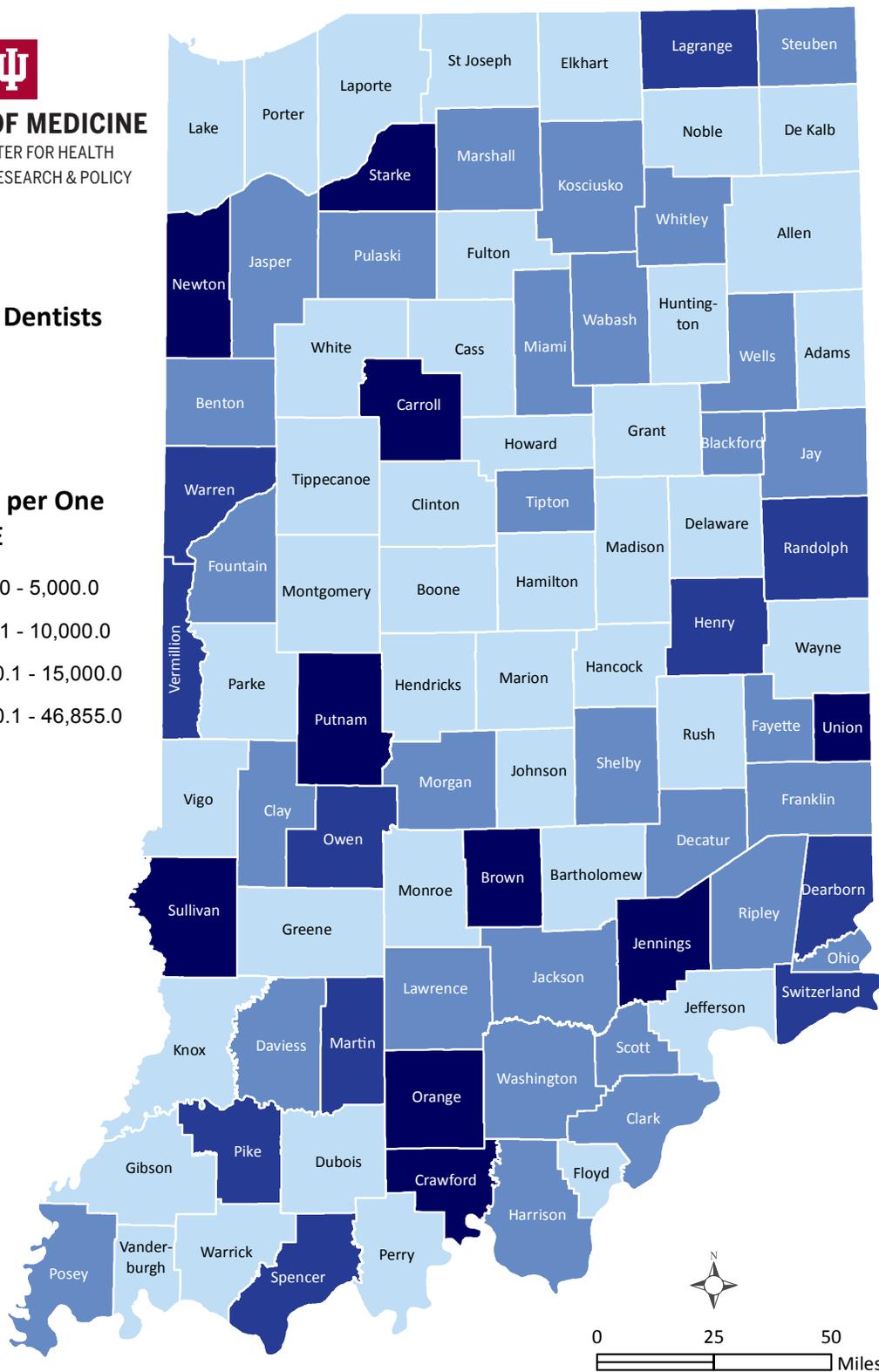


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Indiana Dentists

Population per One Dentist FTE



Source: Indiana Dentist Re-Licensure Survey, 2018; American Community Survey, 2015 5-year Estimate.

Map 2.1 Dentist Workforce Capacity, by County

Section III: Dental Hygienists

Demographic Characteristics

The average age of the dental hygienist workforce is 42.5 years. Male dental hygienists are slightly younger than their female counterparts as they have an average age of 40.6 with 40.7% being under the age of 35, while female dental hygienists have an average age of 42.5 with 33.2% being under the age of 35. Demographic data demonstrates little racial and ethnic diversity within the dental hygienist workforce. The majority identified as Non-Hispanic (84.4%) and White (95.3%). Black or African American dental hygienists make up the largest minority at 1.4%. Table 3.1 provides more details on the demographic characteristics of the dental hygienist workforce.

Table 3.1: Dental Hygienist Demographic Characteristics

	Female		Male		Non-Respondents		Total	
Mean Age	42.5		40.6		43.2		42.5	
	N	%	N	%	N	%	N	%
Age Groups								
Under 35	1,147	33.2	11	40.7	10	25.0	1,168	33.2
35-44	862	25.0	8	29.6	10	25.0	880	25.0
45-54	799	23.1	4	14.8	13	32.5	816	23.2
55-64	542	15.7	3	11.1	6	15.0	551	15.6
Over 65	94	2.7	1	3.7	1	2.5	96	2.7
Non-Respondents	10	0.3	0	0.0	0	0.0	10	0.3
Total	3,454	100.0	27	100.0	40	100.0	3,521	100.0
Ethnicity								
Hispanic or Latino	86	2.5	3	11.1	0	0.0	89	2.5
Not Hispanic or Latino	2,915	84.4	19	70.4	16	40.0	2,950	83.8
Non-Respondents	453	13.1	5	18.5	24	60.0	482	13.7
Total	3,454	100.0	27	100.0	40	100.0	3,521	100.0
Race								
White	3,293	95.3	21	77.8	32	80.0	3,346	95.0
Asian	29	0.8	0	0.0	0	0.0	29	0.8
Black or African American	43	1.2	5	18.5	2	5.0	50	1.4
Native Hawaiian/Pacific Islander	6	0.2	0	0.0	0	0.0	6	0.2
American Indian or Alaska Native	6	0.2	0	0.0	0	0.0	6	0.2
Other	0	0.0	0	0.0	0	0.0	0	0.0
Multiracial	37	1.1	0	0.0	0	0.0	37	1.1
Non-Respondents	40	1.2	1	3.7	6	15.0	47	1.3
Total	3,454	100.0	27	100.0	40	100.0	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Age was calculated as the difference between the respondent's date of birth and the date of survey completion.

Data for gender, race and ethnicity were derived from questions 1, 2, and 3 in the 2018 Dental Hygienist Re-Licensure Survey.

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Educational Characteristics

Tables 3.2-3.3 provide information on the educational characteristics of dental hygienists. Educational characteristics demonstrate that Indiana successfully retained many dental hygienists who trained in the state. For instance, 2,985 (84.8%) dental hygienists in the survey sample reported receiving their education that qualified them for their license in Indiana. Overall, majority (85.2%) reported qualifying for their license with an associate degree, while 13.7% reported qualifying for their license with a baccalaureate degree in dental hygiene. Table 3.2 provides additional details on dental hygienist qualifying education.

When asked about highest education, 67.5% of respondents reported having obtained an associate degree in dental hygiene as their highest education, followed by 18.3% reporting a baccalaureate degree in dental hygiene as their highest education. Table 3.3 provides more information on dental hygienists' highest education.

Table 3.2: Dental Hygienist Qualifying Education

Qualifying Education	Indiana		Contiguous States		Another State		Another Country (not U.S.)		Non-Respondents		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Vocational/Practical Certificate- dental hygiene	3	0.1	0	0.0	2	1.5	0	0.0	0	0.0	5	0.1
Diploma - dental hygiene	20	0.7	6	1.5	3	2.2	1	100.0	0	0.0	30	0.9
Associate Degree - dental hygiene	2,594	86.9	303	77.3	96	71.6	0	0.0	7	77.8	3,000	85.2
Baccalaureate Degree - dental hygiene	367	12.3	83	21.2	33	24.6	0	0.0	0	0.0	483	13.7
Master's Degree - dental hygiene	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Doctoral Degree - dental hygiene	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-Respondent	1	0.0	0	0.0	0	0.0	0	0.0	2	22.2	3	0.1
Total	2,985	100.0	392	100.0	134	100.0	1	100.0	9	100.0	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Education data were derived from questions 4 and 5 in the 2018 Dental Hygienist Re-Licensure Survey.

Table 3.3: Dental Hygienist Highest Education

Highest Level of Education	N	%
Vocational/Practical Certificate - dental hygiene	2	0.1
Diploma - dental hygiene	18	0.5
Associate Degree - dental hygiene	2,375	67.5
Associate Degree - other field	16	0.5
Baccalaureate Degree - dental hygiene	646	18.3
Baccalaureate Degree - other field	393	11.2
Master's Degree - dental hygiene	12	0.3
Master's Degree - other field	48	1.4
Doctoral Degree - dental hygiene	0	0.0
Doctoral Degree - other field	5	0.1
Non-Respondent	6	0.2
Total	3,521	100

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Data were derived from question 6 in the 2018 Dental Hygienist Re-Licensure Survey.

Professional and Practice Characteristics

Table 3.4 provides professional characteristics of dental hygienist. Most (96.2%) dental hygienists reported their primary field as Direct Patient Care - Dental Hygiene while a small percentage reported their primary field as Education - Dental Hygiene (1.2%). Additionally, a large percentage (93.2%) of dental hygienists reported working more than 9 months in the past year outlines practice characteristics.

Table 3.4: Dental Hygienist Professional Characteristics

Primary Field	N	%
Direct Patient Care - Dental Hygiene	3,386	96.2
Education - Dental Hygiene	41	1.2
Administration - Dental Hygiene	25	0.7
Direct Patient Care - Other	19	0.5
Administration - Other	15	0.4
Other	9	0.3
Education - Other	7	0.2
Research - Dental Hygiene	4	0.1
Research - Other	0	0.0
Non-Respondents	15	0.4
Total	3,521	100.0
Number of Months Work in Past Year	N	%
I did not work in dental hygiene in the past year	14	0.4
Less than 3 months	53	1.5
More than 3 months but less than 6 months	73	2.1
More than 6 months but less than 9 months	90	2.6
More than 9 months, up to 12 months	3,283	93.2
Non-Respondents	8	0.2
Total	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Data were derived from questions 8 and 9 in the 2018 Dental Hygienist Re-Licensure Survey.

The majority (89.3%) of dental hygienists reported working their desired hours. Of the 10.3% respondents who reported not working desired hours, 30.2% demonstrated a desire to work up to an additional 8 hours per week and 42.9% reported a desire to work between 9 and 16 additional hours per week. When asked about employment plans for the next 12 months, 82.1% of respondents reported that they plan to continue working as they are followed by 9.9% who reported that they plan to increase hours in patient care. Table 3.5 on the following page provides more details on employment characteristics.

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Table 3.5: Dental Hygienist Employment Plans

Working Desired Hours	N	%
Yes	3,143	89.3
No	364	10.3
Non-Respondent	14	0.4
Total	3,521	100.0
More Hours Desired to Work in Dental Hygiene	N	%
8 or less additional hours per week	110	30.2
Between 9 and 16 additional hours per week	156	42.9
Between 17 and 24 additional hours per week	27	7.4
Between 25 and 32 additional hours per week	24	6.6
Between 33 and 40 additional hours per week	39	10.7
More than 40 additional hours per week	1	0.3
Non-Respondent	7	1.9
Total	364	100.0
Employment Plans for the next 12 months	N	%
Continue as you are	2,892	82.1
Increase hours in patient care	349	9.9
Decrease hours in patient care	136	3.9
Seek employment in a field outside of patient care	16	0.5
Leave direct patient care to complete further training	5	0.1
Leave direct patient care for family reasons/commitments	6	0.2
Leave direct patient care due to physical demands	4	0.1
Leave direct patient care due to stress/burnout	6	0.2
Retire	10	0.3
Unknown	62	1.8
Non-Respondent	35	1.0
Total	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Data were derived from questions 11 and 12 in the 2018 Dental Hygienist Re-Licensure Survey.

As displayed in Table 3.6 on the following page, a Dental Office Practice – Solo Practice was the most common practice setting reported (58.5%) as a primary practice setting. In addition, Dental Office Practice - Partnership and Dental Office Practice – Group Practice were similarly reported as primary practice setting among dental hygienist (17.4% and 15.3%, respectively).

Table 3.6: Dental Hygienist Primary Practice Characteristics

Primary Practice Setting	N	%
Dental Office Practice - Solo Practice	2,060	58.5
Dental Office Practice - Partnership	614	17.4
Dental Office Practice - Group Practice	537	15.3
Specialty Practice	96	2.7
Health Center (CHC/FQHC/FQHC look alike)	36	1.0
Other Setting	33	0.9
Other Public Health/Community Health Setting	19	0.5
Hospital/Clinic	13	0.4
Mobile Unit Dentistry	15	0.4
School Health Service	12	0.3
Federal Government Hospital/Clinic (includes military)	5	0.1
Long Term Care/Nursing	4	0.1
Local Health Department	4	0.1
Staffing Organization	4	0.1
Home/Extended Care Facility (non-hospital)	0	0.0
Home Health Setting	1	0.0
Correctional Facility	1	0.0
Indian Health Service	0	0.0
Headstart (including early Headstart)	0	0.0
Non-Respondents	67	1.9
Total	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Data was derived from question 17 in the 2018 Dental Hygienist Re-Licensure Survey.

Supply and Geographic Distribution

Regarding hours spent in patient care, the greatest percentage (20.6%) of dental hygienist reported working between 29-32 hours per week in patient care. Similarly, 19.4% reported working 33-36 hours per week in patient care (Table 3.7). Geographic distribution of Indiana dental hygienists are displayed in Table 3.7 and demonstrated in map 3.1. There is no threshold of insufficient capacity for dental hygienists. However, measuring capacity is still valuable for determining where low capacity exists. Thirteen counties in Indiana have PPRs above 5,900:1. Additionally, one county (Perry) had no reported dental hygienist FTE.

Table 3.7: Dental Hygienist Average Hours per week in Patient Care

Average hours/week in patient care	N	%
0 hours per week	39	1.1
1-4 hours per week	76	2.2
5-8 hours per week	152	4.3
9-12 hours per week	127	3.6
13-16 hours per week	252	7.2
17-20 hours per week	283	8.0
21-24 hours per week	448	12.7
25-28 hours per week	389	11.0
29-32 hours per week	726	20.6
33-36 hours per week	682	19.4
37-40 hours per week	287	8.2
41 or more hours per week	16	0.5
Non-Respondents	44	1.2
Total	3,521	100.0

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: Data was derived from question 16 in the Dentist Re-Licensure Survey.

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Table 3.8: Geographic Distribution of Indiana Dental Hygienists

County	Rurality	FTE	Population to Provider Ratio	County	Rurality	FTE	Population to Provider Ratio
Adams	Rural	24	1,443	Lawrence	Rural	10.7	4,281
Allen	Urban	168.5	2,156	Madison	Urban	51.4	2,534
Bartholomew	Urban	18.5	4,296	Marion	Urban	235.2	3,938
Benton	Rural	1.6	5,470	Marshall	Rural	17.5	2,683
Blackford	Rural	5.1	2,446	Martin	Rural	3.5	2,932
Boone	Urban	39.3	1,539	Miami	Rural	4.3	8,421
Brown	Urban	4.8	3,127	Monroe	Urban	30	4,746
Carroll	Urban	4.2	4,765	Montgomery	Rural	10.4	3,670
Cass	Rural	17.6	2,186	Morgan	Urban	22	3,154
Clark	Urban	38.9	2,909	Newton	Urban	5.7	2,466
Clay	Urban	7	3,812	Noble	Rural	17.3	2,748
Clinton	Rural	6.8	4,828	Ohio	Urban	0.8	7,541
Crawford	Rural	0.9	11,767	Orange	Rural	5.2	3,793
Daviess	Rural	4.9	6,614	Owen	Rural	3.2	6,622
Dearborn	Urban	18.8	2,642	Parke	Rural	4.4	3,887
Decatur	Rural	10.2	2,572	Perry	Rural	0	-
DeKalb	Rural	17.4	2,439	Pike	Rural	2.4	5,286
Delaware	Urban	28.5	4,117	Porter	Urban	88.9	1,873
Dubois	Rural	12.4	3,410	Posey	Urban	8.8	2,905
Elkhart	Urban	74.8	2,682	Pulaski	Rural	3.1	4,208
Fayette	Rural	4.6	5,168	Putnam	Urban	11.8	3,190
Floyd	Urban	28.9	2,626	Randolph	Rural	9.9	2,585
Fountain	Rural	4.8	3,518	Ripley	Rural	10.6	2,699
Franklin	Urban	14.5	1,581	Rush	Rural	4.3	3,951
Fulton	Rural	8.2	2,503	Scott	Urban	5.5	4,324
Gibson	Urban	9	3,740	St. Joseph	Rural	130.9	2,041
Grant	Rural	19.4	3,551	Shelby	Urban	13.1	3,392
Greene	Urban	10	3,281	Spencer	Rural	10.1	2,064
Hamilton	Urban	202.7	1,463	Starke	Rural	3.4	6,799
Hancock	Urban	47.7	1,495	Steuben	Rural	7.6	4,508
Harrison	Urban	14.6	2,686	Sullivan	Urban	3.9	5,413
Hendricks	Urban	87.5	1,753	Switzerland	Rural	1.4	7,500
Henry	Rural	16.2	3,033	Tippecanoe	Urban	47.5	3,809
Howard	Urban	33.9	2,441	Tipton	Urban	2.6	5,989
Huntington	Rural	10.8	3,413	Union	Rural	0.6	12,165
Jackson	Rural	9.6	4,528	Vanderburgh	Urban	65.3	2,776
Jasper	Urban	15.1	2,215	Vermillion	Urban	1.9	8,347
Jay	Rural	7.1	2,993	Vigo	Urban	19.6	5,523
Jefferson	Rural	4	8,113	Wabash	Rural	11.3	2,863
Jennings	Rural	16.1	1,746	Warren	Rural	1.7	4,921
Johnson	Urban	76.6	1,901	Warrick	Urban	25.2	2,420
Knox	Rural	6.9	5,516	Washington	Urban	4.2	6,650
Kosciusko	Rural	24	3,249	Wayne	Rural	14.4	4,712
LaGrange	Rural	5.1	7,467	Wells	Urban	15.8	1,759
Lake	Urban	159.5	3,082	White	Rural	5.5	4,434
LaPorte	Urban	45	2,472	Whitley	Urban	18.2	1,831

Source: Indiana Dental Hygienist Re-Licensure Survey, 2018

Notes: FTE data were derived from question 16 in the 2018 Dental Hygienist Re-Licensure Survey.

Closing Summary

Dentists and dental hygienists are a vital component of Indiana's health workforce. As presented in this report, Indiana's oral health workforce practice in a diverse array of settings, specialties and locations. The data presented here can be used to inform workforce related initiatives. For example, like many health professions, Indiana's oral health workforce has very little racial and ethnic diversity. Increasing diversity among dentists and dental hygienists is a strategic priority for oral health education. Indiana's dental educators can leverage these data to inform, advance, and evaluate initiatives aimed at improving workforce capacity.

This report provides a snapshot of the oral health workforce in 2018. The Bowen Center is committed to continuous improvement in our reporting on Indiana's oral health workforce. The data presented in this report are also available through the BowenPortal.org. The Portal offers users the ability to generate interactive GIS maps, develop customized reports, and download data for customized analyses. We welcome feedback on this report and/or inquiries for customized reports through email at bowenctr@iu.edu.