

# Delaware Dentist Survey 2022



*DELAWARE HEALTH AND SOCIAL SERVICES*

Division of Public Health

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## Executive Summary

The Delaware *Dentist Survey 2022* survey follows its predecessors fielded in 2016, 2012, 2008, 2005, and 1998. For the first time this year, the study expanded the efforts of surveying dentists licensed in Delaware with a survey of Delaware's dental students. The University of Delaware's Biden School of Public Policy and Administration prepared this report for the Delaware Department of Health and Social Services, Division of Public Health. This project is jointly supported by the Bureau of Oral Health and Dental Services and the Bureau of Health Planning and Resources Management. Funding for this report is made possible through federal grant funding (Health Resources Services Administration, Bureau of Health Workforce, and the Office of Rural Health Policy) as well as state funding and funding from the Delaware Health Care Commission.

This report provides important information for oral health care advocates, policymakers, and other stakeholders to better understand the supply and distribution of dentists across Delaware. This information supports Delaware's efforts to assess the potential for dental Health Professional Shortage Areas (HPSAs) in the state. If an area is deemed a HPSA by the federal Office of Shortage Designation, then facilities located there are eligible for participation in a variety of recruitment programs such as the Conrad State 30/J-1 Visa Waiver Program, the National Health Services Corps, and the State Loan Repayment Program. Additionally, this information may be utilized by recruitment programs to determine whether a dentist should be placed in a particular area.

The results of the survey indicate that Delaware has 356 dentists working in general/pediatric dentistry and 59 dentists working in other specialties. In addition to these findings, the following can be drawn from the data:

- Overall, the number of active dentists decreased since 2016 from 437 to 415 in 2022.

- The number of general/pediatric dentists increased from 352 in 2016 to 356 in 2022, while the number of specialists decreased from 85 to 59.
- The full-time equivalent (FTE) (using federal guidelines) count of general/pediatric dentist decreased from 305 in 2016 to 294 in 2022. The FTE count of specialists (using FTE adjustment only) decreased from 65 in 2016 to 52 in 2022.
- The population-to-dentist (general/pediatric) ratio (using federal guidelines) increased from 3,128 persons per FTE dentist in 2016 to 3,414 persons in 2022.
- If entire counties are considered rational service areas, neither Sussex nor New Castle counties would be considered underserved areas. However, Kent County is getting close to the HPSA threshold of 5,000:1. The population-to-provider ratio is only one of the variables used for HPSA designation.
- The proportion of Asian dentists decreased slightly from 6.7 percent in 2016 to 6.0 percent in 2022. Black dentists increased by about 1.4 percentage points since 2016. The proportion of dentists reporting “other” as their race stayed unchanged at about 4.1 percent statewide.
- Nearly 42 percent of dentists statewide are 55 years of age or older. Just over 17 percent are 65 years of age or older.
- About 21 percent of Delaware dentists will either not be practicing dentistry in five years or are unsure if they will be practicing.
- About 95 percent of general/pediatric dentists and 100 percent of specialists in Delaware are accepting new patients.
- General/pediatric dentists in Kent and Sussex counties see more patients per week than their colleagues in New Castle County. Weekly patient encounters for general/pediatric dentists are 99 patients per week in Kent County and 103 patients per week in Sussex County, while general/pediatric dentists in New Castle County see 90 patients per week.
- Waiting times for new patients seeking an appointment with a general/pediatric dentist are somewhat longer in Sussex County (34 days) than in Kent County (26 days) or New Castle County (nine days).
- Medicaid is accepted by about 64 percent of general/pediatric dentists, and about 24 percent of specialists accept Medicaid.

- Almost all general/pediatric dentists use resources provided by hygienists and dental assistants. Dental technicians were not addressed in this survey.
- About a third of Delaware's dentists offer flexible hours by remaining open at night and on Saturday. General/pediatric dentists are more likely to offer such hours than are specialists.
- Approximately 95 percent of general/pediatric dentists and 90 percent of specialist dentists practicing in Delaware accept pediatric patients.
- About 60 percent general/pediatric dentists and 64 percent of specialist dentists report being fully staffed by dental hygienists and dental assistants.
- About 90 percent of general/pediatric dentists and 91 percent of dental specialists report fully staffed offices.
- Eighty-one percent of general/pediatric dentists and 68 percent of specialist dentists in Delaware self report a shortage of qualified dental staff.
- On average, Delaware's dentists report 6.2 open chair hours per week due to cancellations, 6.1 hours due to lack of demand, and about 4.3 hours due to other non-specified reasons.
- Among dental students, 48 percent are female, about 38 percent are non-White, and 24 percent are Hispanic.
- All dental students surveyed plan on being in dentistry five years from today.
- About 62 percent of dental students expect that their student debt (undergraduate and dental school) will be \$350,000 or above once they complete their studies.
- About 67 percent of dental students have already decided where they will practice once they graduate.
- About 86 percent of dental students reported that loan repayment programs play a very important or an important role in deciding where they will practice.
- About 14 percent of dental students agree that in general, licensure examinations are unfair.
- Eighty-eight percent of dental students report that it is challenging to secure patients for the licensure examination in Delaware.

## I. Methodology – Dentist Survey

In 1998, the Delaware Department of Health and Social Services, Division of Public Health (DPH) began to measure the number and spatial distribution of dentists practicing in Delaware. DPH repeated the survey of dentists in 2005, 2008, 2012, 2016, and 2022. The objective was to support the identification of underserved areas and to understand any existing or developing trends that could impact the supply of dental services. The 2022 dentist survey instrument replicated what was used in previous years. Moreover, questions were added to assess the impact of Coronavirus 2019 (COVID-19) on dentists. Also, questions on staffing and open chair hours were included to provide contextual information to the quantitative data collection among dentists.

The method chosen to gather the information among dentists was a self-administered mail survey to all of Delaware’s licensed dentists. This approach included a pre-letter and an initial mail survey, followed by three follow-up mailings to non-respondents. The list of licensed dentists from February 2022 that was obtained from the Division of Professional Regulation contained 542 records. From this total, 78 entries were determined to be duplicates and removed. Additionally, 27 providers were identified who were not included in the original list. By the project’s conclusion, 491 licensed dentists were contacted. Responses were received from 230 dentists. The response rate in 2022 was 47 percent, compared to 41 percent in 2016.

As of February 2022, Delaware had 491 licensed dentists. This is an increase of 19 licensed dentists from 2016, when Delaware had 472 licensed dentists. However, this does not mean they are active or that they have a Delaware practice. Based on the survey results, adjusted for non-respondents, approximately 415 dentists actively practice in Delaware. This total is used to produce all estimates presented throughout this report where the results for dentists are presented. To arrive at the 415 dentists given the response rate of the survey, an adjustment for non-respondents was calculated based on geographic weights. The weights were

calculated as a ratio of licensed dentists in each Census County Division and the number of responses received from that Census County Division. This weight was applied to all responses received and the total used to produce all estimates presented throughout the report.

This section of the report focuses on all active dentists, which includes general/pediatric dentists and specialists. Using the survey data, it is estimated that in 2022, 356 (up from 352 in 2016) dentists worked as general/pediatric dentists and 59 dentists (down from 85 in 2016) practiced in specialty areas. When reporting on dentists in this report, most responses are tabulated for these two major groups.

It is important to note that the term ‘general/pediatric dentists’ used in the report refers to dentists who chose the following three self-designated practice codes when asked about their specialty: general/pediatric dentistry (DG), pediatric dentistry (PED DENT), and general practice residency (GPR). For a listing of all codes, see Appendix A. The decision to include these dentists among general/pediatric dentists is based on the Health Professional Shortage Area (HPSA) designation criteria (Appendix B, Part I – Geographic Area, B. Methodology, 3. Counting Dental Practitioners). The term ‘specialist’ refers to dentists who selected one of the eight specialties (Appendix A).

## 2. Demographics – Dentists

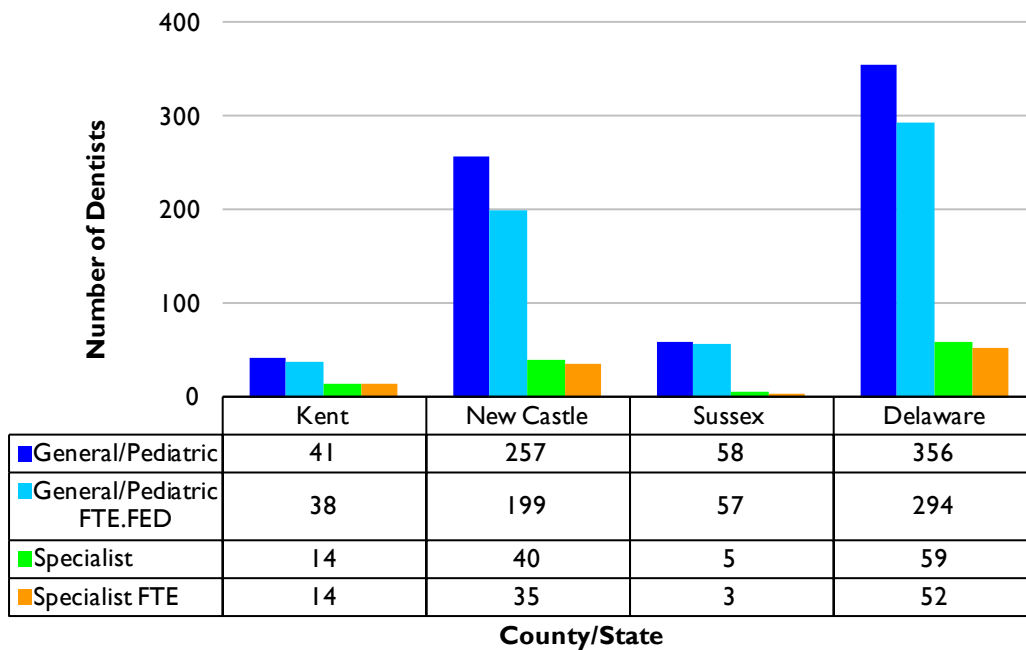
Not all dentists practice full-time. According to the Federal Health Professional Shortage Area (HPSA) guidelines<sup>1</sup>, adjustments are necessary to allow for a true measure of dental service capacity within a given geographic area from year to year. This adjustment provides the number of full-time equivalent (FTE) dentists. For example, a dentist engaged in delivering care directly to patients 40 or more hours per week is defined as a full-time dentist. Less than 40 hours is considered less than full-time. For each four hours less than 40 hours, 0.1 FTE is deducted. Anything more than 40 hours is considered full-time. A dentist delivering 60 hours per week of care is still counted as one FTE dentist.

The Federal HPSA guidelines indicate that general and pediatric dentists' FTEs should be further adjusted to reflect variations in productivity measured by the number of auxiliary staff members employed. A dentist's FTE is increased incrementally for each dental hygienist and/or dental assistant employed. Also, since age is often a factor in a dentist's availability, adjustments are further made to account for the practitioner's age in line with criteria outlined by the rules governing HPSA designations. Thus, beginning at the age of 55, a dentist's FTE is incrementally decreased. These factors are used to calculate the FTE.FED number of dentists in Delaware (FTE.FED stands for Full Time Equivalent calculated using the federal government's productivity factor). These adjustments are described in Appendix B.

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<sup>1</sup> Federal Register/Vol.45, No.223/ Monday, November 17, 1980, Part IV Department of Health and Human Services, 42 CFR Part 5, p.76004.

**Figure 2.1  
Number of Dentists by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Although the federal HPSA guidelines for determining dental shortage areas refer to Doctors of Dental Surgery (DDS) or Doctors of Dental Medicine (DMD) who practice general and/or pediatric dentistry, this study applies the time adjustment formula described above (FTE formula only) to account for the service capacity of specialists throughout the state. Thus, following the federal guidelines, the FTE calculation is used to report the full-time equivalent number of specialists while the FTE.FED number is used to report the full-time equivalent number of those who practice general or pediatric dentistry, taking into account recommended productivity measures.

Figure 2.1 summarizes the current number of dentists actively practicing in Delaware by county of practice. It includes FTE estimates for specialists based on 40 hours of direct patient care and does not reflect either the age adjustment or an adjustment for hygienists or dental

assistants. The FTE.FED is calculated using the federal guidelines which apply to general practitioners and pediatric dental specialists that include the above-mentioned FTE adjustment and adjustment for age and auxiliary staff.

The actual number (without FTE or FTE.FED adjustments) of general/pediatric dentists practicing increased from 352 in 2016 to 356 in 2022. However, Delaware experienced a decrease in the actual number of specialists since 2016. In 2022, 59 specialists were practicing in Delaware, down from 85 in 2016.

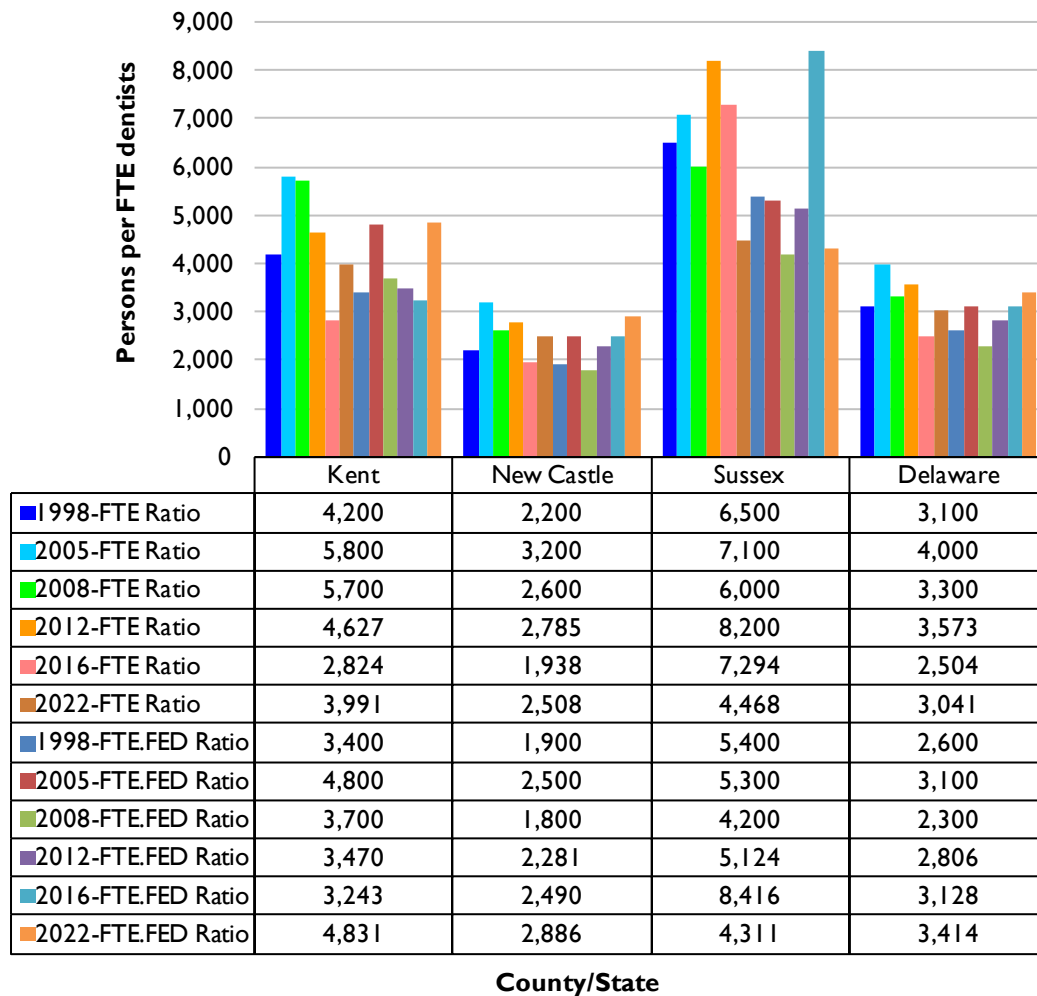
Given Delaware's 2022 population of 1,003,654<sup>2</sup>, each "FTE.FED" dentist serves about 3,414 persons, an increase from 3,128 persons per FTE.FED dentist since 2016 (Figure 2.2). These ratios reflect only those dentists in general/pediatric or pediatric practice. For the three counties for 2022, the estimates for each FTE.FED dentist are 4,831 persons in Kent County (up from 3,243 in 2016), 2,886 persons in New Castle County (up from 2,490 in 2016), and 4,311 in Sussex County (down from 8,416 in 2016).

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<sup>2</sup> Delaware Population Consortium Annual Population Projections Version 2021.0 from October 31, 2021, Accessed August 22, 2022.



**Figure 2.2**  
**Ratio of Dentist (General/Pediatric) by County, Delaware, 1998-2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The data labeled “FTE Ratio” represents full-time equivalencies without making the federal productivity adjustments for age and auxiliaries and is shown for reference purposes only. Only the hours of direct patient care are considered. The data items labeled as “FTE.FED Ratio” represent full-time equivalencies with adjusted ratios for age and auxiliaries. Improvement is shown in Sussex County only. Both the FTE and FTE.FED ratios for Kent and New Castle counties declined. One of the main criteria used by the federal government to

determine a dental Health Professional Shortage Area (HPSA) is the ratio of persons per FTE.FED dentist.<sup>3</sup> The threshold of 5,000 persons per FTE.FED dentists must be reached for an area to be considered a shortage area. In 2022, using those criteria alone, none of Delaware’s counties would qualify as a shortage area. However, Kent County is quite close to reaching the 5,000 HPSA designation threshold.

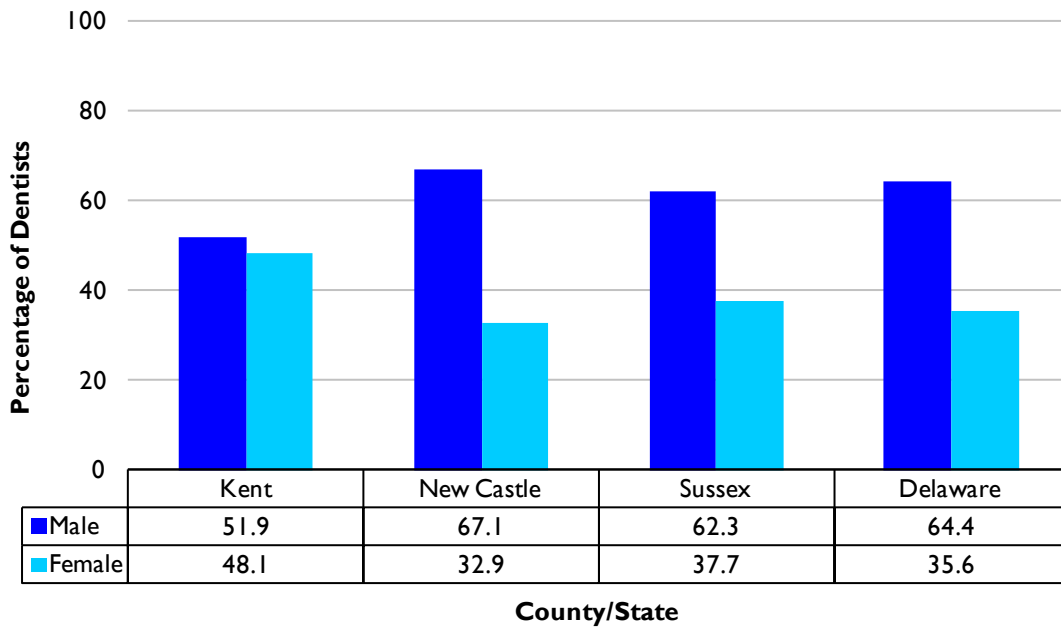
The next two sections of the report examine different aspects of dentists practicing in Delaware and their practices. Overall, the objective is to present the attributes that affect the availability of dental services across population groups throughout the state

The dental community in Delaware is 36 percent female (Figure 2.3). There is, however, some variation among the counties. Kent County has about 13 percentage points more female dentists than the state overall. In New Castle County, 33 percent of dentists are female, compared to 38 percent in Sussex County.

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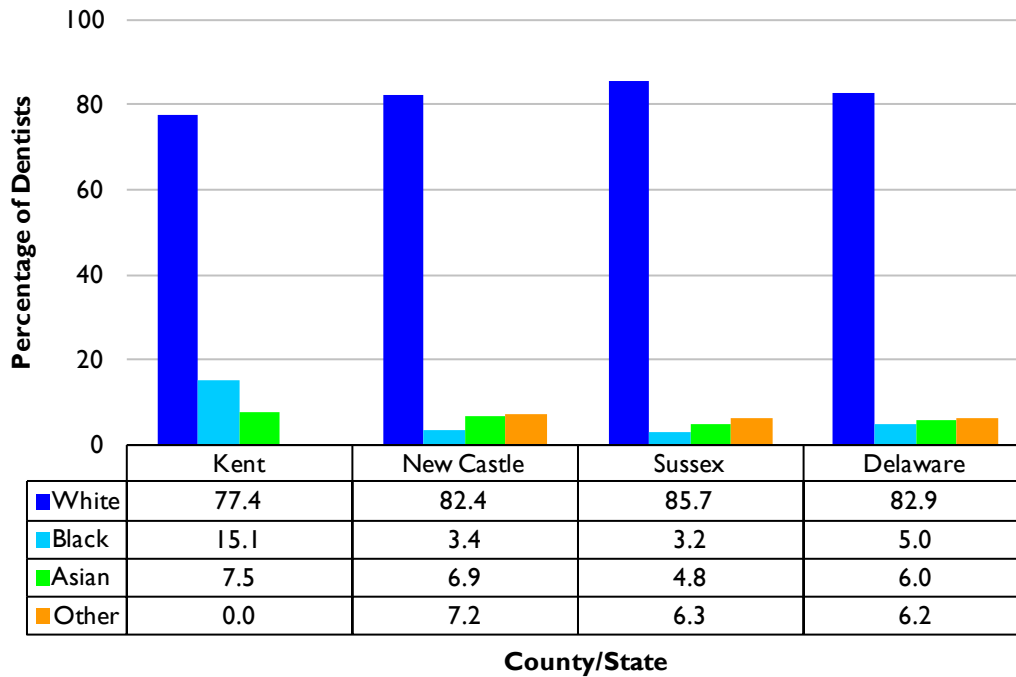
<sup>3</sup> In special cases this threshold is lower as described in Appendix B, Dental HPSA Designation Criteria.

**Figure 2.3**  
**Percentage of Dentists by Gender and County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

**Figure 2.4**  
**Percentage of Dentists by Race and County, Delaware, 2022**

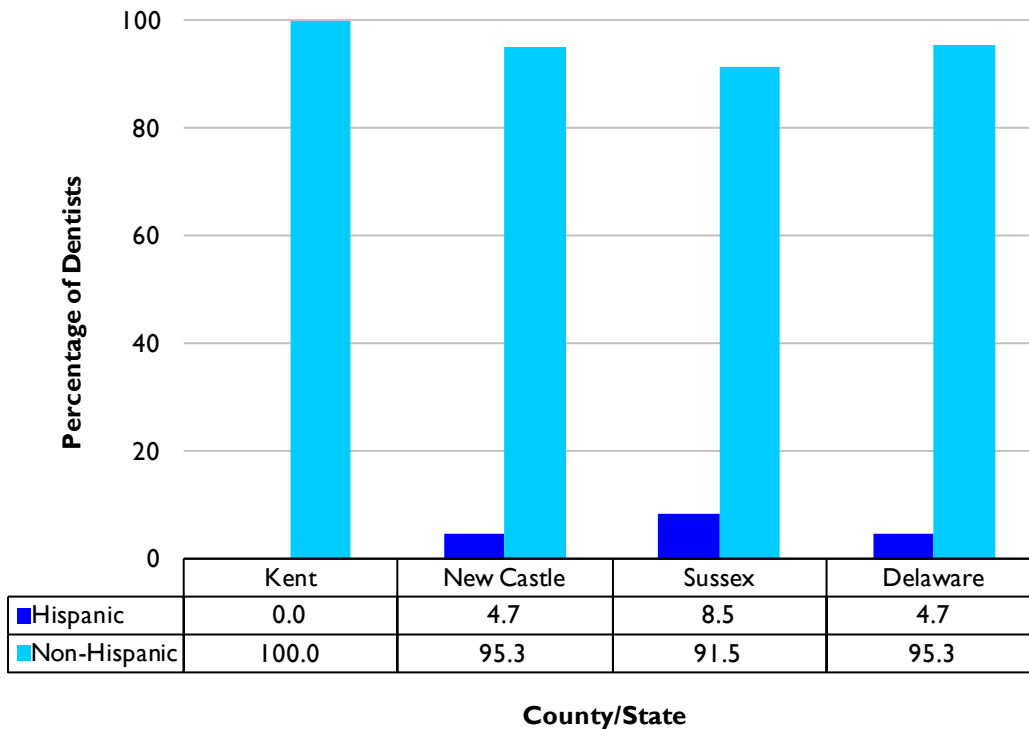


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The racial distribution of dentists by county is shown in Figure 2.4. The most striking aspect of this table is the low proportion of Black dentists in Delaware. Black Delawareans account for more than 20<sup>4</sup> percent of Delaware’s population, yet only 5 percent of Delaware dentists are Black. This is an increase of about 1.5 percentage points since the last survey in 2016. The proportion of Asian dentists decreased about one percentage point since the 2016 survey.

<sup>4</sup> Delaware Population Consortium Annual Population Projections Version 2021.0 from October 31, 2021, Accessed August 22, 2022.

**Figure 2.5**  
**Percentage of Dentists by Hispanic Origin and County, Delaware, 2022**

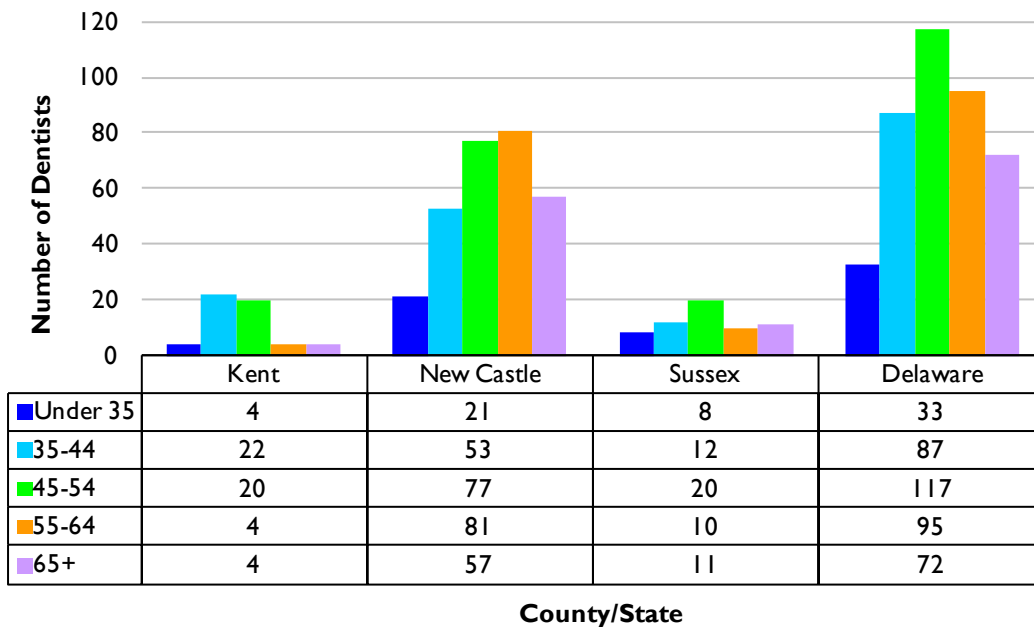


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Dentists identifying themselves as “other,” including multi-racial, rose from 4.1 percent in 2016 to 6.2 percent in 2022 statewide. At the county level, Kent County experienced the greatest shift in racial diversity among its dentists. In 2016, about 17 percent of dentists in Kent County were racial minorities. By 2022, roughly 23 percent of Kent County dentists identified themselves as Black, Asian, or Other. About 83 percent of Sussex County dentists report being White, down from 86 percent in 2016. In New Castle County, the percentage of White dentists decreased from 85 percent in 2016 to 82.4 percent in 2022. Practitioners of Hispanic origin are of particular interest because beginning in the 1990s, Delaware experienced a rapid growth in its Hispanic population, particularly in Sussex County. Currently, Delaware’s Hispanic population is above 9 percent while the dentist population is only about 5 percent Hispanic. No Hispanic dentist reported from Kent County (Figure 2.5).

The U.S. Department of Health and Social Services suggests that greater diversity within health professions positively correlates with improved public health outcomes. Greater diversity increases access to care for underserved populations and better enables minority patients to see practitioners with whom they share a common race, ethnicity, or language.<sup>5</sup> As Delaware’s population diversifies, there may be a need to recruit or train more Black dentists for New Castle and Sussex counties and more Hispanic dentists for Kent County.

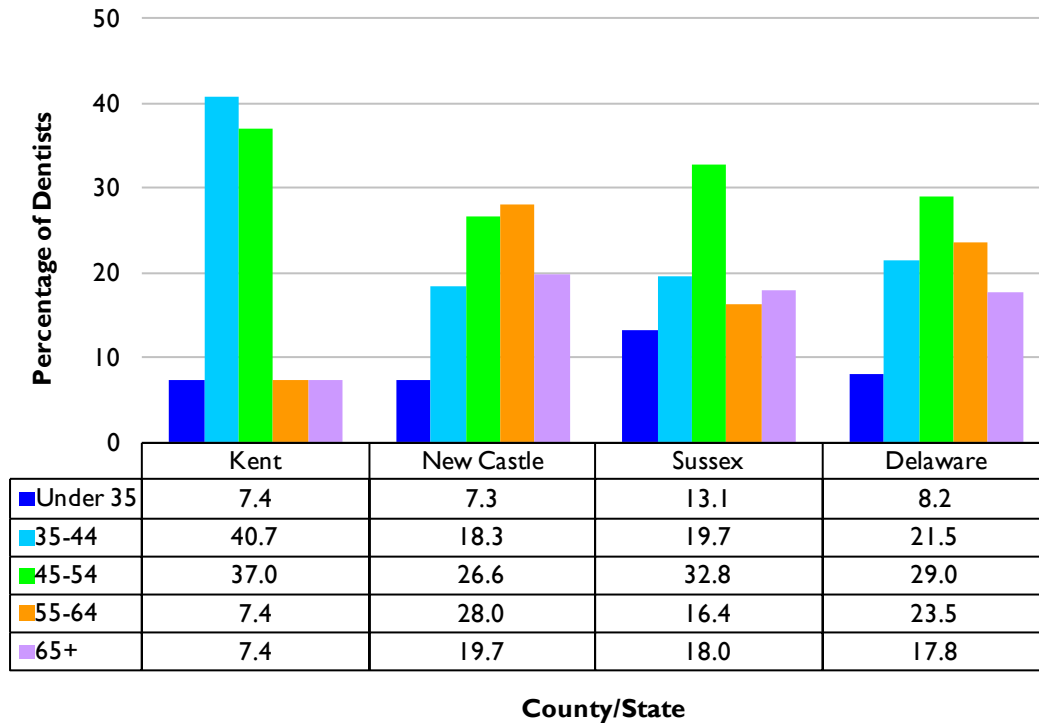
**Figure 2.6**  
**Number of Dentists by Age and County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

<sup>5</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions. *The Rationale for Diversity in the Health Professions: A Review of the Evidence*. October 2006.

**Figure 2.7**  
**Percentage of Dentists by Age and County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

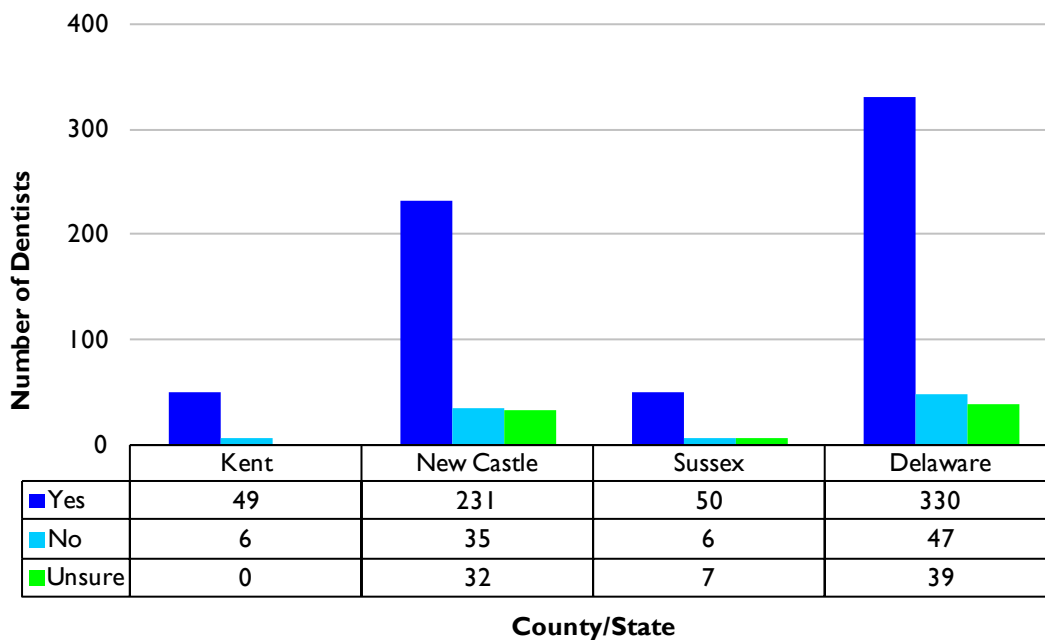
In 2016, there were 32 dentists under age 35 in Delaware; in 2022, there are about 33 dentists in this age bracket (Figure 2.6). The proportion of younger dentists (under 35) remained basically the same across counties between 2016 and 2022 (Figure 2.7). Yet, the majority (about 70 percent) of Delaware dentists are 45 years of age or older, and 18 percent are 65 years of age or older. The lowest proportion of dentists above 65 reported from Sussex Castle County (7.4 percent).

The guidelines governing federal HPSA designations suggest that age factors into productivity levels. The HPSA guidelines include a reduction in FTE estimates beginning at age 55 to more accurately assess dental service capacity at the aggregate level. Forty-five percent of Delaware dentists are 55 years of age or older. Unless proactive measures are taken to recruit younger dentists, the state will continue to see a decline in the number of dental practitioners

working at full capacity. New Castle and Kent counties will be most impacted by this downward trend.

Dentists were asked if they planned to be active in dentistry in five years (Figures 2.8 and 2.9). About 11 percent of Delaware dentists do not expect to be practicing five years from now, and about 9 percent are unsure. About 10 percent of New Castle County’s and 11 percent of Sussex County’s dentists report being unsure if they will be practicing in 2027.

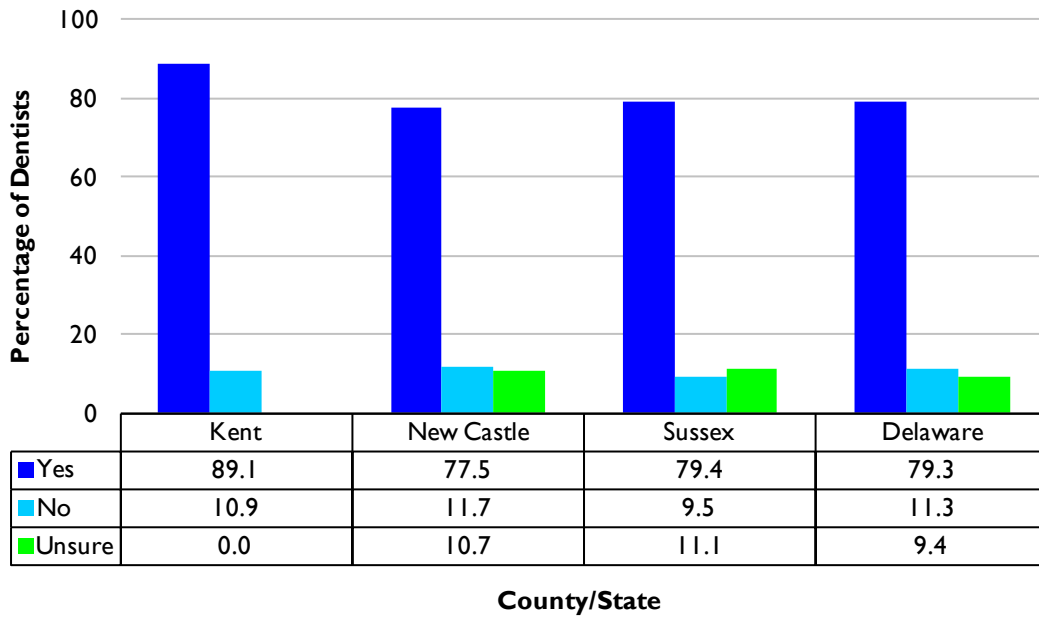
**Figure 2.8**  
**Number of Dentists Active in Five Years by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022



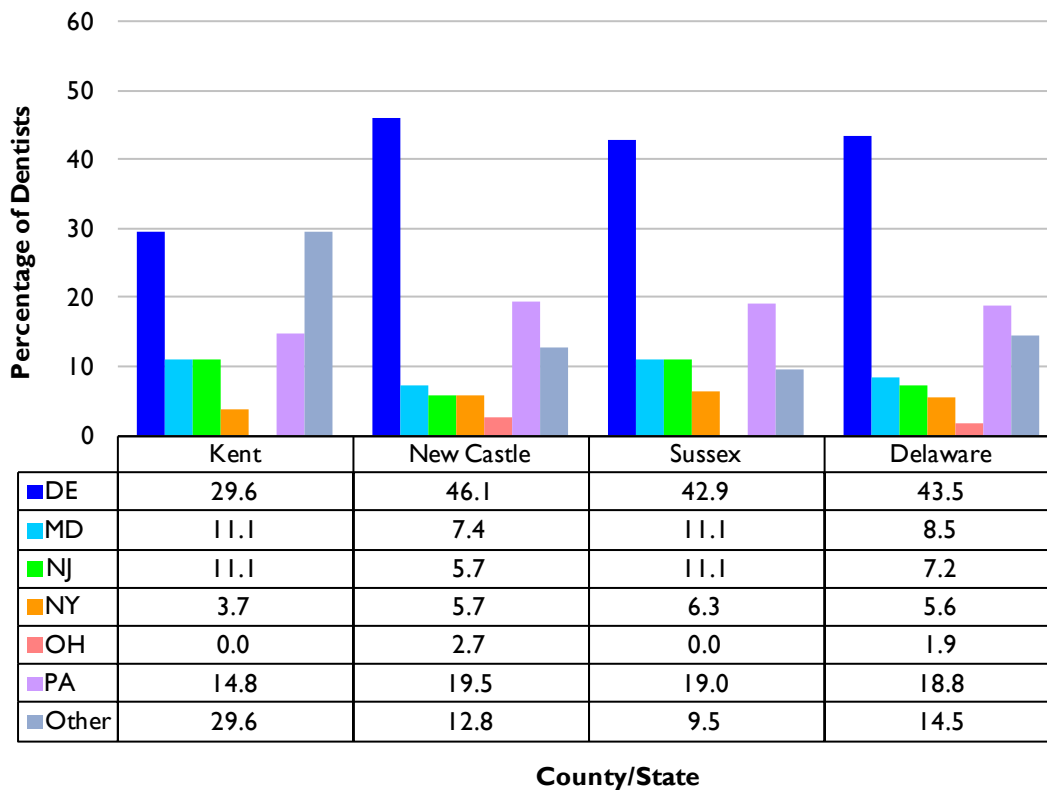
**Figure 2.9**  
**Percentage of Dentists Active in Five Years by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

To better understand why some dentists choose to practice in Delaware and others practice in other states, it is necessary to study several factors that affect the supply of dental providers who serve Delaware residents. Several pieces of information are useful for this purpose. First, where did this dentist originally reside as measured by the state from which he/she graduated high school? Second, in what state did the dentist attend dental school? Third, in what state did the dentist complete his/her residency?

**Figure 2.10**  
**Percentage of Dentists by State of High School Graduation and County,**  
**Delaware, 2022**

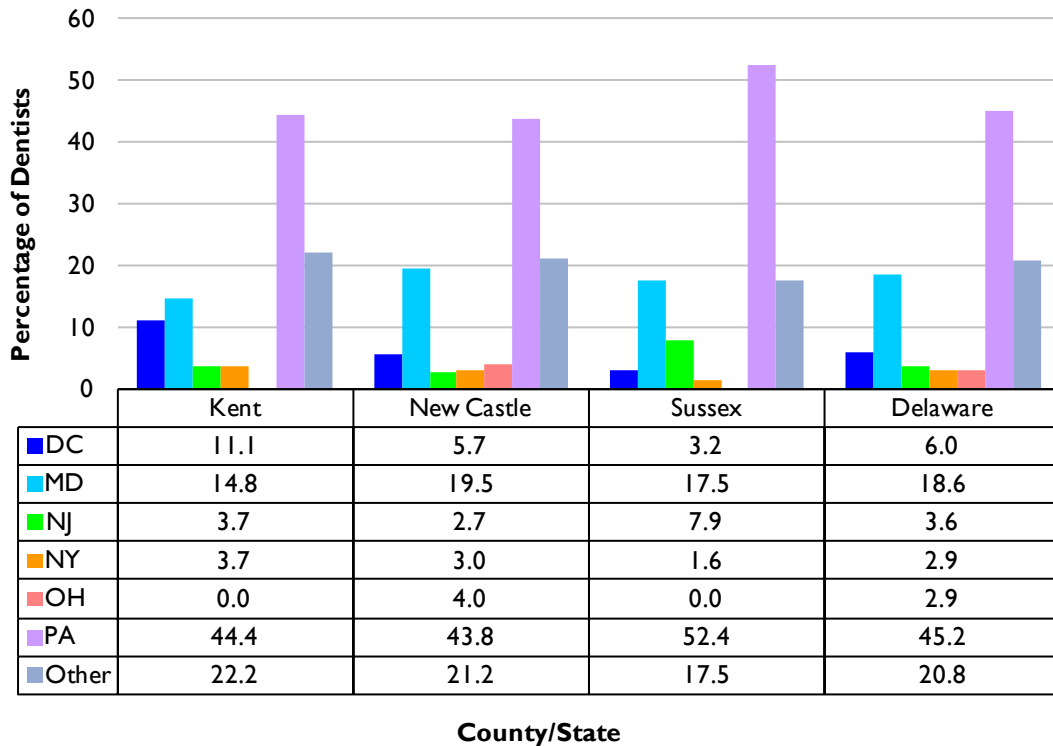


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

About 85 percent of Delaware’s dentists graduated from a high school in Delaware or one of the surrounding states (Maryland, New Jersey, New York, Ohio, or Pennsylvania), thereby suggesting that they grew up in the region (Figure 2.10). This proportion of dentists increased approximately from 80 percent in 2016. It appears that there is some variation in preferred practice location relative to the state in which dentists (presumably) grew up. Delaware dentists who grew up in Maryland are more prominent in New Castle and Sussex Counties. In the past, dentists originating from Pennsylvania used to be more oriented toward New Castle County, but now they also show up in Sussex County. Kent County hosts a far larger percentage (30 percent) of dentists who come from outside the region. Retired U.S. Air

Force dentists from either current or past associations with Dover Air Force Base may contribute to this finding.

**Figure 2.11**  
**Percentage of Dentists by State of Dental School Attendance**  
**and County, Delaware, 2022**

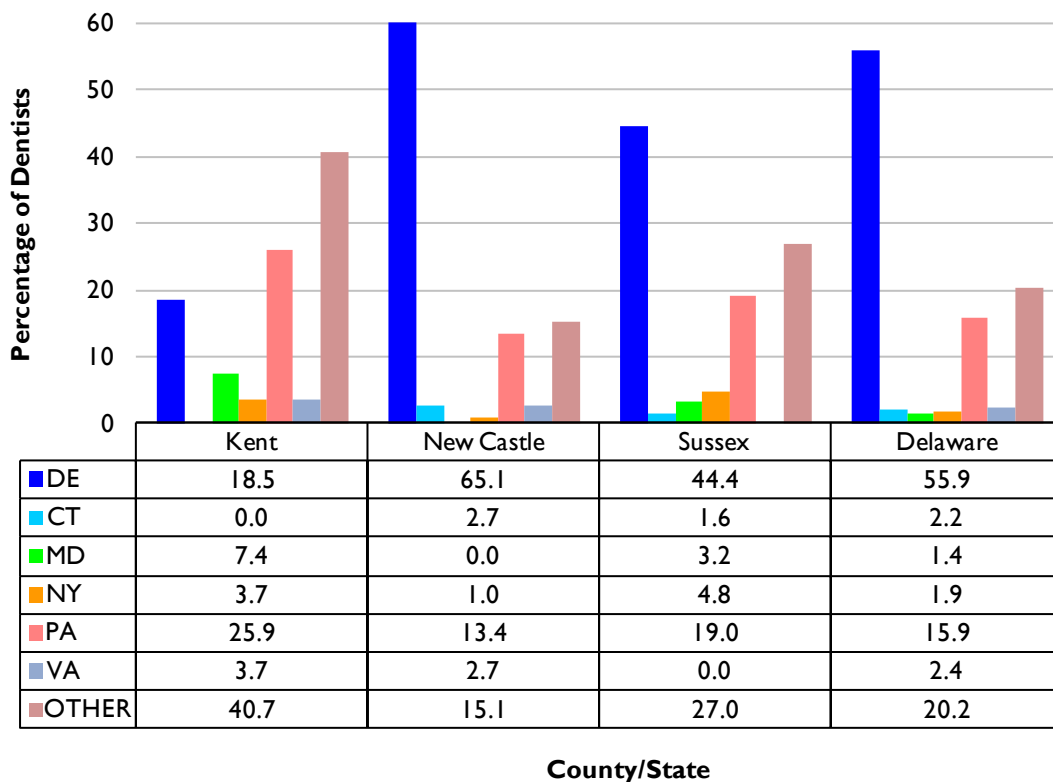


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

About 45 percent of Delaware dentists graduated from dental schools in Pennsylvania, about the same as in 2016 (Figure 2.11). The second highest proportion of dentists graduated from Maryland dental schools (18.6 percent). The distribution among the other states is not all that different among the counties. About 21 percent of Delaware dentists graduated from dental schools outside of the region surrounding Delaware.

About 56 percent of Delaware dentists who indicated completing a residency completed it in Delaware. However, dentists practicing in Kent County are least likely to have completed their residency program in Delaware. Only about 18 percent of Kent County dentists completed their residency in the state (up from 11 percent in 2016), compared to 65 percent of dentists practicing in New Castle County and 44 percent practicing in Sussex County (Figure 2.12).

**Figure 2.12**  
**Percentage of Dentists by State of Dental Residency Program and County, Delaware, 2022**



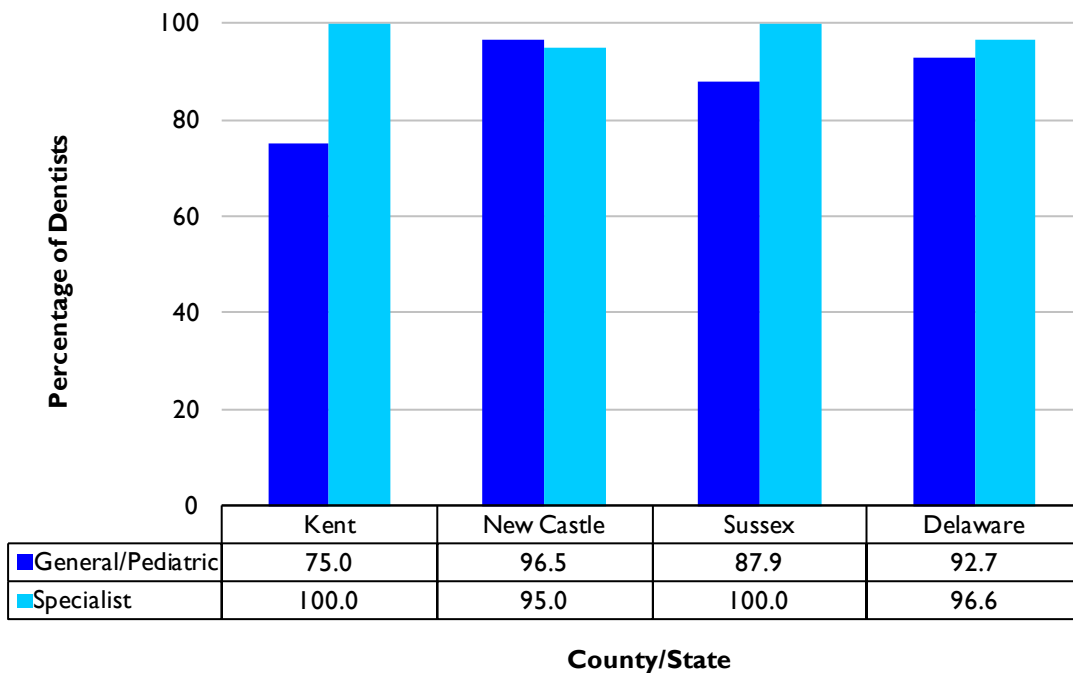
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

There is clearly a geographic orientation exhibited by these responses. It is plausible to suggest that similar patterns might emerge with the state of the dentist’s residency. However, these findings demonstrate that most dentists attend college within several hundred miles of

their homes, and they go to dental school within several hundred miles of where they attended college. Just like in previous years, about 75 percent of those who graduated from high school in Delaware attended a dental school in the region. This information may prove valuable to recruiters.

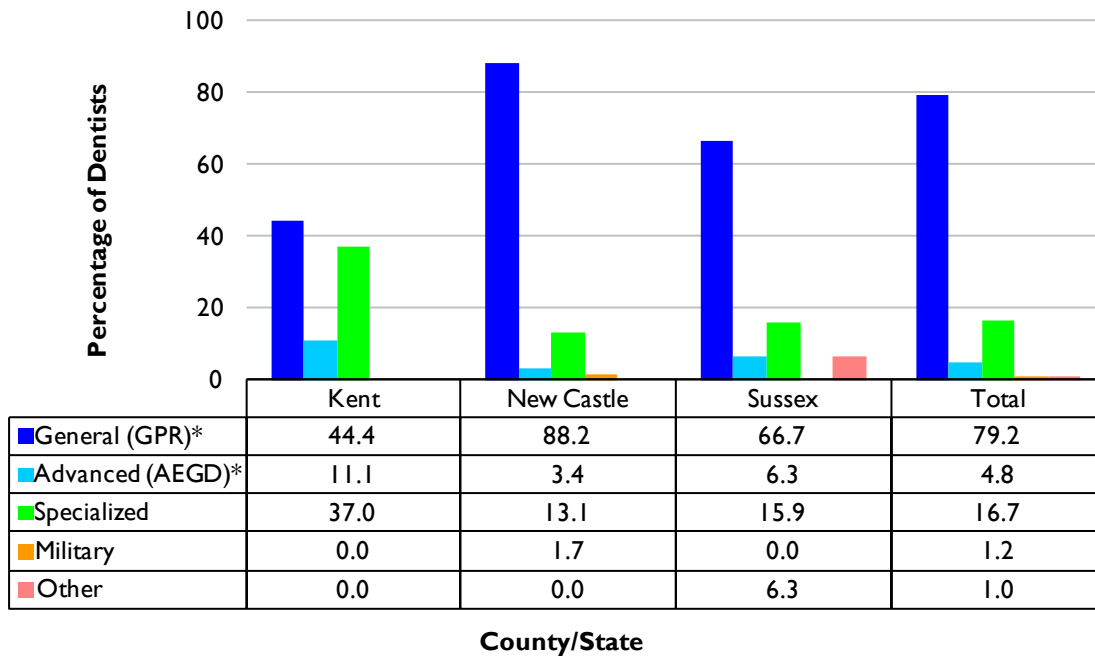
Not all dentists have completed a residency program. Although Delaware law requires that licensees have done so, there are two exceptions. Dentists who practiced for three years elsewhere may be granted a waiver. In addition, there is a waiver for those who practiced dentistry for two years while on active military duty. That explains, in part, the 93 and 97 percent completion rate (Figure 2.13).

**Figure 2.13**  
**Percentage of Dentists by Dental Residency Program**  
**Completion and County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

**Figure 2.14**  
**Percentage of Dentists by Type of Dental Residency Program**  
**Attendance and County, Delaware, 2022**



\*AEGD - Advanced Education in General Dentistry

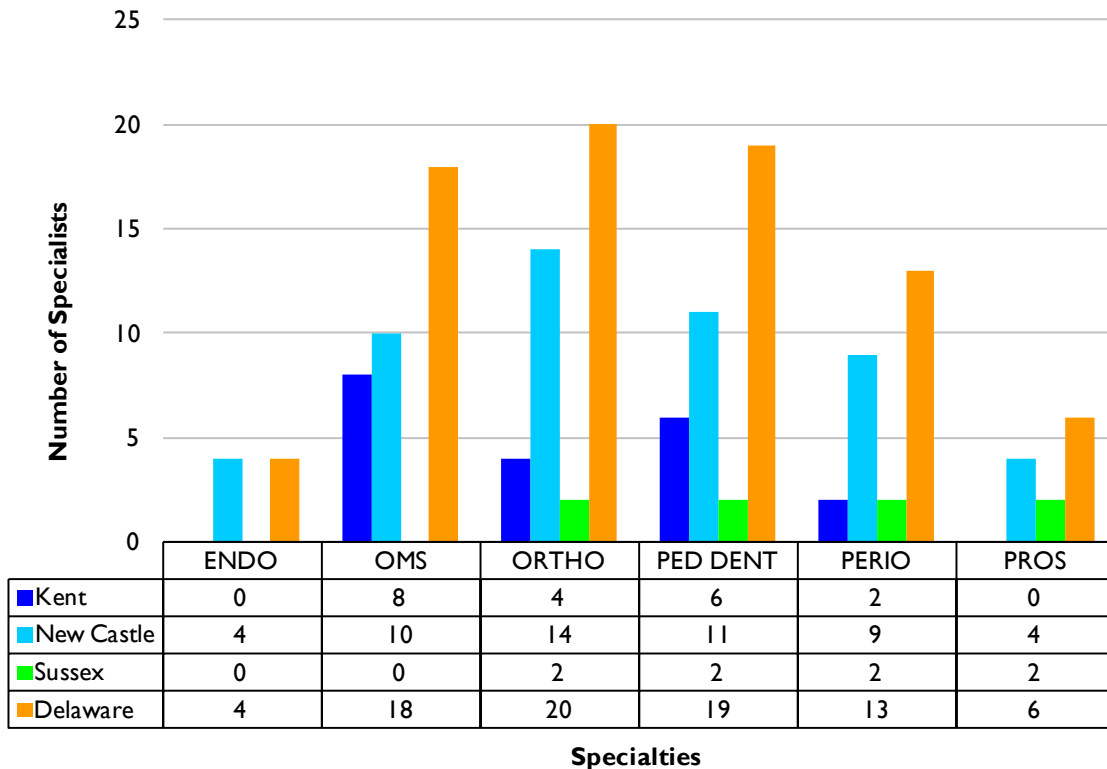
\*GPR - General Practice Residency

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The types of dental residency programs varied widely within the state. First, fewer dentists practicing in Kent County reported completing a general/pediatric dental residency (44 percent) than in the other two counties. Second, Kent County has the highest proportion (11 percent) of dentists who reported completing an Advanced Education in General Dentistry (AEGD) residency program. Third, 37 percent of Sussex County dentists were more likely to have completed a specialized dentistry residency program, compared to 13 percent of New Castle County dentists and 16 percent of Sussex County dentists. Responses are tabulated only for dentists who indicated having completed a residency. The totals will not add to 100 percent

because some dentists, particularly those with military service, reported more than one type of residency<sup>6</sup> (Figure 2.14).

**Figure 2.15**  
**Number of Dental Specialists by County, Delaware, 2022**



Note: Endodontics (ENDO); Oral and Maxillofacial Surgery (OMS); Orthodontics and Dentofacial Orthopedics (ORTHO); Pediatric Dentistry (PED DENT); Periodontics (PERIO); Prosthodontics (PROS)

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The number of specialist dentists is found in Figure 2.15. Those with a specialty in pediatric dentistry are shown here even though they are included in the General/Pediatric category for the FTE.FED calculation. This allows for an estimate of the number of active providers specializing in pediatric dentistry in each county.

<sup>6</sup> AEGD is not generally recognized as meeting the requirement of having had a residency for licensure in the State of Delaware. However, it is included for reference purposes.

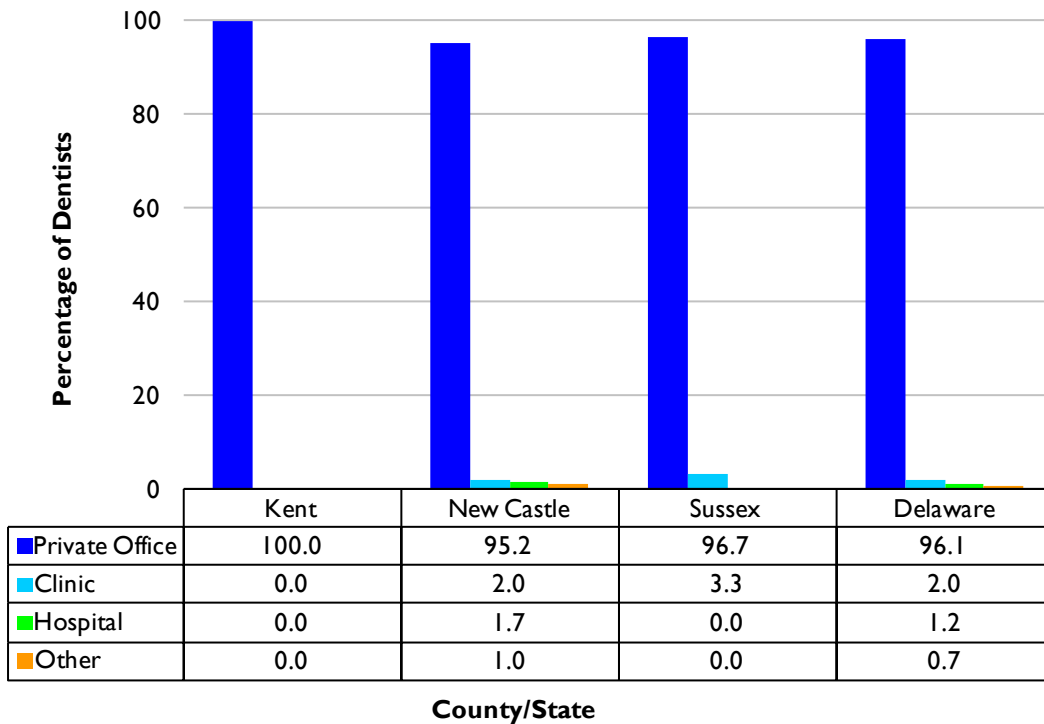
Dental specialists are more likely to practice in New Castle County than in Kent or Sussex counties. Increasing specialists in areas of the state that lack dental specialist services could be a focus of recruitment efforts.



### 3. Practice Characteristics – Dentists

This section examines four practice characteristics of the 415 dentists actively practicing in Delaware: broad attributes, accessibility, payment for services, and hiring qualified dental staff.

**Figure 3.1**  
**Percentage of Dentists by Practice and County, Delaware, 2022**



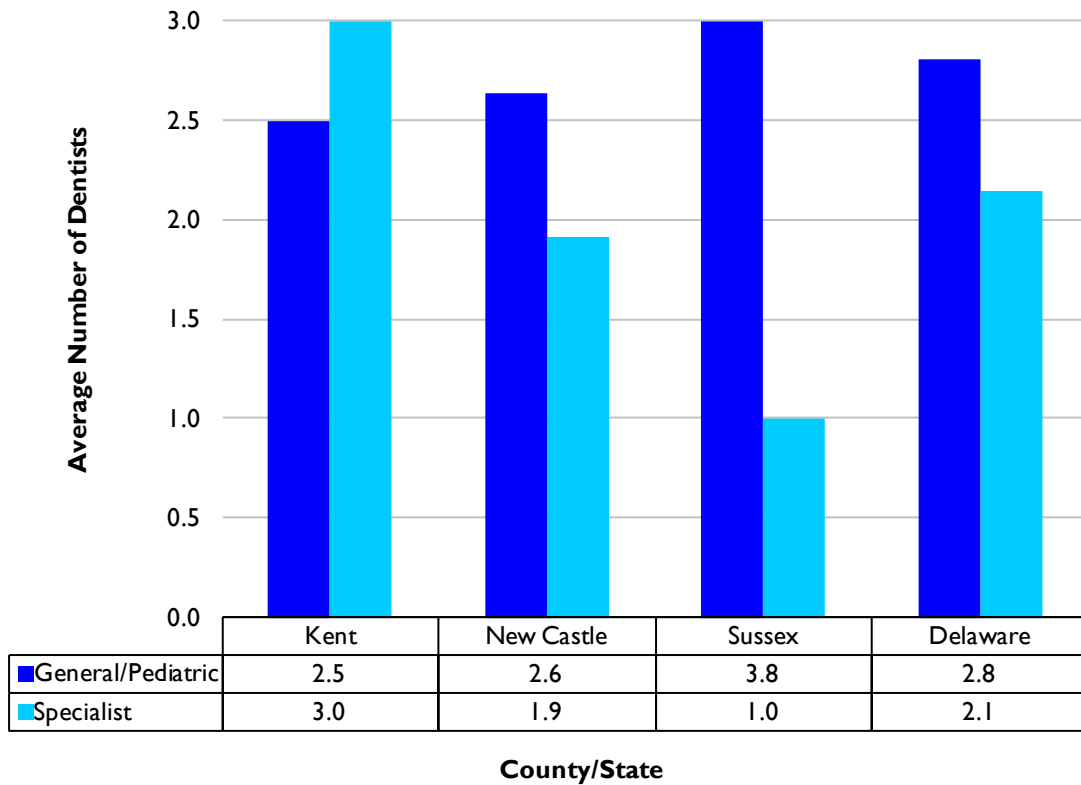
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Respondents were asked about the setting of their primary employment (Figure 3.1). The overwhelming majority of dentists are operating in private practitioners’ offices.

Dental practices are generally small, at least in terms of the number of dentists located at the practice site (Figure 3.2). Statewide, practices reported an average of three

general/pediatric dentists. Sussex County dentists report a relatively larger average number of general/pediatric dentists per site.

**Figure 3.2**  
**Average Number of Dentists at the Primary Site by County, Delaware, 2022**



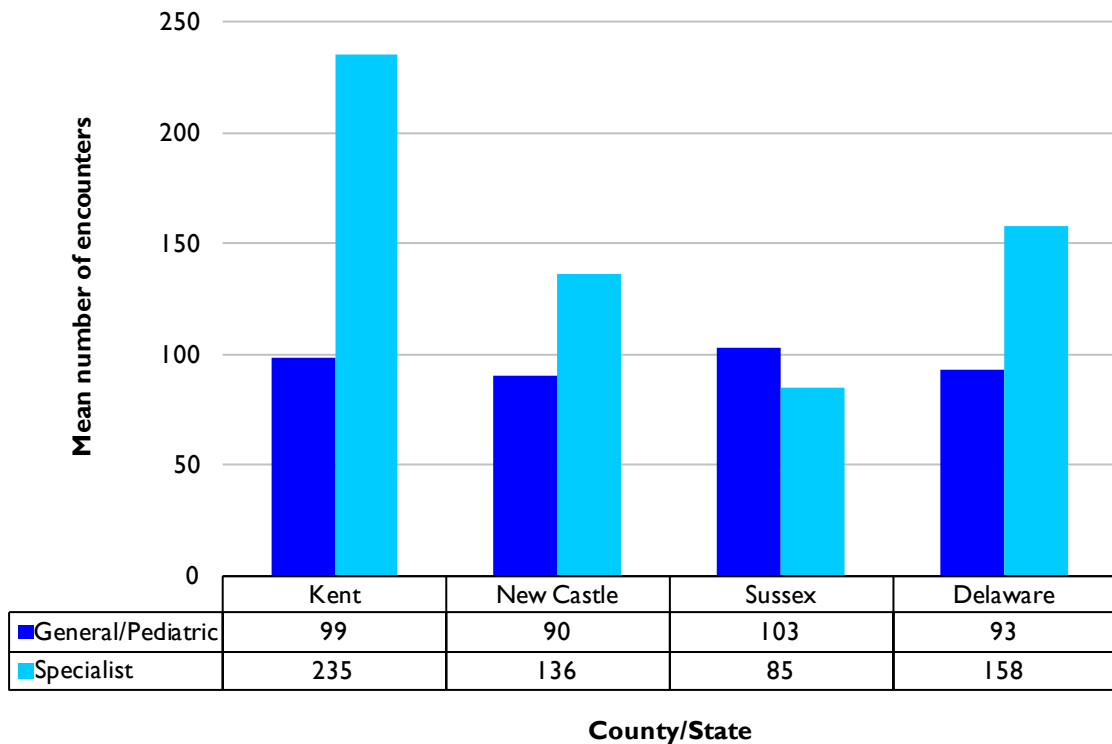
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Another measure of size and capacity is the patient flow. The survey attempted to measure this by asking for the number of weekly patient encounters by the dentists. Data were collected for the total number of patient encounters, the number of patients for treatment, post-treatment evaluation, and the number of hygiene patients. These data mirrored the number of patient encounters by dentists (Figure 3.3).

On average, Delaware dentists see about 93 patients per week at their primary practice location. In Kent County, general/pediatric dentists see an average of 99 patients per week,

down from 109 patients per week in 2016 (Figure 3.3). Specialists in Kent County see about 85 patients per week, up from about 139 in 2016. In New Castle County, the average number of patient encounters among general/pediatric dentists remained about the same (90). However, the average number of patient encounters of specialists in New Castle County increased from about 109 per week in 2016 to 136 per week in 2022. Sussex County’s general/pediatric dentists see about 103 patients per week, compared to 106 per week in 2016. Specialists in Sussex County report fewer patient encounters among Delaware’s counties: 85 per week in 2022, compared to 72 per week in 2016.

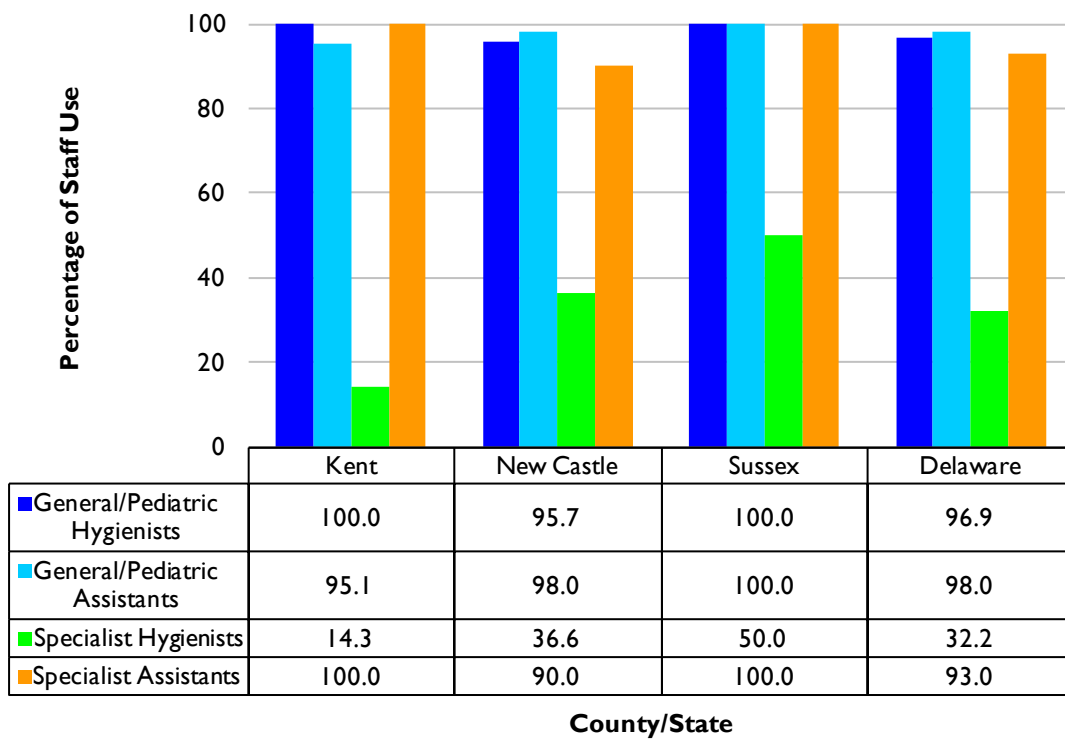
**Figure 3.3**  
**Mean Number of Weekly Patient Encounters of Dentists by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The calculation of full-time equivalencies discussed in the first section made adjustments for “auxiliaries” (dental hygienists and dental assistants) in determining the productivity of a dentist. These resources are used to provide many dental services (e.g., teeth cleaning, radiographs, etc.) that would otherwise have to be performed by the dentist. The utilization of such resources is quite high, as shown in Figure 3.4.

**Figure 3.4**  
**Percentage of Non-Dentist Staff Use by County, Delaware, 2022**

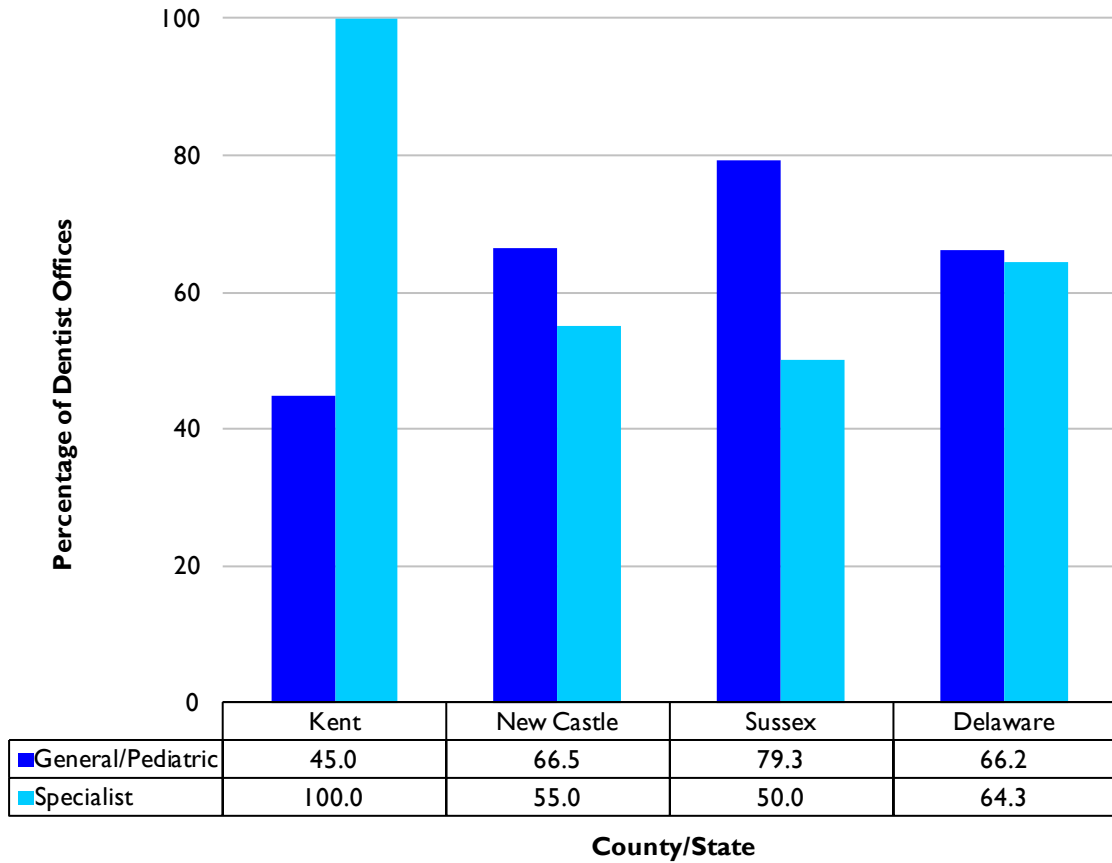


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Almost all dentists in Delaware use both dental assistants and hygienists to provide the necessary services expected of a general dental practice. In fact, there is little difference in the distributions between counties. The lower utilization of hygienists by dental specialists reflects differences between the specialties and not a lack of interest in using non-dentist resources. For example, a periodontist would rely heavily on hygienists, while an endodontist would not.

Their use of dental assistants is comparable to the use of dental assistants in general/pediatric dentistry. However, the use of Specialists Hygienists in Kent County is lower than in Sussex and New Castle counties.

**Figure 3.5**  
**Percentage of Dentist Offices with Spoken Languages Other than English**  
**by County, Delaware, 2022**



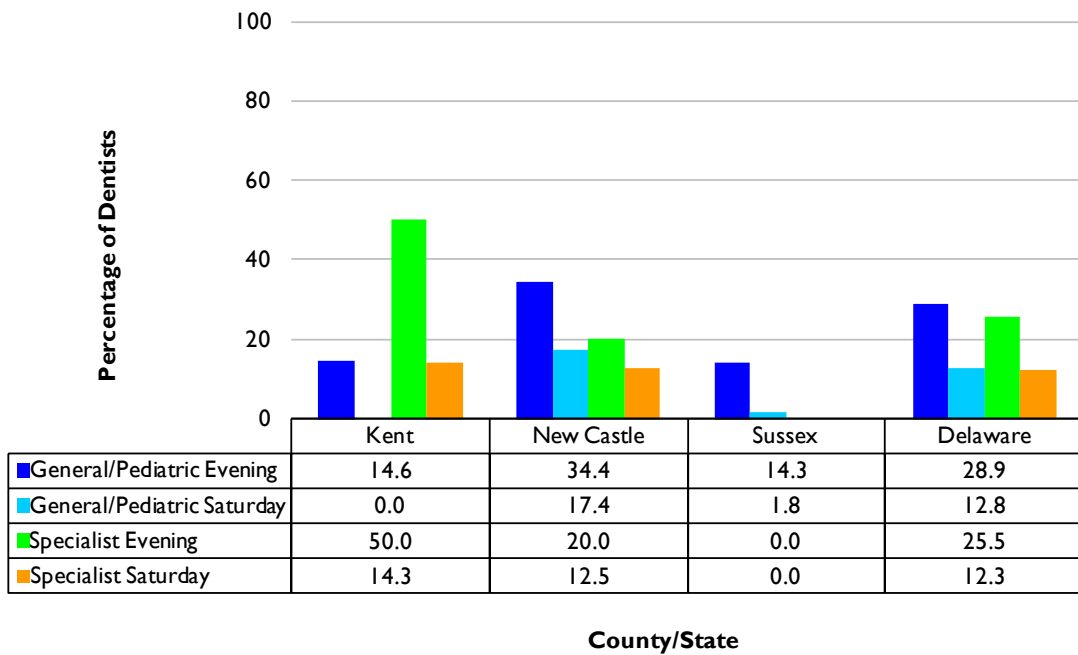
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

To assess accessibility of dental services to non-English-speaking populations, respondents were asked if languages other than English were spoken at their practice site (Figure 3.5). Across the state, about 66 percent of general/pediatric dentists and about 64 percent of dental specialists report the capability of staff to communicate in a language other

than English. Among general/pediatric dentists, the highest proportion reporting the ability to communicate in languages other than English is in Sussex County (79 percent). Spanish was the most frequently mentioned language.

Another dimension of accessibility to dental services is having non-traditional office hours, offered other than 9:00 a.m. to 5:00 p.m., Monday through Friday. Respondents were asked if they provided either Saturday or evening office hours (Figure 3.6).

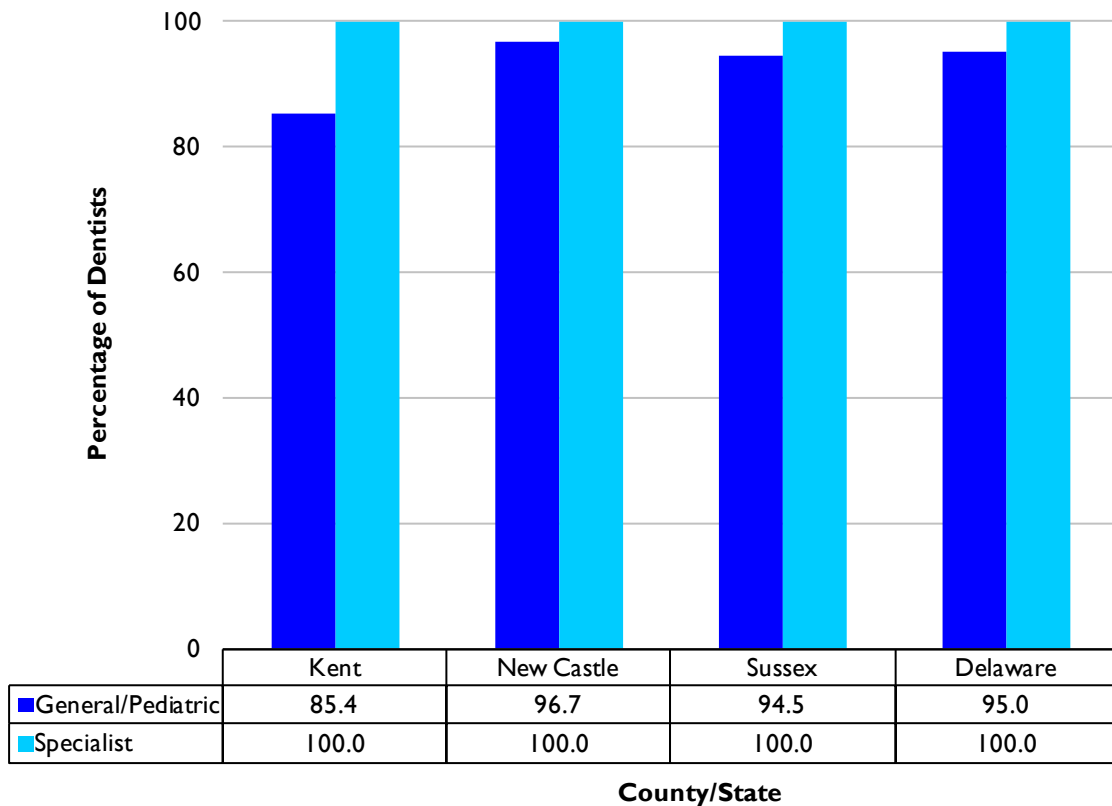
**Figure 3.6**  
**Percentage of Dentists that Offer Saturday and/or Evening Hours**  
**by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Overall, general/pediatric dentists are more likely to offer non-traditional office hours than specialists. Offering evening hours is roughly two times more common than providing Saturday hours. Dentists in New Castle County are more likely to offer non-traditional hours than dentists located in Kent County. Specialists in Kent County are more likely (50 percent) to offer evening hours than specialists in New Castle or Sussex counties.

**Figure 3.7**  
**Percentage of Dentists Accepting New Patients**  
**by County, Delaware, 2022**

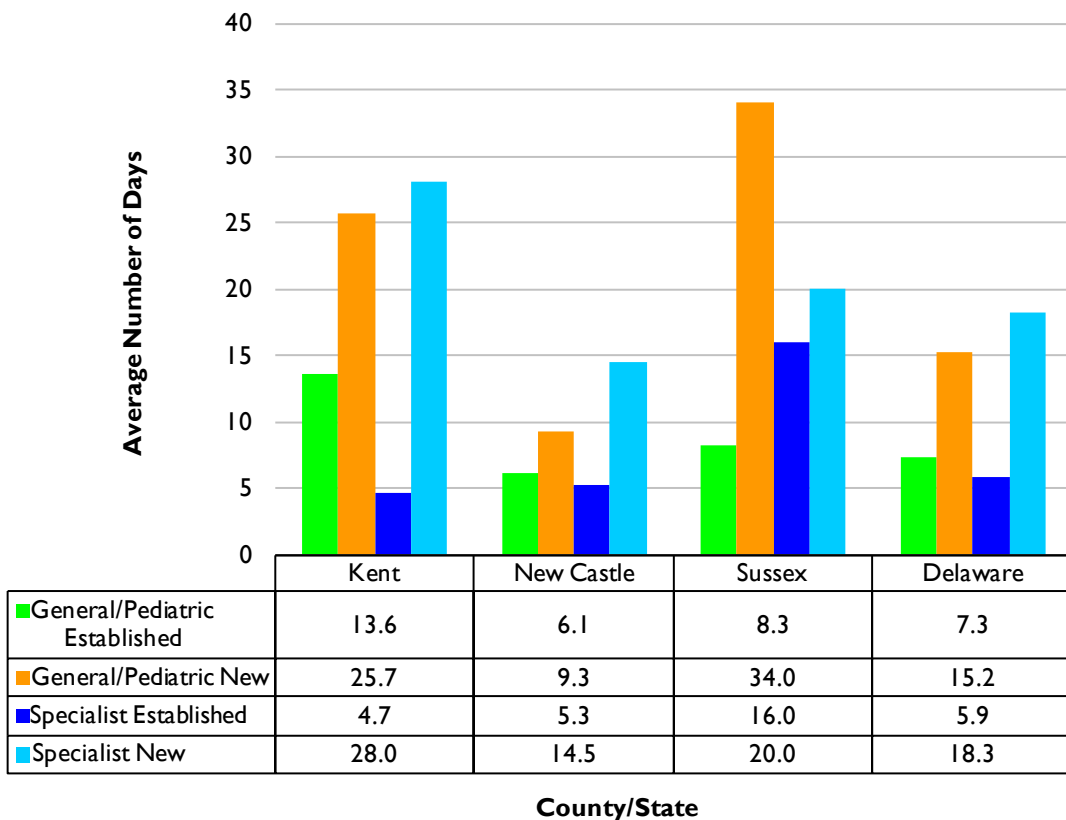


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

A more direct measure of accessibility is whether dentists are accepting new patients. Similar to the 2016 report, almost all dentists (generalists and specialists alike) are accepting

new patients. Accessibility decreased in Kent County; in 2022, 85.4 percent of generalists were accepting new patients, down from about 91 percent in 2016. In Sussex County, the proportion of generalists accepting new patients decreased from 100 percent in 2016 to 95 percent in 2022. In New Castle County, the proportion of generalists accepting new patients is virtually unchanged: 99 percent in 2016 to 97 percent in 2022. Among specialists in Kent and Sussex counties, the rate of new patient acceptance remained unchanged (100 percent) since 2016. However, the acceptance of new patients by specialists increased in New Castle County from 91.4 percent in 2016 to 100 percent in 2022.

**Figure 3.8**  
**Average Wait Time in Days for Established and New Patients**  
**reported by Dentists by County, Delaware, 2022**



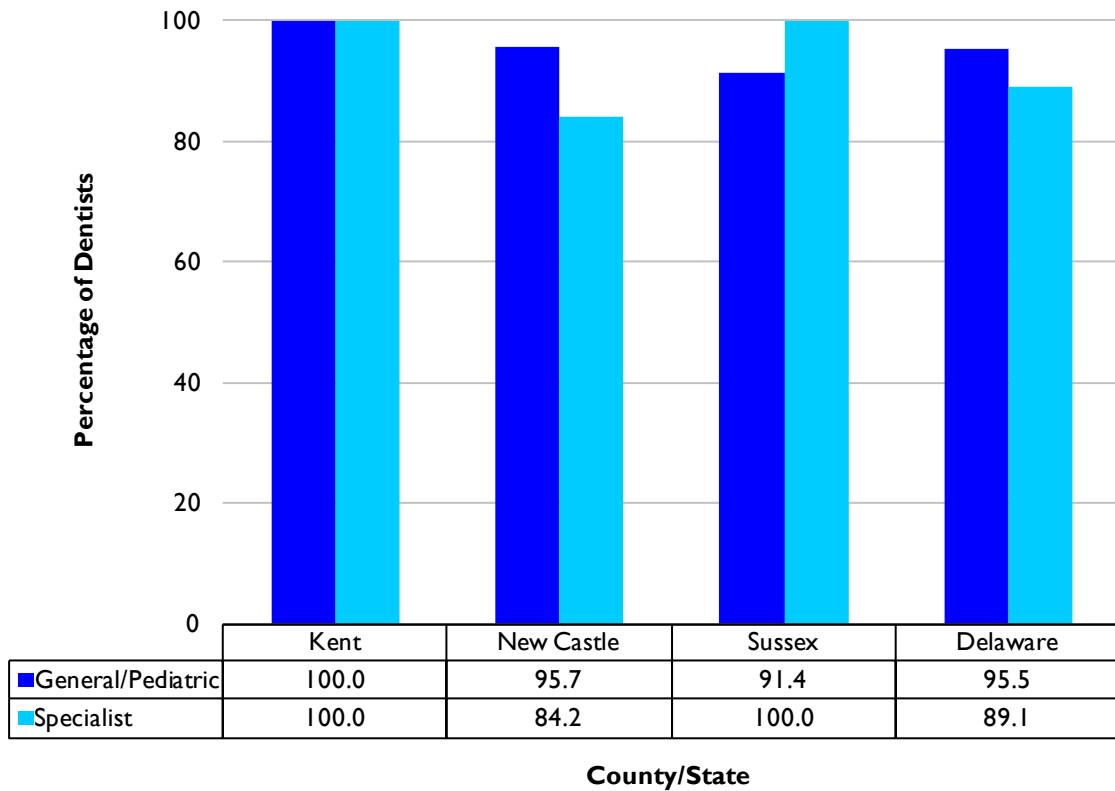
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022



The “wait time,” or how long a person must wait for an appointment once they have called the dentist’s office, varies significantly, depending on whether the problem is characterized as an emergency. Most dentists leave openings to handle emergency cases. Respondents were asked about “wait time” for non-emergency cases (Figure 3.8).

In 2022, wait times for new patients are generally longer than they are for existing patients. New patients in Sussex County seeking an appointment with a dentist who provides general/pediatric dental care will wait about 34 days, compared to 26 days in Kent County or nine days in New Castle County. For a specialist dentist, new patients in Kent County waited an average of 28 days, 20 days in Sussex County and 14.5 days in New Castle County. Established patients in Kent and Sussex counties wait about five days to see a specialist, while in Sussex County they wait about three times as long (16 days).

**Figure 3.9**  
**Percentage of Dentists Serving Pediatric Patients by County, Delaware, 2022**



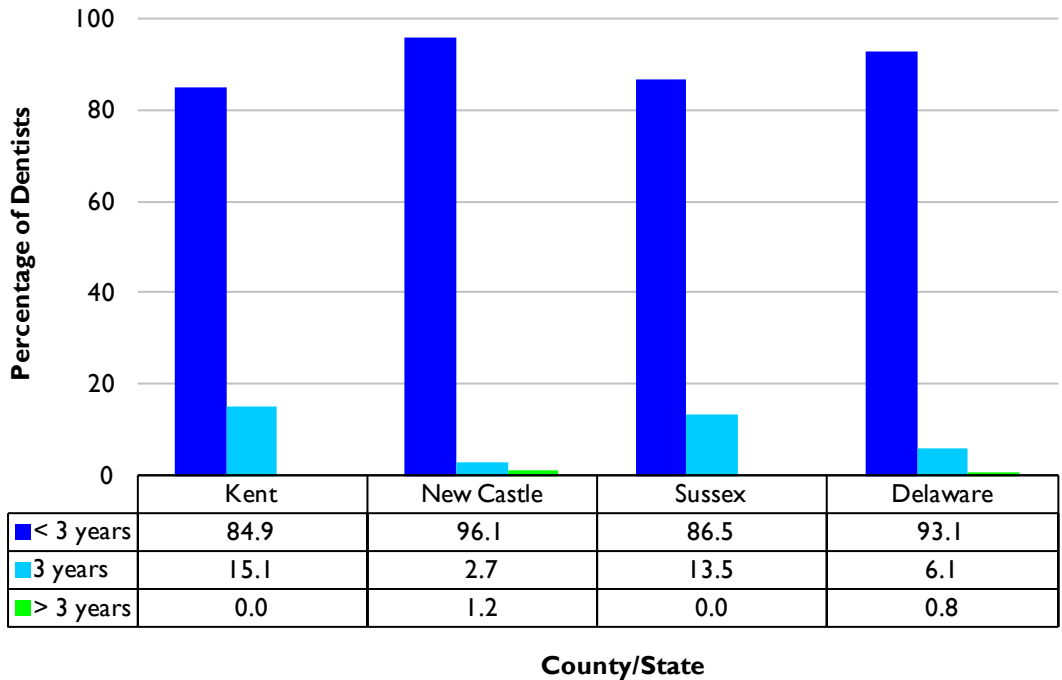
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

An overwhelming majority of dentists serve pediatric patients. However, Kent County’s generalists stand out because 100 percent of the specialists in Kent County indicate seeing pediatric patients, compared with 96 percent in New Castle and 91 percent in Sussex County (Figure 3.9). The American Dental Association<sup>7</sup> and the American Academy of Pediatric Dentistry<sup>8</sup> recommend that a child’s first dental checkup occur no later than her or his first birthday. In Delaware, about 93 percent of dentists evaluate and/or treat children under the age of 3 (up from 47 percent in 2016).

<sup>7</sup> [https://www.ada.org/sections/scienceAndResearch/pdfs/patient\\_11.pdf](https://www.ada.org/sections/scienceAndResearch/pdfs/patient_11.pdf)

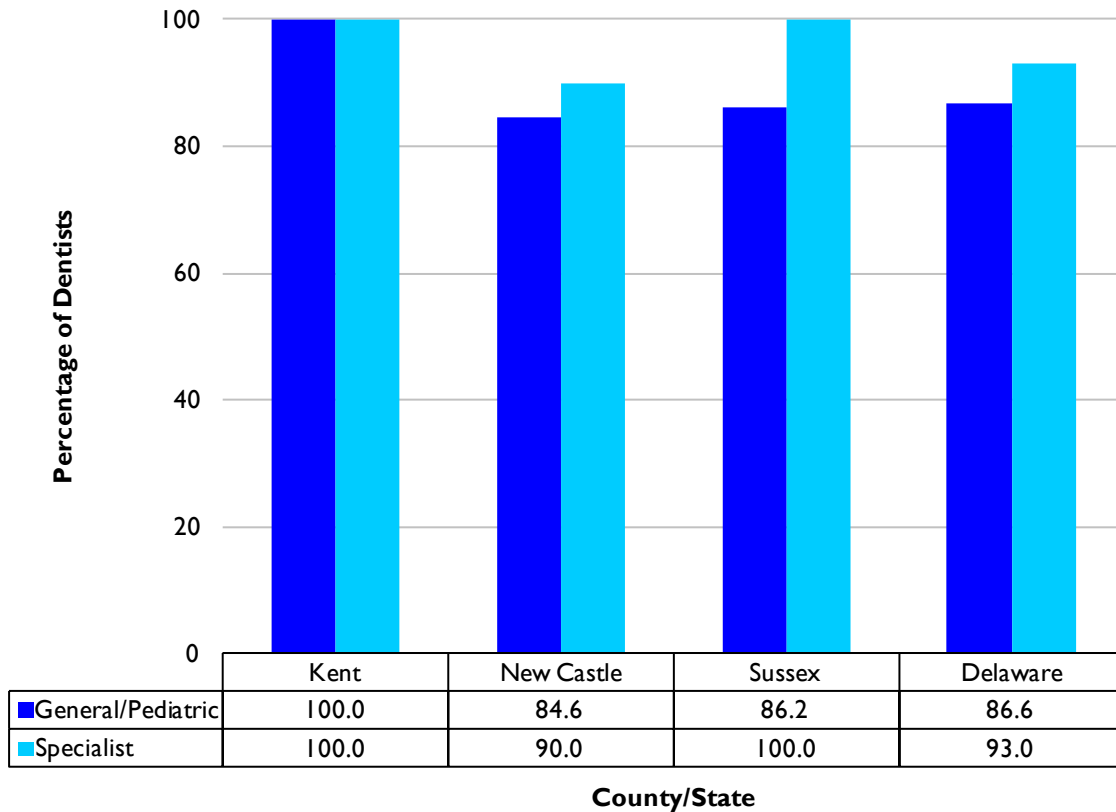
<sup>8</sup> [http://www.aapd.org/resources/frequently\\_asked\\_questions/](http://www.aapd.org/resources/frequently_asked_questions/)

**Figure 3.10**  
**Percentage of Dentists Reporting Beginning Age of Pediatric Patient Treatments**  
**by Age and County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

**Figure 3.11**  
**Percentage of Dentists Reporting Insurance Plans Participation by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

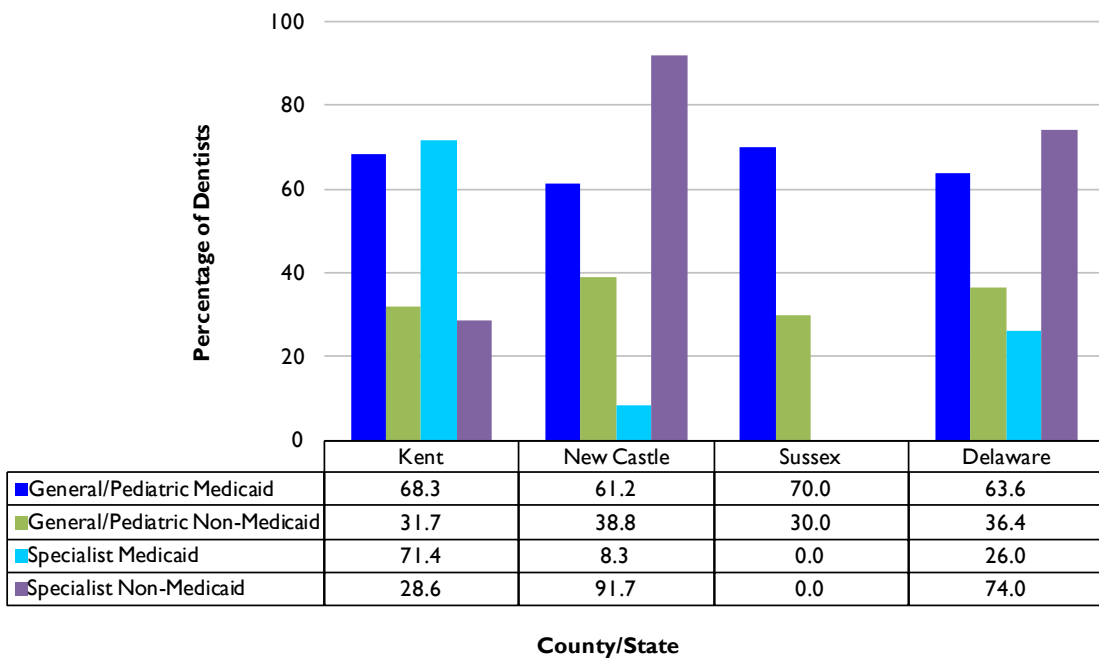
Accessibility can be influenced by the acceptance of dental insurance plans. Respondents were asked if they participated in such plans (Figure 3.11). Overall, more than 85 percent of dentists in Delaware indicate participating in a variety dental insurance programs, including Medicaid and for-profit insurances.

The proportion of dentists accepting dental health insurance plans increased across all counties. The proportion of Sussex County’s generalists who accept health insurance plans increased from 75 percent in 2016 to 86 percent in 2022. At the same time, the proportion of

specialists in Sussex County accepting health insurance plans increased from 85 percent 2016 to 100 in 2022.

Accessibility of dental services can also be influenced by the patient’s ability to pay for services rendered. Respondents were next asked to indicate what types of insurance plans they accepted (Figure 3.12).

**Figure 3.12**  
**Percentage of Dentists Reporting Participation in Medicaid and Non-Medicaid Insurance Programs by County, Delaware, 2022**



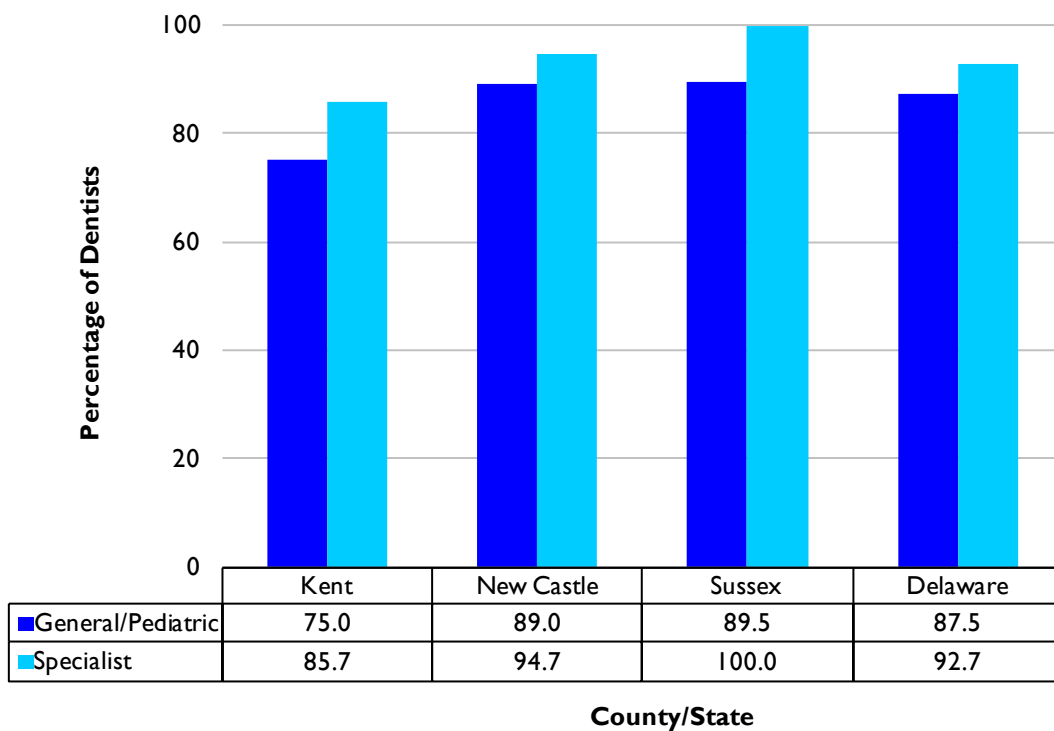
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The proportion of general/pediatric dentists accepting Medicaid consistently increased between the 1998 and 2012 surveys but decreased in the 2016 survey. The situation in 2022 shows a marginal increase in Medicaid acceptance among general dentists (up from 62 in 2016 to 64) and a significant decrease among specialists (from 59 percent in 2016 to 26 percent in

2022). The survey itself does not provide an explanation to this downturn. It remains to be seen if this continues in future Delaware dental surveys.

Respondents were asked if they provided flexible payment plans or installment plans (Figure 3.13). Dentists practicing in Sussex and New Castle counties are more likely than those practicing in Kent County to provide flexible payment options. In Kent County, specialists are less likely than their general/pediatric counterparts to provide such options. Overall, about 90 percent of all Delaware dentists offer flexible payment or installment plans for their patients.

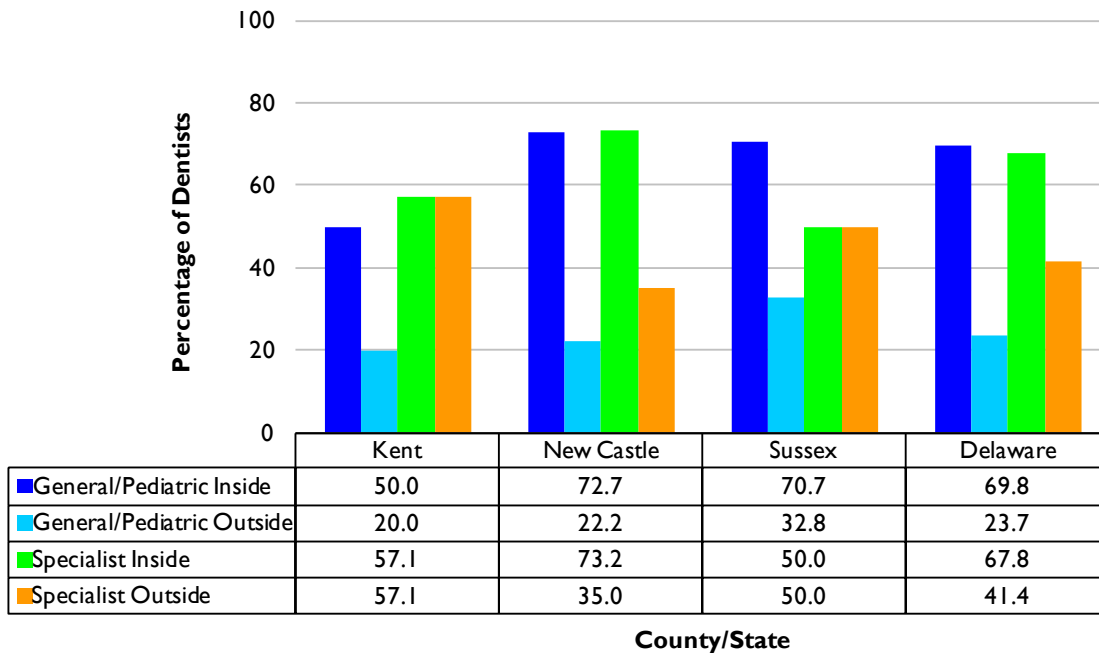
**Figure 3.13**  
**Percentage of Dentists Providing Flexible Payment Options by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Given that medically necessary dental care is not always affordable, the survey asked if they provided any type of charity care. For purposes of this study, charity care is defined as providing a service for which the dentist understood that he/she would not be paid. Bad debt was excluded from the definition of charity care. About 77 percent of all dentists provide some form of charity care in their offices, and specialists are more likely than general/pediatric dentists to provide such care. This pattern is similar across the counties with the exception of Sussex County. Only 50 percent of specialists in Sussex County provide charity care inside their offices, compared to about 75 percent of general/pediatric dentists. In addition, approximately 30 percent of dentists in Delaware provide charity care outside their offices, presumably in clinics and other similar settings (Figure 3.14).

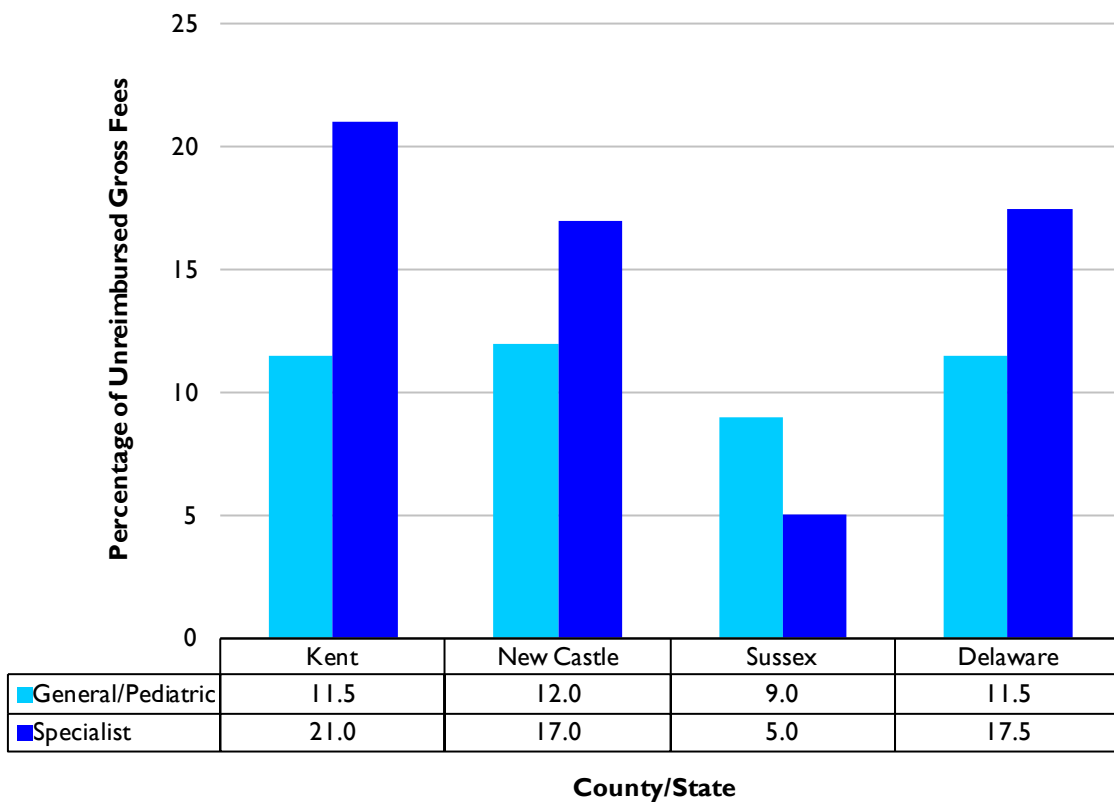
**Figure 3.14**  
**Percentage of Dentists Providing Charity Care In/Out of Office**  
**by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Survey respondents were next asked what proportion of their gross fees was unreimbursed, including uncollectables, non-charity, or discounts. For generalist dentists, the proportion of unreimbursable fees increased from about 3 percent in 2016 to about 11.5 percent in 2022. Specialists reported a similar increase in unreimbursable fees, from 4 percent in 2016 to about 17.5 percent in 2022. While the cause of these increases cannot be ascertained from the current survey, it would be worthwhile to explore this phenomenon in the next dental survey.

**Figure 3.15**  
**Percentage of Unreimbursed Gross Fees of Dentists, by County, Delaware, 2022**



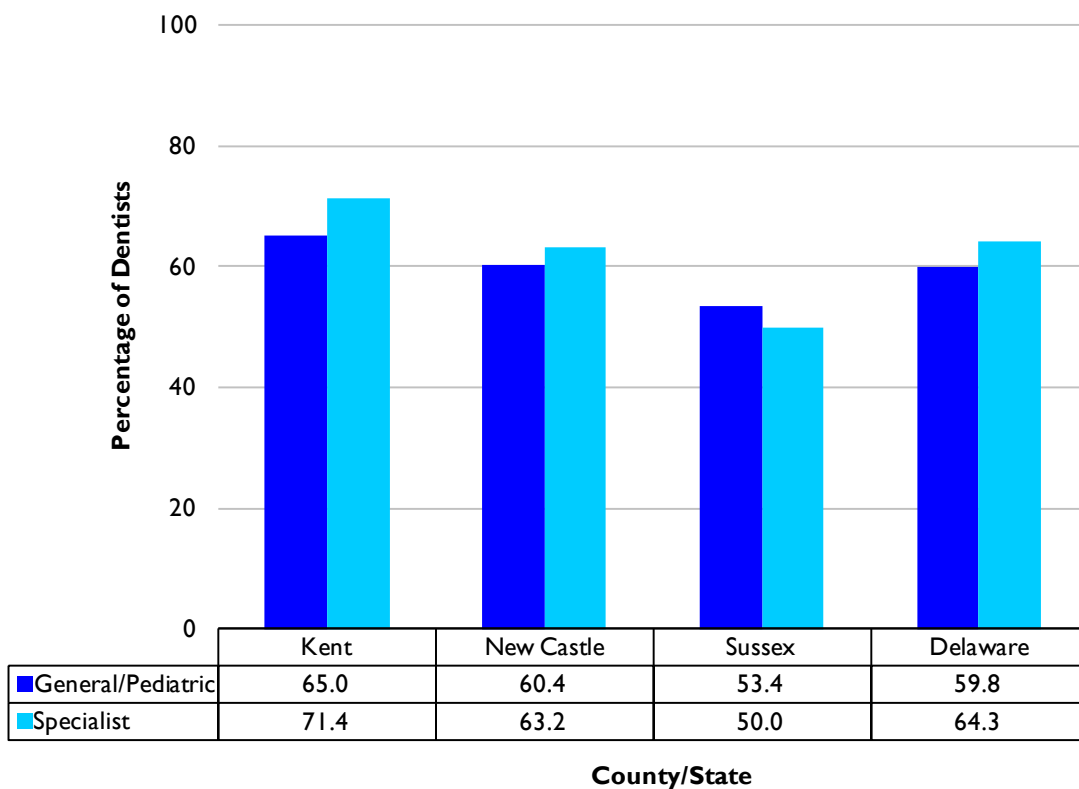
Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022



For dentists to be highly productive, it is imperative that they obtain qualified hygienists, dental assistants, and office staff. These health care workers are force multipliers and impact the calculated federal FTE's (FED.FTE). The first issue was to measure what percent of dentists consider their facility to be fully staffed (Figure 3.16).

About 60 percent of general/pediatric dentists answered that their offices are fully staffed by dental hygienists and dental assistants. The highest rate is measured among Kent County's specialist dentists where the percentage reporting being fully staffed stands at about 71 percent. General/pediatric dentists report worse staffing levels than the specialist dentists. Staffing needs are different for specialists and general/pediatric dentists.

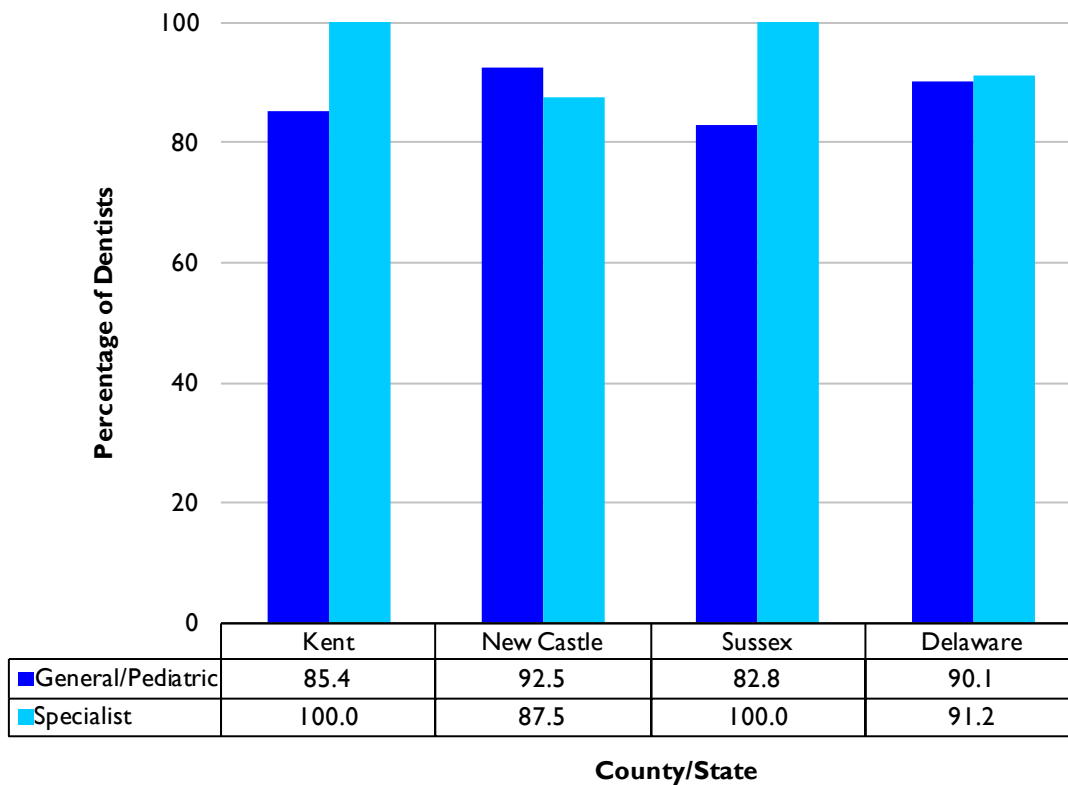
**Figure 3.16**  
**Percentage of Dentists Indicating Fully Staffed Offices (by Dental Hygienists and Dental Assistants), by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Dentists were next asked to assess staffing levels for dentists in their practices (Figure 3.17). Across Delaware, 90 percent of general/pediatric dentists and specialists reported being fully staffed by dentists. Some variation among counties exists – 100 percent of specialists in Kent and Sussex counties report being fully staffed by dentists. New Castle County has the highest proportion of general/pediatric dentists (92.5 percent) reporting being fully staffed by dentists.

**Figure 3.17**  
**Percentage of Dentists Indicating Fully Staffed Offices (by Dentists)**  
**by County, Delaware, 2022**

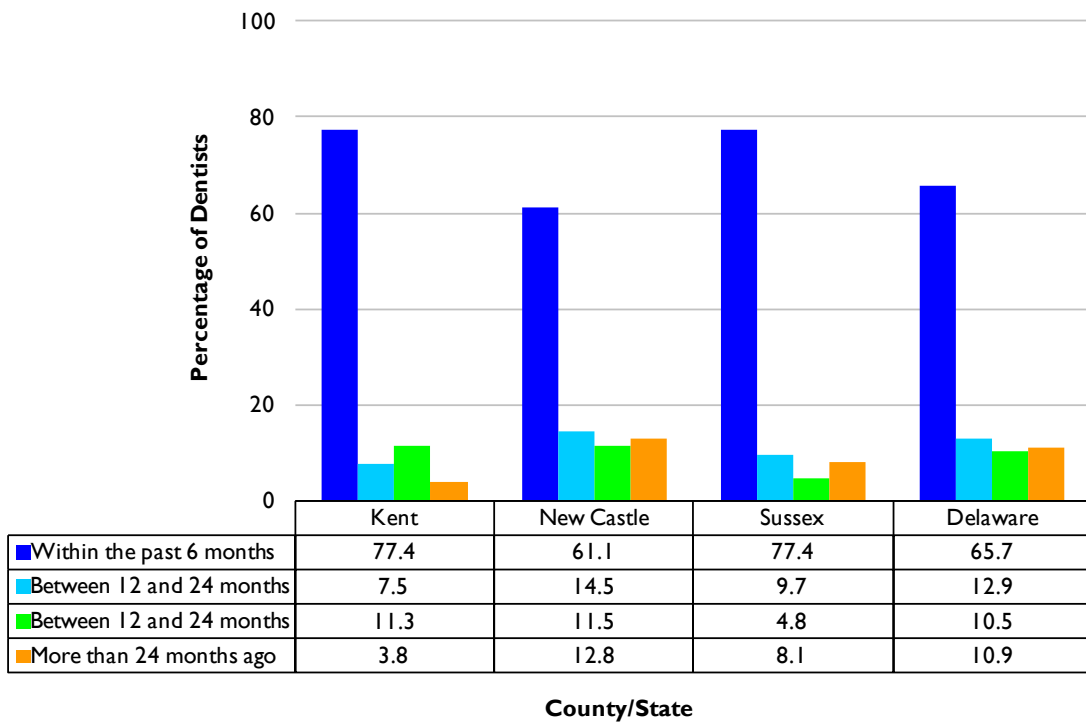


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

To assess the unfulfilled need for dental staff and the ability to fill open positions, dentists were asked to report the last time they hired staff (Figure 3.18) and how long it took

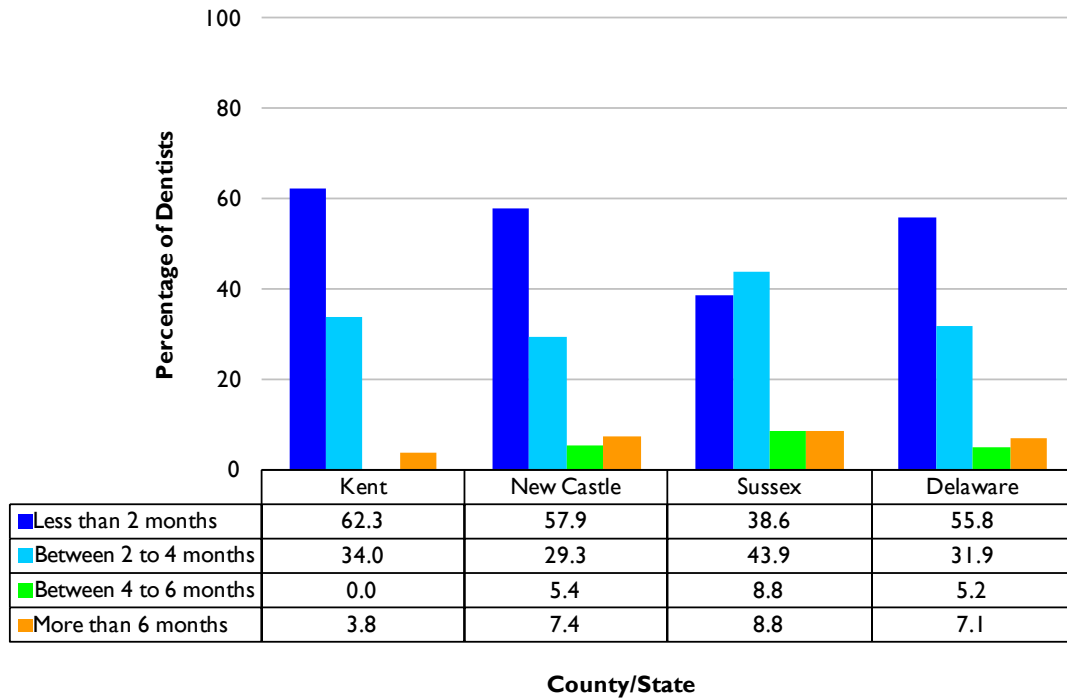
them to fill open positions (Figure 3.19). About 66 percent of dentists in Delaware hired a staff member within six months. More than 77 percent of Kent County’s and 77 percent Sussex County’s dentists hired new staff within the last six months. When hiring staff, 56 percent of dentists reported being able to fill positions within two months and 32 percent reported filling positions within two and four months.

**Figure 3.18**  
**Percentage of Dentists by Last Reported Hiring-Time of Staff by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

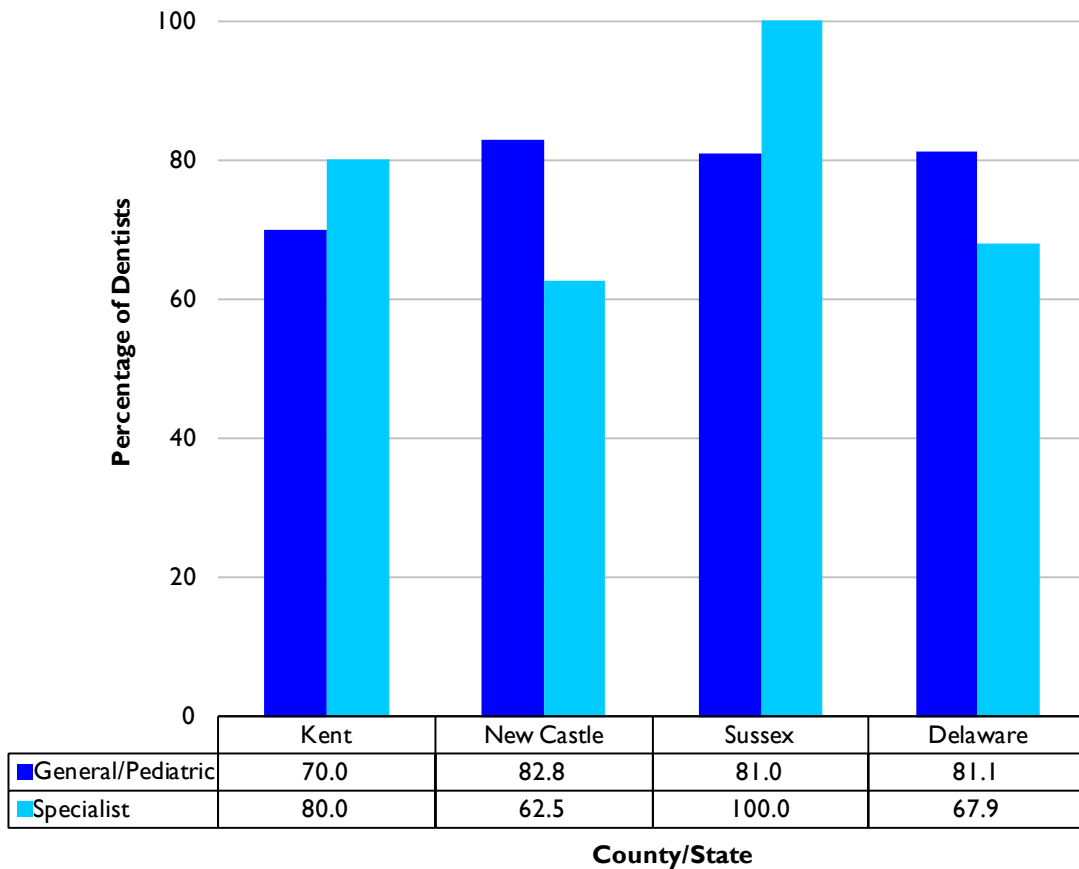
**Figure 3.19**  
**Percentage of Dentists Reporting How Long It Took to Hire Dental Staff by County, Delaware 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The survey inquired about any shortage of qualified dental staff (Figure 3.20). In 2022, about 81 percent of general/pediatric dentists (up from 44 percent in 2016) and about 68 percent of specialists (up from 46 percent in 2016) report a perceived shortage of qualified dental staff. The situation across counties varies; in New Castle and Sussex counties, general/pediatric dentists are more likely (83 and 81 percent, respectively) to report shortages, compared to their counterparts in Kent County (70 percent). About 100 percent of specialists in Sussex County report a shortage of qualified dental staff, compared to 90 percent in Kent County and 62 percent of specialists in New Castle County.

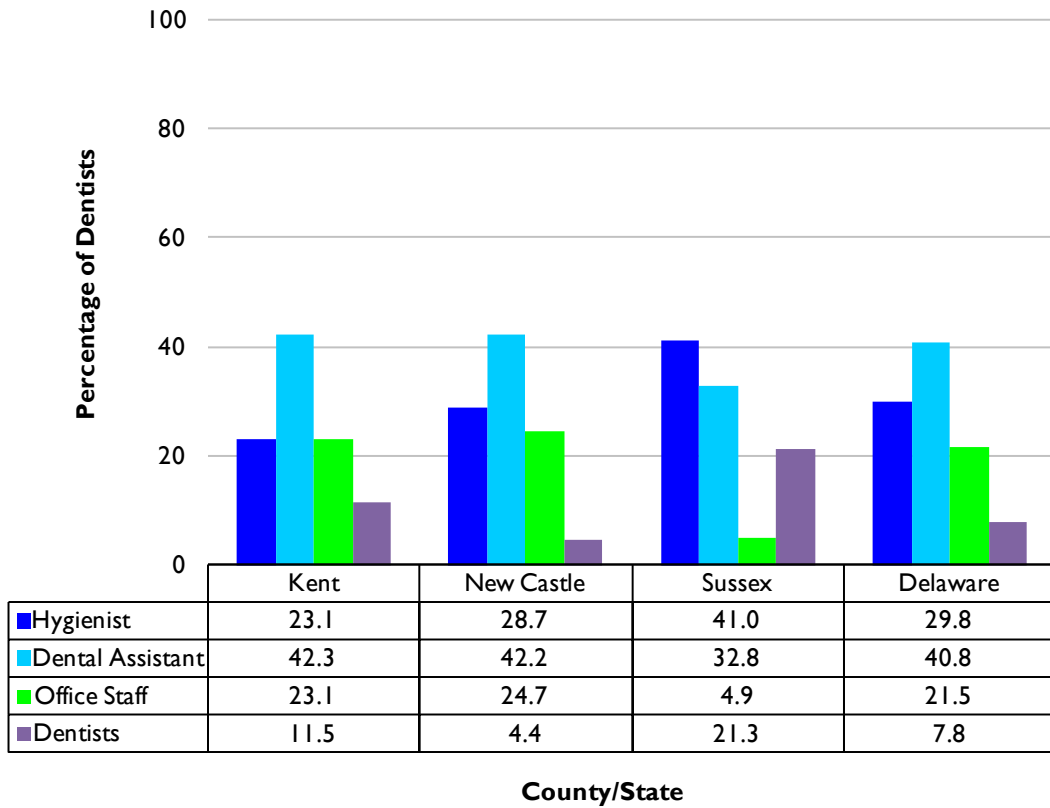
**Figure 3.20**  
**Percentage of Dentists Indicating Perceived Shortage**  
**of Qualified Dental Staff by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The survey addressed the degree of difficulty in filling different categories of non-dentist and dentist positions. It appears that Sussex County dentists have more difficulty filling hygienist positions than the other counties but have the greatest success in hiring office staff positions (5 percent) compared to their counterparts in New Castle and Kent counties (23 percent and 25 percent, respectively). New Castle County dentists report having the least difficulty filling dentist positions (4 percent), compared to 12 percent in Kent County and 21 percent in Sussex County (Figure 3.21).

**Figure 3.21**  
**Percentage of Dentist Reporting Most Difficult Positions to Fill**  
**by County, Delaware, 2022**

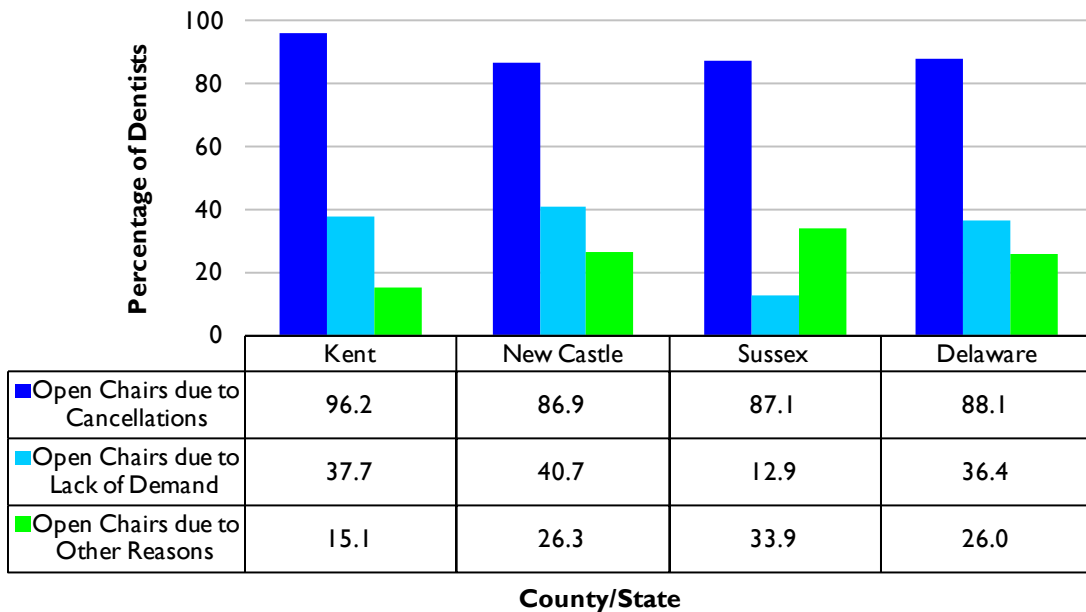


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

A set of questions attempted to provide contextual data about services provided by dentists. About a third of Delaware’s dentists reported open chair hours the week before they completed the survey. Of these, 88 percent reported open chair hours due to cancellations (Figure 3.22). The highest proportion (96 percent) of open chair hours due to cancellations was among dentists from Kent County. Open chair hours in Delaware due to lack of demand stood at 36 percent. More than 40 percent of New Castle County’s dentists reported open chair hours due to lack of demand, closely followed by Kent County’s dentists (38 percent) and a significantly lower proportion of Sussex County’s dentists (13 percent). About 26 percent of

dentists in Delaware report open chair hours for reasons other than cancellations or lack of demand.

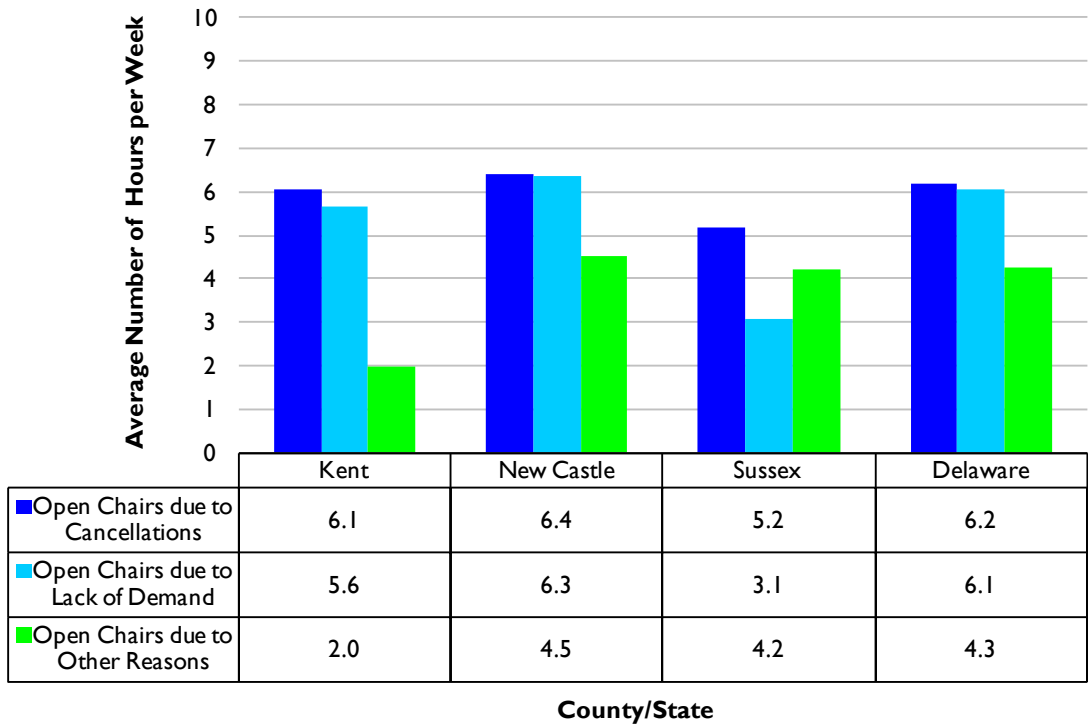
**Figure 3.22**  
**Percentage of Dentists Reporting Open Chairs Due to Cancellation, Lack of Demand, and Other Reasons, by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

In 2022, the average number of open chair hours due to cancellations is 6.2 hours; due to lack of demand, 6.1 hours; and due to other reasons, 4.3 hours (Figure 3.23). There is minimal variation in open chair hours across counties. However, differences exist among counties when considering open chair hours due to lack of demand. The highest number of open chair hours due to lack of demand (6.3 hours) is reported by dentists from New Castle County followed by dentists in Kent County (5.6 hours). Dentists from Sussex County reported the lowest number of open chair hours due to lack of demand.

**Figure 3.23**  
**Average Number of Open Chair Hours per week for Dentists with Open Chairs Due to Cancellation, Lack of Demand, and Other Reasons, by County, Delaware, 2022**

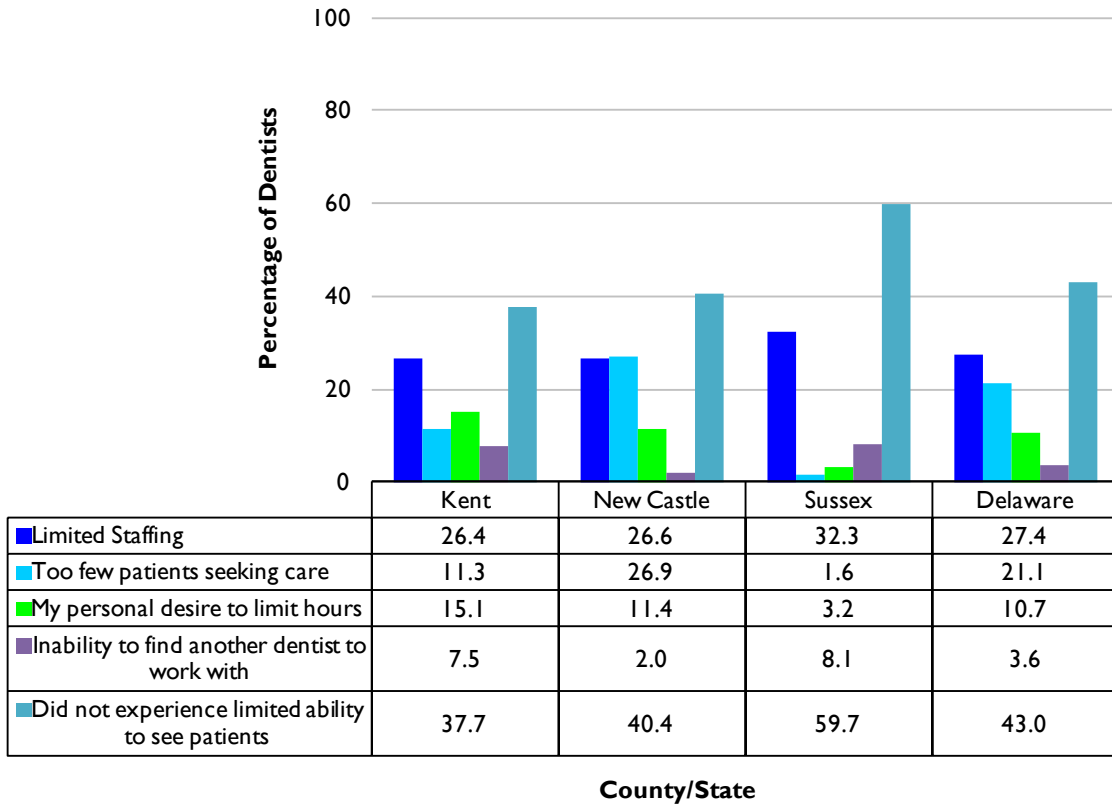


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Sometimes dentists themselves have reasons to limit their time seeing patients (Figure 3.24). Fifty-seven percent of dentists reported limiting patient hours. The highest proportion came from Kent County (62.3 percent); the lowest came from Sussex County (40 percent). The primary reason for limiting seeing patients – limited staffing – was most often (32 percent) reported in Sussex County. Too few patients seeking care was the primary reason (27 percent) in New Castle County. Personal desire as a reason to limit patient encounters was most often (15 percent) reported in Kent County.



**Figure 3.24**  
**Percentage of Dentists by Reported Reasons/Limits to Seeing Patients,**  
**by County, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

## 4. Spatial Distribution – Dentists

In the first section of this report, Kent County was identified as an area having the worst population-to-FTE.FED dentist ratio in 2022. In New Castle County, the population-to-FTE.FED dentist ratio increased since 2016. In Sussex County, the ratio decreased since 2016.

The federal government recognizes the importance of having an adequate number of dentists in areas smaller than states or counties. The federal guidelines governing the shortage area designation program for dentally underserved areas and populations among others indicate: (For an excerpt from the rule governing Health Professional Shortage Area (HPSA) designation, see Appendix B.)

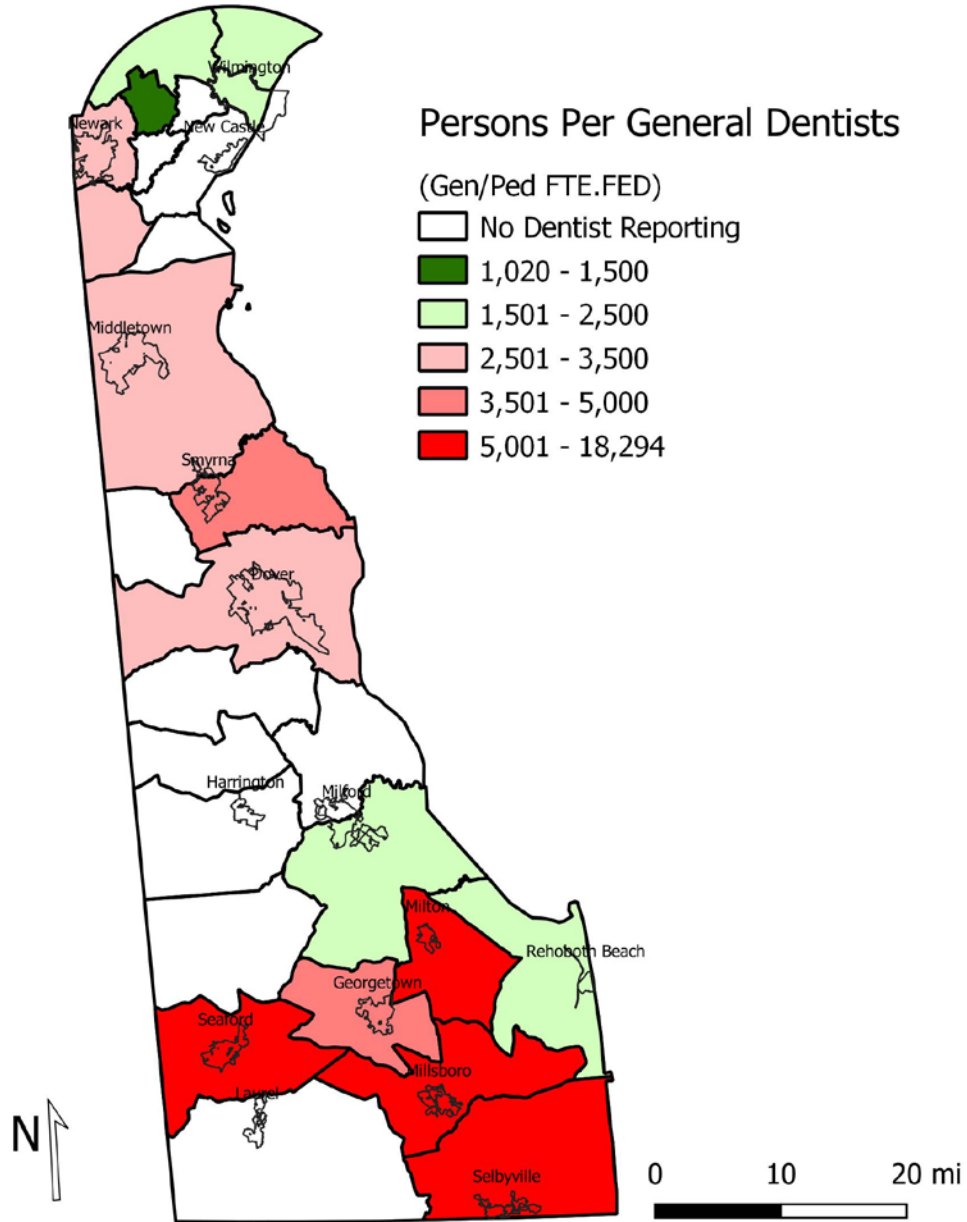
- a) Rational areas for the delivery of primary dental care services can be counties, parts of counties, and neighborhoods within metropolitan areas with a strong identity and a population of 20,000.
- b) In general, an underserved area will have a ratio of 5,000:1 or higher to qualify. The population-to-dentist ratio is only one of the criteria used for shortage area designation.
- c) The distance criterion, which defines such areas in Delaware, is roughly 25 miles between centers.

Good examples for such areas in Sussex County include Lewes/Rehoboth, Georgetown, Milford, Millsboro, and Seaford. In Delaware, these general areas are census county divisions (CCDs). The CCDs work well in Sussex County because of the distinct town centers. The distinctions are not quite as clear in Kent County, where Dover and its suburbs are an additional example to consider. The Smyrna and Harrington areas are the best examples of distinct CCDs. Wilmington, Newark, New Castle, and Middletown are the most distinct areas, although their suburban fringes are not well defined. However, Delaware's 27 CCDs are the most useful for the spatial examination presented in this report.

The spatial distribution of general/pediatric dentists relative to population CCD in Delaware is found in Figure 4.1. The important areas to look at are those in shades of red. Those in darkest red are too high with too few FTE dentists for the resident population. Figure 4.1 shows that New Castle County is generally well served by dentists, even though they are unevenly distributed, with many located in northern New Castle County. While the distances are short and certainly within the federal 25-mile criteria, there may still be reason for concern as transportation, personal finances, and convenient office hours may be an access barrier to some areas and among certain populations. There are no CCDs in New Castle County above the 5,000:1 population to provider ratio (dark red), which would indicate a potential dental shortage area. Four areas – the New Castle, Red Lion, Upper Christiana, and Lower Christiana CCDs – are reporting no dentists. In the case of Red Lion, the population is too small to be considered a rational service area. Lower Christiana’s population is already above 20,000 but the perceived shortage is potentially alleviated by the surrounding CCDs. Also, Wilmington seemingly has a sufficient supply of dentists, but those dentists also see patients from outside the city. This may leave some patients with too few dentists to meet their needs.

Kent County has a very different profile. The majority of the dentists practicing in Kent County appear to be focused in Smyrna and Dover. There are no dentists reporting in five Kent County CCDs: Kenton, Central Kent, Felton, Harrington, and Milford North. Milford North is the addition since 2016. With the exception of Dover (the pink area in the middle of Kent County with a population of around 80,000), Smyrna (the red area north of Dover with a population around 25,000), and Central Kent (the blank area south of Dover with a population around 27,000), none of the other CCDs reach a population of 20,000; thus, they do not meet the criteria for a rational service area and cannot be considered as separate HPSA areas.

**Figure 4.1**  
**Number of Persons per FTE General/Pediatric Dentists in Delaware 2022**  
**by Census County Division**

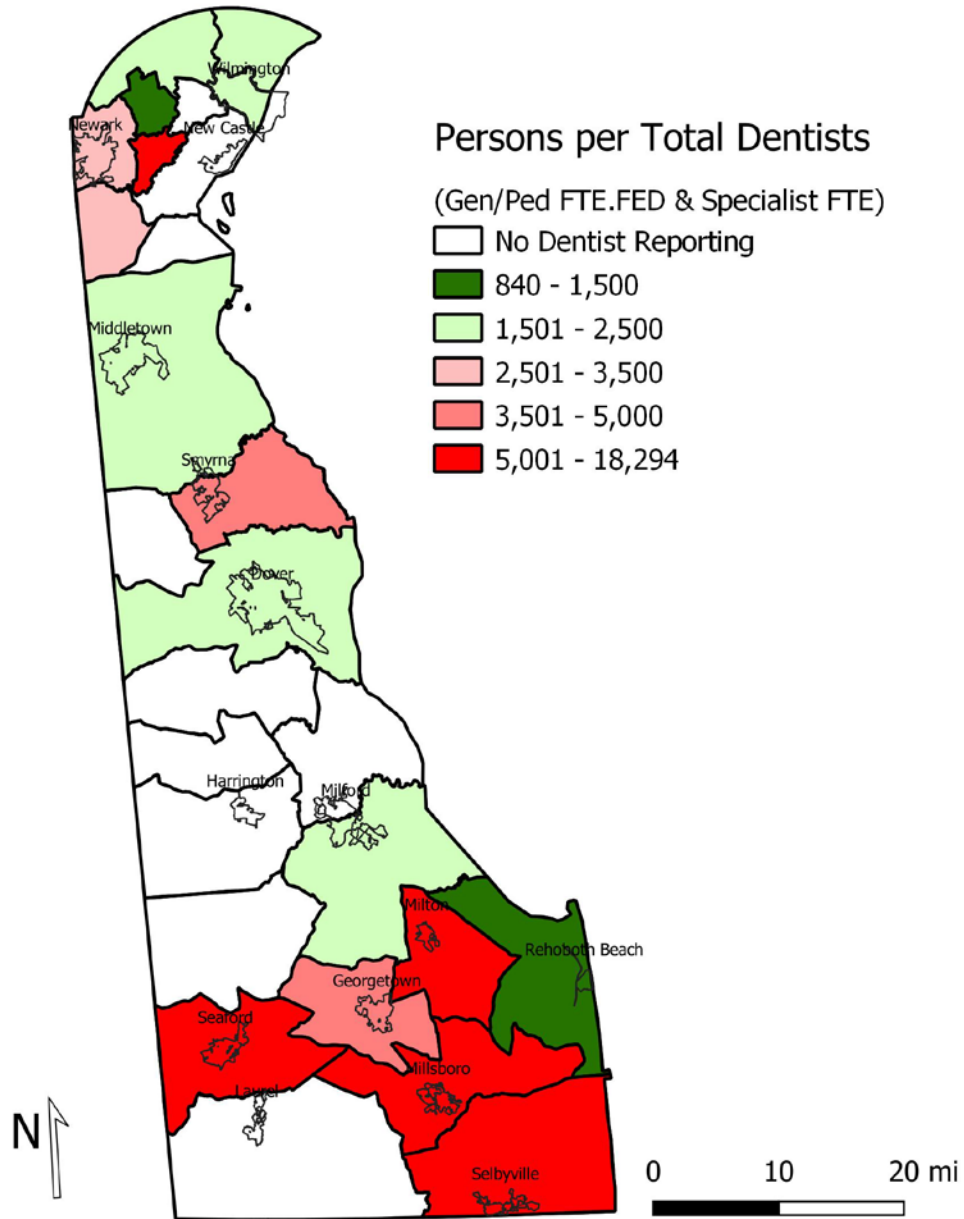


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Dentists are in short supply throughout Sussex County. Only the Milford South and Rehoboth CCD have an adequate supply of dentists. Two out of Sussex County's nine CCDs report no dentists, compared to 2016 when four CCDs reported no dentists. The Bridgeville-Greenwood and Laurel-Delmar CCDs are currently without dentists. The Georgetown CCD is on the verge of meeting the 5,000:1 ratio. Four areas (Seaford, Milton, Millsboro, and Selbyville) exceed the federal guideline of 5,000:1.

In Figure 4.2, ratios are calculated by pooling the general/pediatric dentists and specialists. However, the conclusions reached by pooling both types of dentists are essentially the same as Figure 4.1, which depicts general/pediatric dentists only. Improvements in the FTE-per-population ratio are observable in only four CCDs: Upper Christiana, Middletown, Dover, and Rehoboth.

**Figure 4.2**  
**Number of Persons per Total Dentists (General/Pediatric FED.FTE & Specialist FTE) in Delaware 2022 by Census County Division, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

## 5. Methodology – Dental Students/Residents Survey

In 2022 a new data collection effort was piloted, collecting data from dental students and dental residents (students). The survey of dental students was fielded alongside of the dentist survey. The dental student survey included sets of questions about demographics, student debt burden, and dental licensing.

The method chosen to gather the information among dental students was a self-administered online survey. The study population was defined as dental students and dental residents who come from Delaware or who are currently in a residency program in Delaware. To reach this population, the team (representatives from Delaware State Dental Society, Division of Public Health, and the University of Delaware) that developed the questionnaire used their professional and personal contacts to elicit responses from the target study population. Additionally, directors of these programs were contacted with a request to forward the questionnaire to eligible respondents.

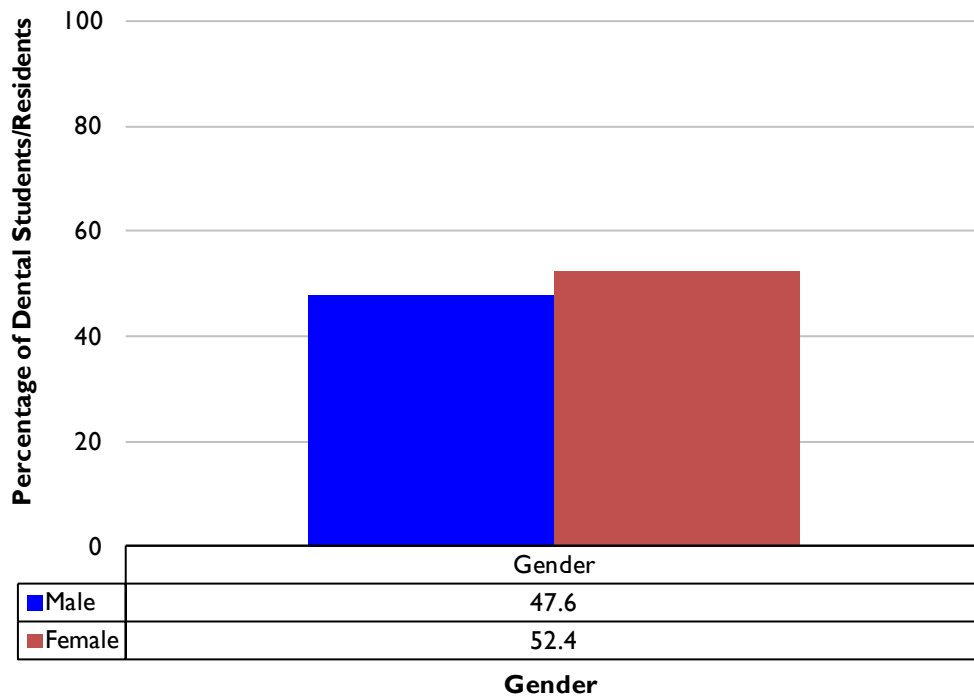
While the exact size of the study population of students/residents is not exactly known, the estimate produced by the study team suggested that between 30 and 50 individuals should fit the definition of the study population. The survey was fielded from April to July of 2022. A total of 29 responses were received. Out of these, seven were removed because they were duplicates or they contained incomplete data.

The next two sections of the report present tabulations for respondents to the student survey. Data presented here are unweighted and no effort is made to generalize the results to anyone else but those who completed the survey.

## 6. Demographics – Dental Students/Residents

Delaware’s dental students and dental residents answered a set of questions as they pertain to their demographic characteristics. About 52 percent of dental students who responded to the survey indicated that they are female (Figure 6.1).

**Figure 6.1**  
**Percentage of Dental Students/Residents by Gender, Delaware, 2022**

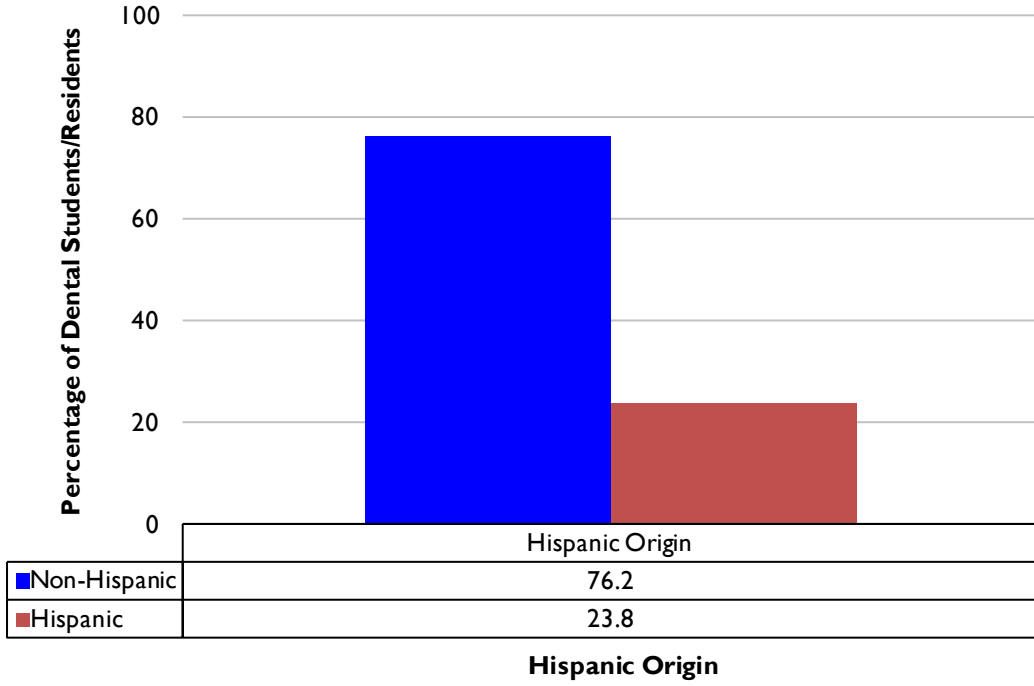


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

About 24 percent of dental students/residents identified Hispanic (Figure 6.2). White students represented the highest proportion of dental students and residents (62%) and Asian and Pacific Islander and “Other” races were represented evenly at 19 percent each (Figure 6.3). There were no Black respondents.

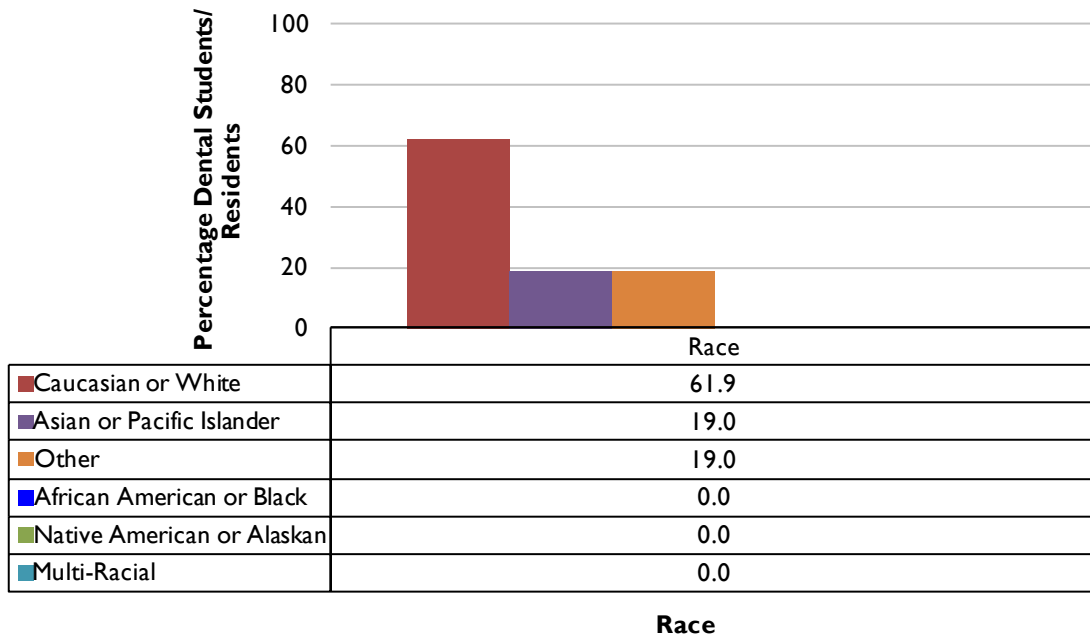


**Figure 6.2**  
**Percentage of Dental Students/Residents by Hispanic Origin, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

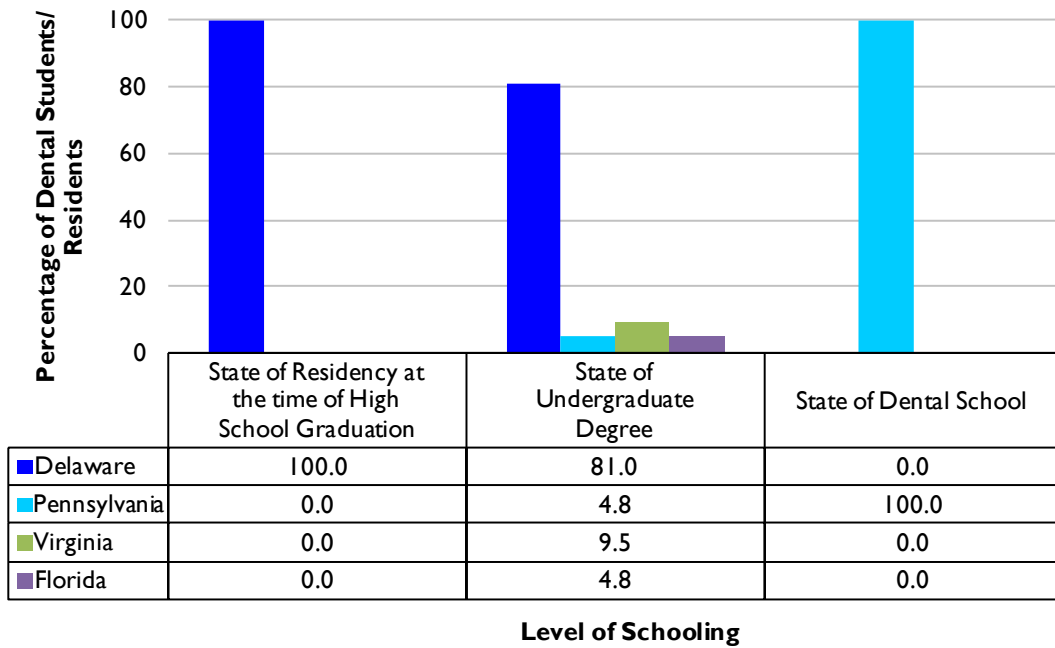
**Figure 6.3**  
**Percentage of Dental Students/Residents by Race, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

To ascertain the state of origin of Delaware’s dental students/dental residents, respondents were asked a set of questions. One hundred percent of the respondents indicated that they graduated from a high school located in Delaware. One hundred percent of the respondents indicated that they are currently completing or have completed a dental school in Pennsylvania. About 81 percent of respondents indicated that they earned their undergraduate degree in Delaware, 10 percent graduated from an undergraduate program in Virginia, and about 5 percent respectively graduated from Florida and Pennsylvania (Figure 6.4).

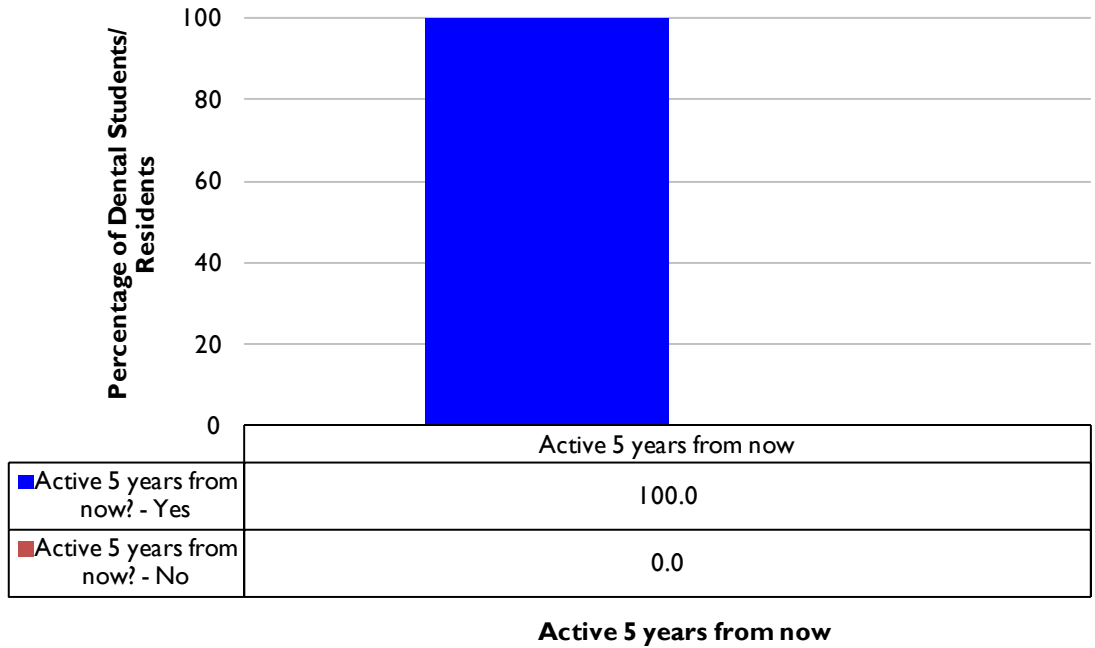
**Figure 6.4**  
**Percentage of Dental Students/Residents by State of Origin, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Dental students/residents were next asked to indicate if they expect to be active in Clinical Dentistry five years from now (Figure 6.5). One hundred percent of respondents said they plan to be active in clinical dentistry in five years.

**Figure 6.5**  
**Percentage of Dental Students/Residents that Intend to be Active in Clinical Dentistry in Five Years, Delaware, 2022**

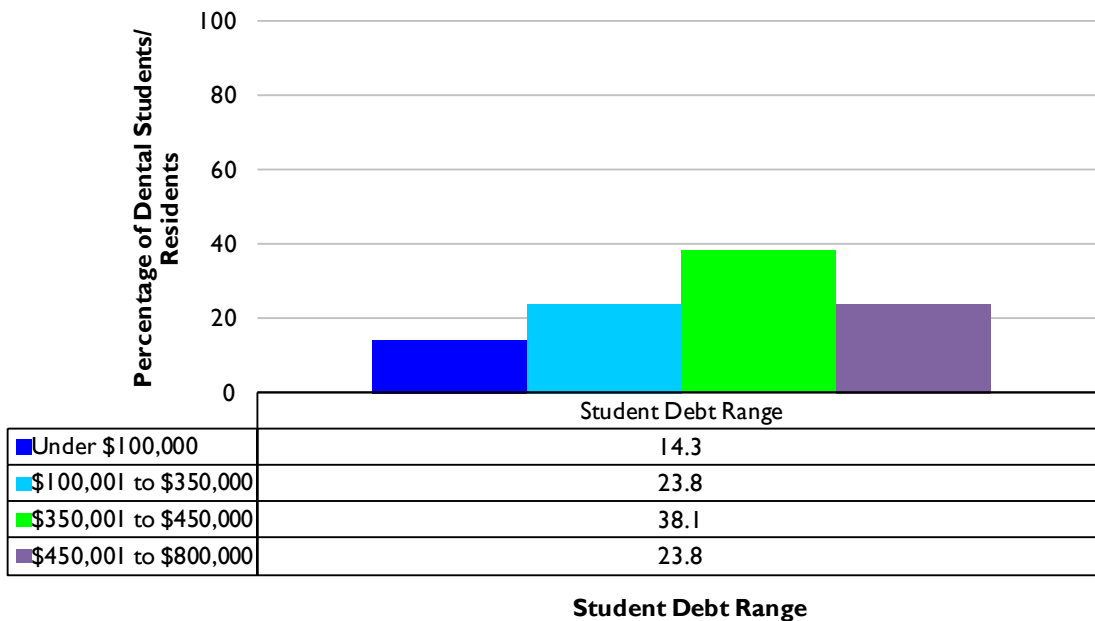


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

## 7. Outlook and Licensure – Dental Students/Residents

This section examines the responses of students/residents as they pertain to their future work in the field of dentistry. As students decide where they locate their debt burden likely plays a role in that decision. Students/residents were asked to estimate the student debt they will have accrued by the time they finished their studies (Figure 7.1). About 62 percent of respondents indicated that their student debt (undergraduate and dental school combined) will be above \$350,000. Only about 14 percent of students/residents will have a combined student debt under \$100,000 when they finish their studies.

**Figure 7.1**  
**Percentage of Dental Students'/Residents' Estimated Student Debt**  
**(Undergraduate and Dental School), Delaware, 2022**

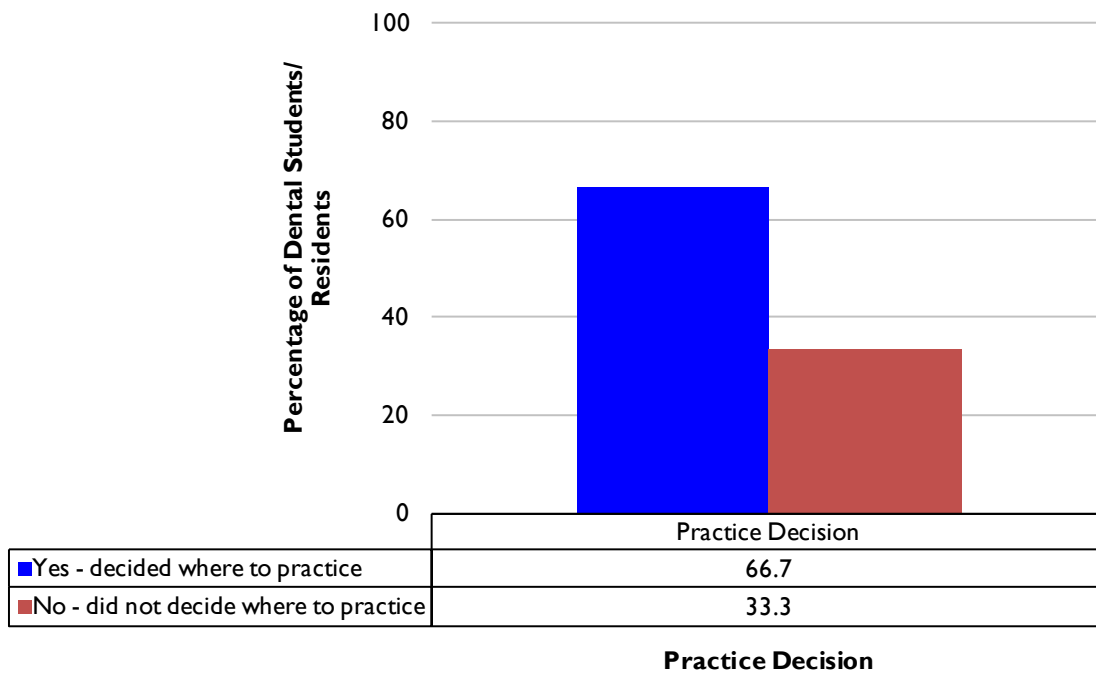


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The decision where to locate after graduation is an important one. About 67 percent of responding students/residents have already made up their mind about where they will

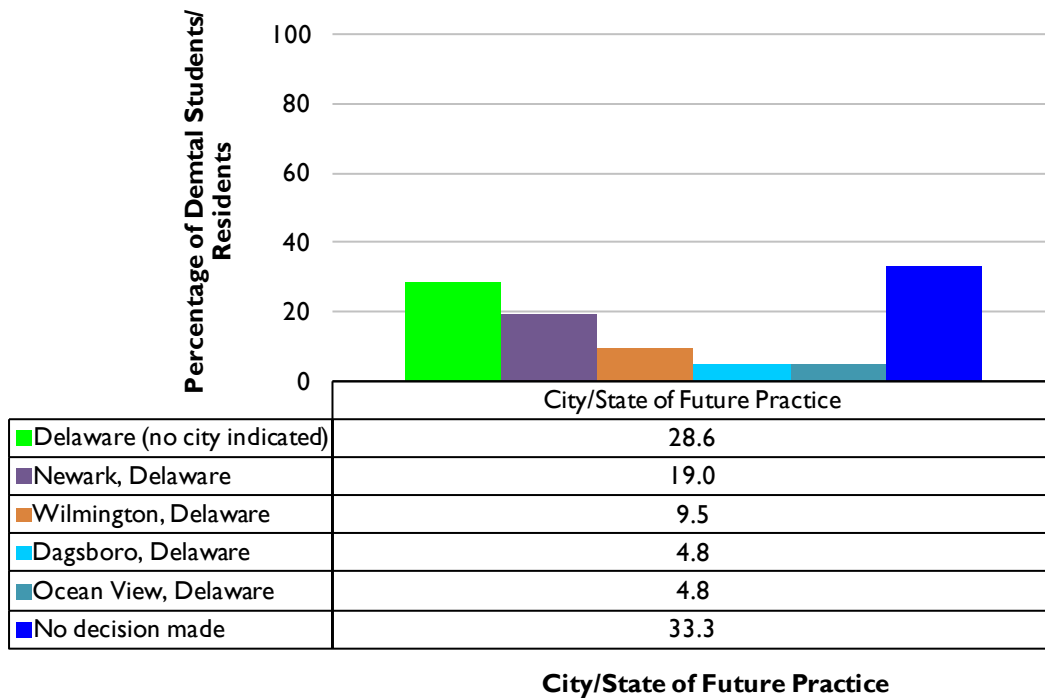
practice once they complete their studies (Figure 7.2). This leaves a sizable proportion that might be open to discussions about future location – possibly a way to attract new dentists to underserved areas. About 29 percent replied that they plan to practice in Delaware without naming a municipality. About 20 percent plan to practice in and around Newark, 9 percent plan to practice in Wilmington; 10 percent plan to practice in Southern Delaware; and 62 percent are undecided – an opportunity to present areas with higher need (Figure 7.3).

**Figure 7.2**  
**Percentage of Dental Students/Residents by Decision on where they will Practice, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

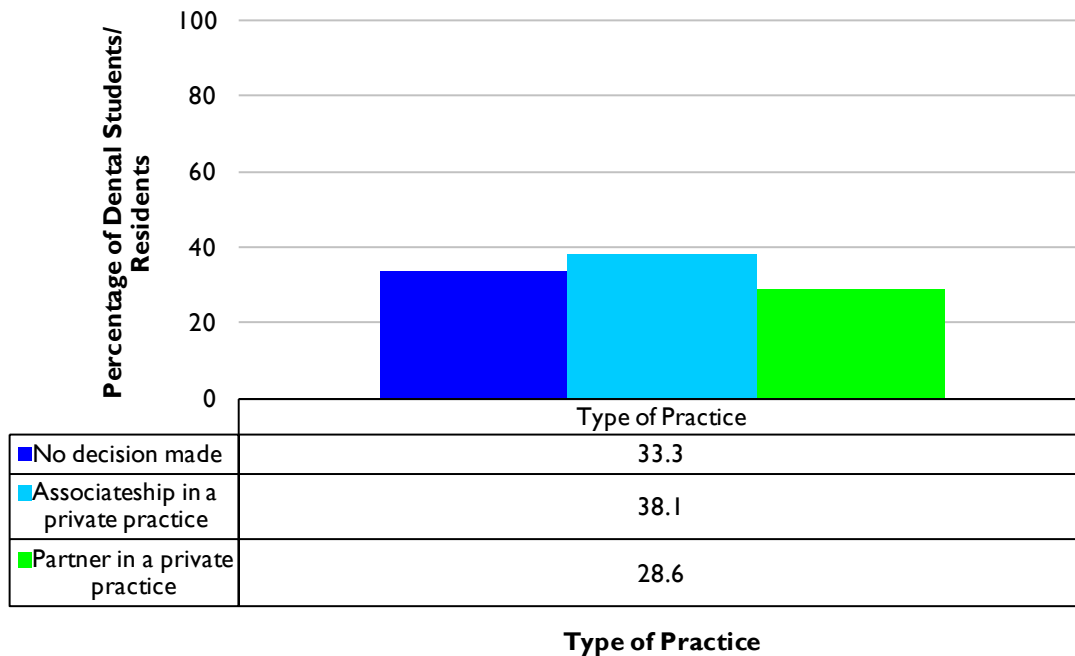
**Figure 7.3**  
**Percentage of Dental Students/Residents by Location of Where They Intend to Practice, Delaware 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

The choice of practice type is an important factor that determines dentists’ access to incentive programs that are designed to attract new providers to underserved areas. Some support programs for dentists are limited to non-private providers, particularly Federally Qualified Health Centers (FQHC), which are located primarily in underserved areas. About 67 percent of dental students/residents indicate that they intend to practice in private settings (associateship or partner in a private practice). This leaves about 33 percent of Delaware’s dental students/residents who could potentially consider practicing in an FQHC.

**Figure 7.4**  
**Percentage of Dental Students/Residents by Type of Practice**  
**They Intend to Go Into, Delaware. 2022**

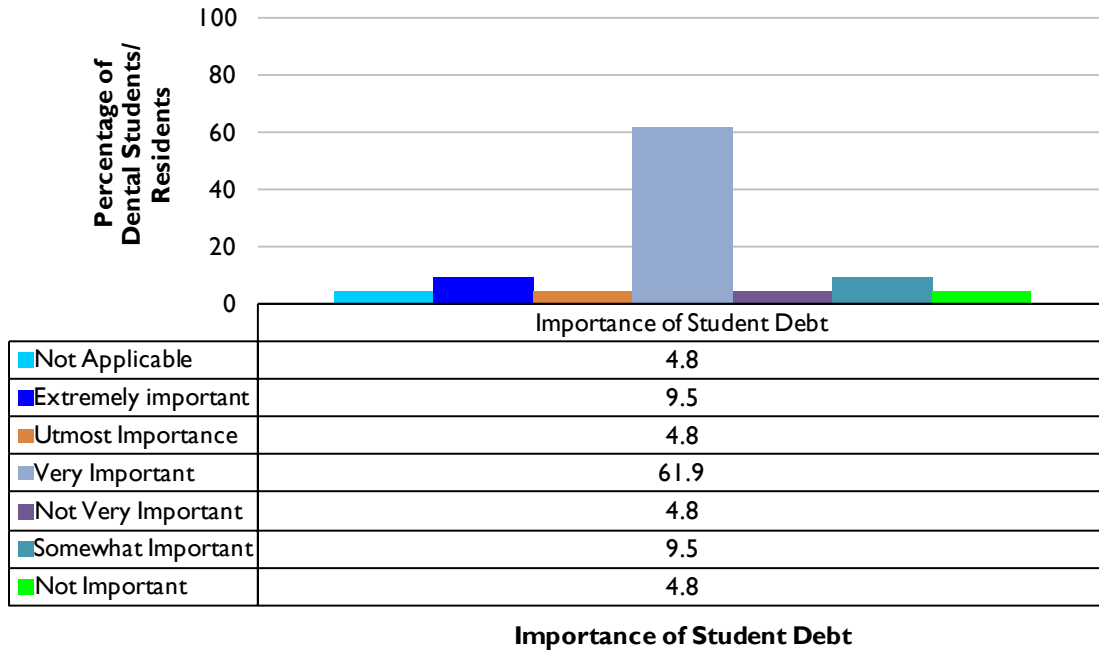


Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Support programs intended to attract dentists to underserved areas might be a way to attract students to serve in those areas. Respondents were asked to indicate the importance of student debt and the importance of loan repayment programs to their decision on where practice. Seventy-six percent of Delaware’s dental students/residents indicated that student debt plays a role (extremely important, utmost important, very important) in where they plan to practice in the future (Figure 7.5). Only about 5 percent of respondents indicated that student debt is not important when they think about where they decide to practice. Eighty-six percent of respondents said a loan repayment program will have a ‘very important’ or ‘important’ role in their decision on future practice location (Figure 7.6).

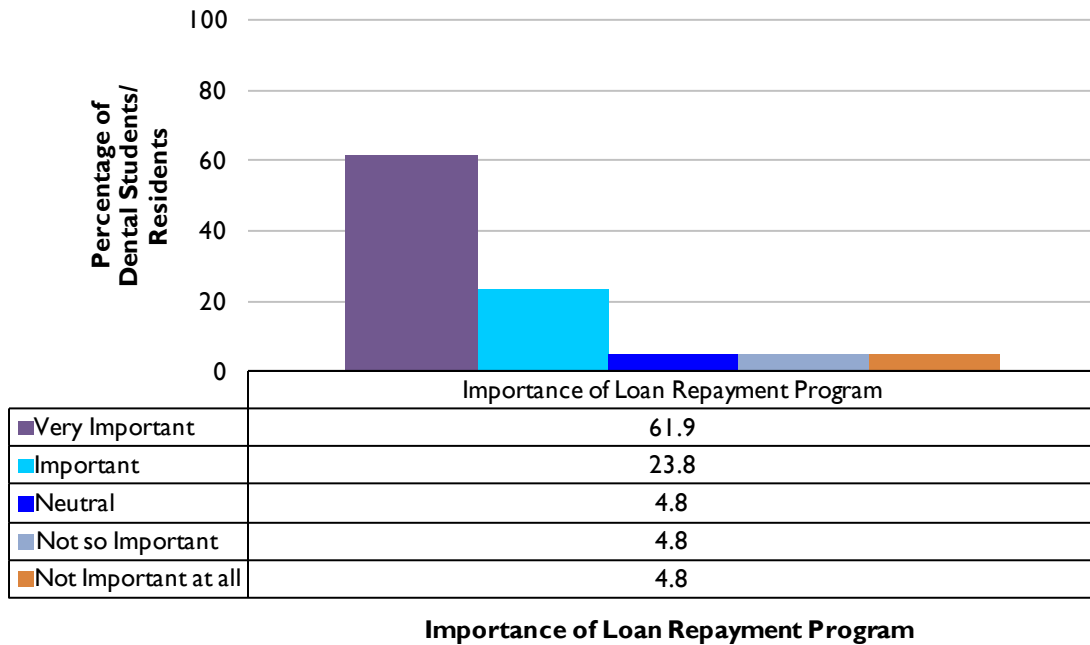


**Figure 7.5**  
**Percentage of Dental Students/Residents by Importance (Self Identified) of Student Debt in Deciding Where They Will Practice, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

**Figure 7.6**  
**Percentage of Dental Students/Residents by Importance of the Loan Repayment Program in Deciding Where They Will Practice, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

**Table 7.1**  
**Percentage of Dental Students/Residents by Ranked Factors of Importance in Deciding Where They Will Practice, Delaware, 2022**

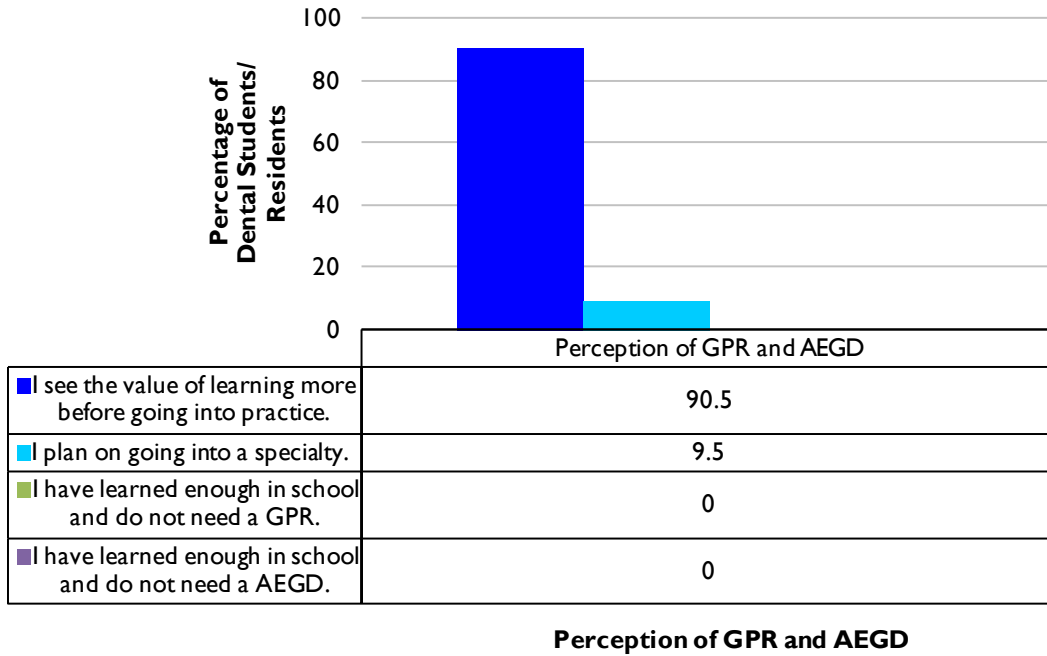
	Most Important	Important	Somewhat Important	Neutral	Somewhat Unimportant	Unimportant	Least Important
Money/debt burden	61.9	14.3	19.0	0.0	4.8	0.0	0.0
Being Close to Family	28.6	47.6	9.5	9.5	4.8	0.0	0.0
Ease to Obtain Initial License	9.5	9.5	9.5	28.6	14.3	9.5	19.0
Type/Care Profile	9.5	52.4	19.0	9.5	4.8	0.0	4.8
Community/Perceived Quality of Life	19.0	42.9	38.1	0.0	0.0	0.0	0.0
School System	9.5	14.3	28.6	14.3	4.8	19.0	9.5

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

In addition to student debt and the loan repayment program, respondents evaluated additional factors that might impact their choice of location after completing dental school, including: being close to family; ease of obtaining license; type of care/care profile; and perception of quality of life and the school system (Table 7.1). Sixty-two percent of respondents indicated that money/debt burden plays the most important role in their location decision. Being close to family is most important to 29 percent of respondents and important to 48 percent of survey participants; and ease of obtaining a license is least important to 19 percent of respondents (highest proportion for all factors). Type of care profile is an important factor to 52 percent of students/residents. Community/quality of life is most important to 19 percent and important to 43 percent of students/residents. The quality of a school system is 'Somewhat Unimportant, Unimportant, or Least Important' to 33 percent of the respondents. Fourteen percent consider the school system a neutral factor and about 53 percent consider school an important factor in their decision on where to practice in the future.

Students/residents were next asked a set of questions regarding licensing in general and licensing in Delaware. Students were asked to indicate their own perception of General Practice Residency (GPR) and Advanced Education (AEGD). About 90 percent of students/residents indicated that they see the value of learning more before going into practice (Figure 7.7). About 10 percent indicated that they will be going into a specialty. None of the respondents indicated that they have learned enough and do not need either a GPR or an AEGD.

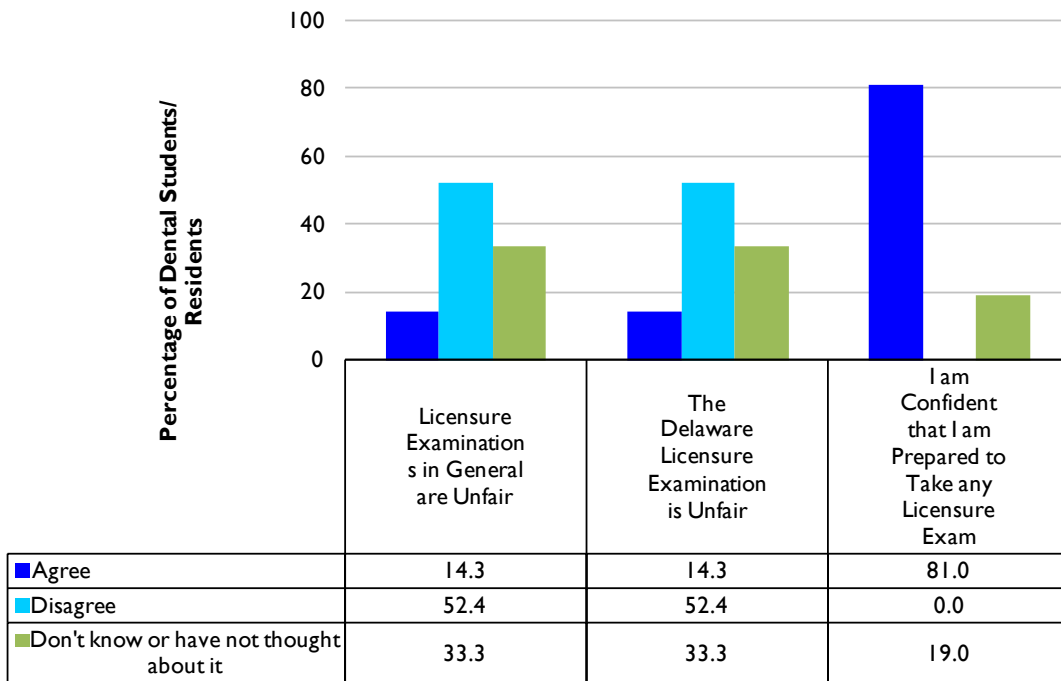
**Figure 7.7**  
**Percentage of Dental Students/Residents by Own Perception of General Practice Residency (GPR) and Advanced Education (AEGD), Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Dental licensure examinations was another subject for the students (Figure 7.8). About 14 percent of respondents agreed with the statements: “The Licensure Examinations in General are Unfair” and “The Delaware Licensure Examination is Unfair.” However, 52 percent of respondents disagreed with the statement that the licensure examinations mentioned above are unfair. About a third of the students/residents have not thought about the fairness of licensure examinations. About 81 percent of students/residents agreed with the statement that “I am Confident that I am Prepared to Take any Licensure Exam.”

**Figure 7.8**  
**Percentage of Dental Students/Residents by Agreement or Disagreement with Statements Relating to Dental Licensure Examinations, Delaware, 2022**

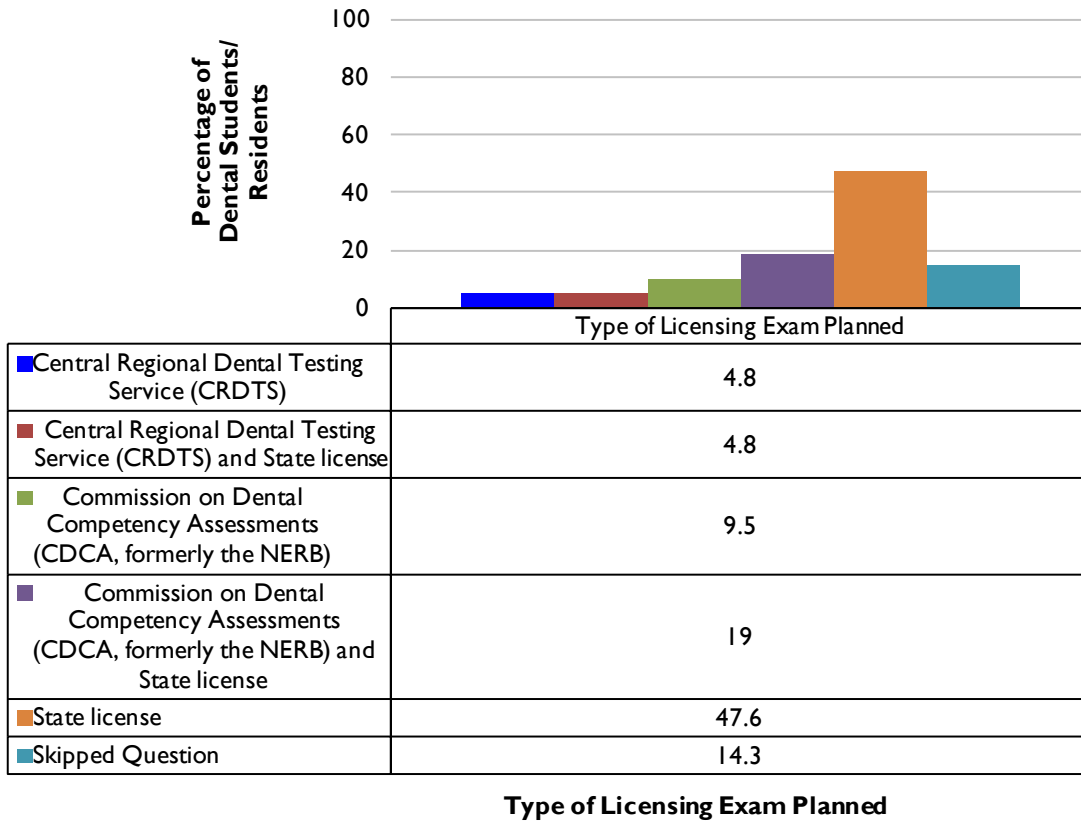


**Perception of Licensure Examinations**

Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

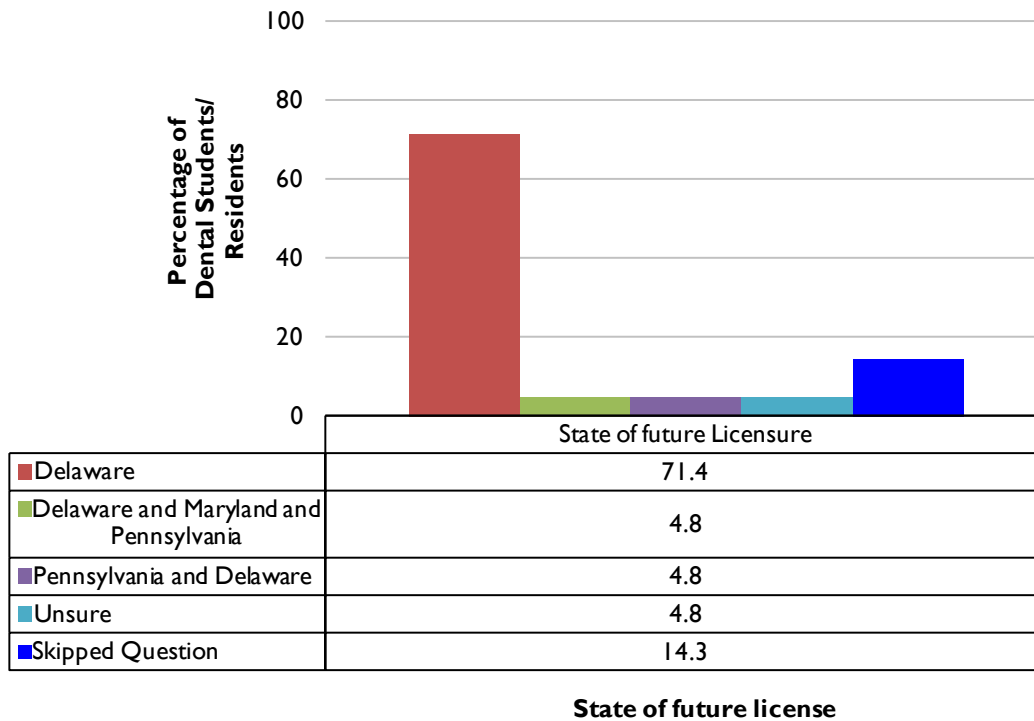
Students/residents were asked to indicate the type of clinical licensing they plan to obtain within one to two years of graduation (Figure 7.9). They were also asked to list the state or combination of states where they plan to get licensed (Figure 7.10). The most common clinical licensing that students plan to obtain is the State license (48 percent). About 19 percent plan to pursue a Commission on Dental Competency Assessment (CDCA). In terms of state licensing, 72 percent of students/residents plan to obtain a license in Delaware and an additional 8 percent plan to obtain dual licenses in Delaware and Pennsylvania.

**Figure 7.9**  
**Percentage of Dental Students/Residents by the Type of Clinical Licensing They Plan to Obtain within 1-2 Years of Graduation, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

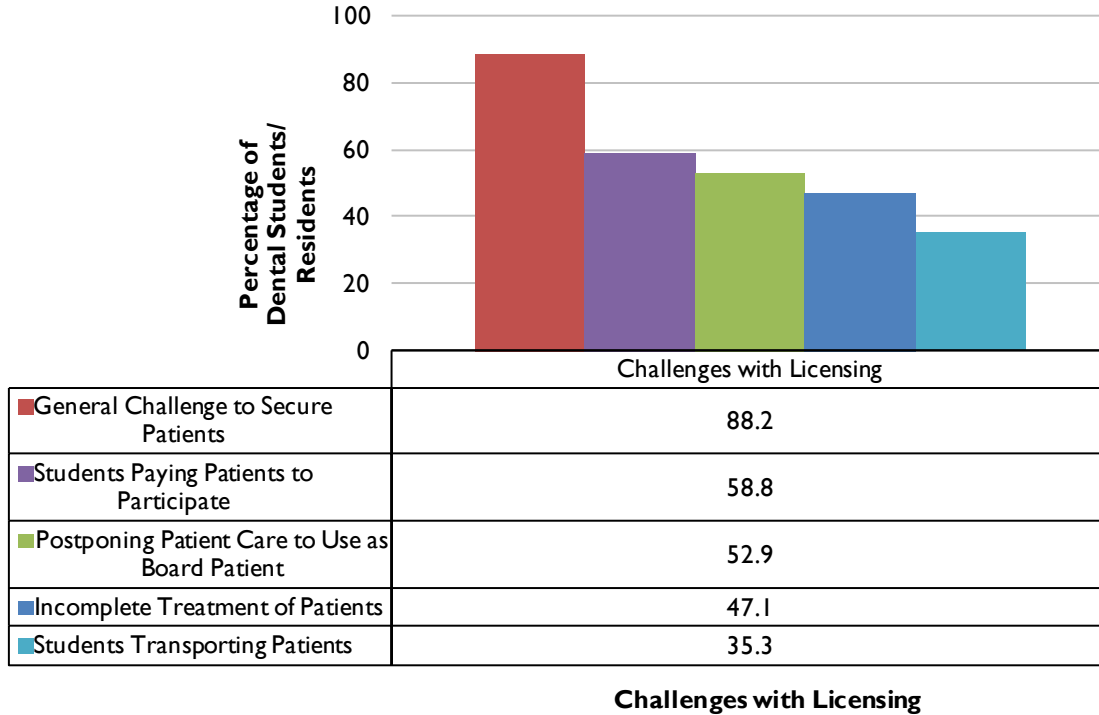
**Figure 7.10**  
**Percentage of Dental Students/Residents by the State License They Plan to Obtain, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022

Students/residents were next asked to evaluate potential concerns/challenges when thinking about the Delaware Licensing Exam (Figure 7.11). An overwhelming majority of respondents (88 percent) indicated potential concerns with securing patients for the exam. About 59 percent had concerns with paying patients to participate in the exam. About 53 percent were concerned with potentially postponing care so patients can participate as exam board patients. Almost 50 percent saw a potential for an incomplete treatment of patients during board licensing examinations, and 35 percent perceived a challenge with arranging transportation for patients.

**Figure 7.11**  
**Percentage of Dental Students/Residents by Concerns Identified When Thinking about the Delaware Licensing Exam, Delaware, 2022**



Source: Delaware Department of Health and Social Services, Division of Public Health, Delaware Dentist Survey 2022



**Appendix A**

**Dentists Survey Questionnaire**

DENTIST – 2021v8

Page 1



## DELAWARE DENTIST CAPACITY STUDY 2022

Commissioned by Delaware Health and Social Services

(MYID)

<p><b>INSTRUCTIONS</b></p> <ul style="list-style-type: none"> <li>Mail your completed form in the attached prepaid envelope or mail it to:                      University of Delaware                      Dentist Capacity Study 2022                      298D Graham Hall                      Newark, DE 19716</li> <li>Use either a pen or pencil when completing the questionnaire.</li> <li>Follow all "SKIP" instructions after answering a question. If no instructions are provided, continue to the next question.</li> <li>If you have any questions, contact the University of Delaware Dentist Capacity Study by emailing: <a href="mailto:tibi@udel.edu">tibi@udel.edu</a></li> </ul>	
<p><b>PURPOSE</b> – Results from the survey will be used to help state and local governments along with employers and educational institutions to plan for an adequate supply of health professionals in the state.</p>	<p><b>SCOPE</b> – All dentists licensed to practice in the State of Delaware. <b>Even if you do not practice in Delaware please complete the questionnaire.</b></p> <p><b>PARTICIPATION</b> – Your participation is voluntary. However, your responses are important to ensure adequate health care for Delaware's residents.</p>
<p>If you would like to see a copy of the report based on the survey conducted in 2016, point your browser to:  <a href="https://dhss.delaware.gov/dhss/dph/hs/mifiles/dentistsinde2016.pdf">https://dhss.delaware.gov/dhss/dph/hs/mifiles/dentistsinde2016.pdf</a></p>	
<p><b>1. Are you currently active in clinical dentistry in Delaware? (i.e.: seeing patients and/or doing things necessary for the care of patients):</b></p> <p>1 <input type="checkbox"/> Yes, in training</p> <p>2 <input type="checkbox"/> Yes, working full time</p> <p>3 <input type="checkbox"/> Yes, working part time</p> <p>4 <input type="checkbox"/> No, retired (GO TO QUESTION 37)</p> <p>5 <input type="checkbox"/> No, inactive (GO TO QUESTION 37)</p> <p>6 <input type="checkbox"/> No, other (specify): _____ (GO TO QUESTION 37)</p> <p>7 <input type="checkbox"/> Not practicing in Delaware (GO TO QUESTION 37)</p> <hr/> <p><b>IF RETIRED, INACTIVE, OTHER, OR NOT PRACTICING IN DELAWARE, PLEASE SKIP TO PAGE 5, QUESTION 37</b></p> <p><b>2. On average, how many hours per week do you spend on each of the following activities:</b></p> <p>____ Hours - Direct patient care or services and related paperwork</p> <p>____ Hours - Administration and related paperwork</p> <p>____ Hours - Teaching medical courses</p> <p>____ Hours - Research</p> <p>____ Hours - Other (specify): _____</p>	<p><b>3. What is the setting of your primary employment (check all that apply):</b></p> <p>1 <input type="checkbox"/> <b>Clinical Care Settings:</b></p> <p>1 <input type="checkbox"/> Practitioner's Office (solo, partner of group practice)</p> <p>2 <input type="checkbox"/> Hospital (except federal)</p> <p>3 <input type="checkbox"/> Nursing Home</p> <p>4 <input type="checkbox"/> Freestanding Clinic (administratively distinct from a hospital, nursing home, etc.)</p> <p>5 <input type="checkbox"/> Federally Qualified Health Center</p> <p>6 <input type="checkbox"/> Treatment Facility for the Handicapped or Disabled</p> <p>7 <input type="checkbox"/> Public Health Dental Clinic</p> <p>8 <input type="checkbox"/> Other (specify): _____</p> <p>2 <input type="checkbox"/> <b>Federal Health Facility:</b></p> <p>1 <input type="checkbox"/> Veterans' Administration (VA hospital)</p> <p>2 <input type="checkbox"/> Other (specify): _____</p> <p>3 <input type="checkbox"/> <b>School:</b></p> <p>1 <input type="checkbox"/> School of Dentistry</p> <p>2 <input type="checkbox"/> Other University or College</p> <p>3 <input type="checkbox"/> Other (specify): _____</p> <p>4 <input type="checkbox"/> <b>Miscellaneous Setting:</b></p> <p>1 <input type="checkbox"/> Dental Research Institution or Establishment</p> <p>2 <input type="checkbox"/> Professional Association (e.g. ADA)</p> <p>3 <input type="checkbox"/> Manufacturing or Industrial Establishment</p> <p>4 <input type="checkbox"/> Other (specify): _____</p>

CONTINUE ON PAGE 2

**4. What is the form of your primary employment (check all that apply):**

1  **Self-Employed:**

1  Solo Practice

2  Partner of Group Practice

3  Professional Corporation

4  Other (specify): \_\_\_\_\_

2  **Salaried, Employed by:**

1  Commissioned Associate

2  Partnership of Group Practitioners

3  Other Non-Government Employer (hospital, school, etc.)

4  Federal Government

5  Federally Qualified Health Center

6  State Government

7  Other (specify): \_\_\_\_\_

---

**5. What are the practice name, facility name, address and zip code for each of the locations in Delaware where you practice?**

1  **Primary Location (most time delivering care)**

Practice Name (example: XYZ Dental)  
 \_\_\_\_\_  
 Facility Name (People's Plaza)  
 \_\_\_\_\_  
 Street Address  
 \_\_\_\_\_  
 City State ZIP code

2  **Secondary Location**

Practice Name (example: XYZ Dental)  
 \_\_\_\_\_  
 Facility Name (People's Plaza)  
 \_\_\_\_\_  
 Street Address  
 \_\_\_\_\_  
 City State ZIP code

3  **Tertiary Location**

Practice Name (example: XYZ Dental)  
 \_\_\_\_\_  
 Facility Name (People's Plaza)  
 \_\_\_\_\_  
 Street Address  
 \_\_\_\_\_  
 City State ZIP code

---

**6. What percentage of your working hours in Delaware do you spend at each of the locations listed above?**

1 \_\_\_\_\_ Percent – Primary Location

2 \_\_\_\_\_ Percent – Secondary Location

3 \_\_\_\_\_ Percent – Tertiary Location

\_\_\_\_ 100 Percent – Total

---

**QUESTIONS BELOW PERTAIN TO YOUR PRIMARY LOCATION IN DELAWARE ONLY**

**7. How long have you been practicing at this primary location?**

\_\_\_\_\_ Years

---

**8. What type of site is at the primary location?**

1  Private Office

2  Clinic

3  Hospital

4  Other (specify): \_\_\_\_\_

---

**9. Using the ADA self-designated practice codes found on page 5, please identify your specialty in the space provided below. (include all specialties that apply to you)**

**Specialty Code**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

---

**10. How many dentists (including yourself) currently practice at this site (in case of shared space count only those that are in your practice)**

\_\_\_\_\_ Number

---

**11. About how many total patient encounters do you personally have per week?**

\_\_\_\_\_ Total Number of patients per week

**How many of these patient encounters per week are with patients receiving treatment, how many with patients presenting for post-treatment evaluation and how many are hygiene patients?**

\_\_\_\_\_ Number of patients for treatment

\_\_\_\_\_ Number for post treatment evaluation

\_\_\_\_\_ Number of hygiene patients

---

**12. Do you see pediatric patients at this site?**

1  Yes

2  No

**If YES, beginning at what age do you see patients?**

\_\_\_\_\_ Age

---

**13. Do you offer Saturday and Evening hours?**

Saturday 1  Yes  
2  No

Evening 1  Yes  
2  No

CONTINUE ON PAGE 3

**14. When a patient calls your office to request a routine (non-emergency) appointment, what is the usual elapsed time between the request and the resulting appointment for new and established patients (days)?**

New patients  Days  Not Applicable

Existing Patients  Days  Not Applicable

---

**15. When a patient calls your office to request an emergency appointment, what is the usual elapsed time between the request and the resulting appointment for new and established patients (days)?**

New patients  Days  Not Applicable

Existing Patients  Days  Not Applicable

---

**16. Are you currently accepting new patients?**

Yes  
 No

---

**17. If you are NOT accepting new patients or at times are unable to make emergency appointments, do you provide any type of referral?**

Yes  
 No

**If YES, to what source(s) do you refer patients? (check all that apply)**

Private Practice Dentist  
 Hospital Emergency Room  
 Other (specify):

---

**18. Since the COVID-19 outbreak, have you done or experienced any of the following as a result of COVID-19? (check all that apply)**

Closed my practice  
 Reduced staff  
 Increased staff  
 Experienced a reduction in income  
 Moved to a new employment situation or practice  
 Moved from direct patient to a non-patient care  
 Switched to a primarily telemedicine position  
 Moved from a permanent practice to locum tenens  
 Limited visits to reduce exposure  
 Experienced a lack of supplies  
 Clinicians in practice in Self-Quarantine  
 Nursing staff in practice in Self-Quarantine  
 Front office staff in Self-Quarantine  
 Experienced lack of space for sick

---

**19. Do you participate in dental insurance plans?**

Yes  
 No

**If YES, indicate in which type of plans you participate (check all that apply)**

Capitation  
 Reduced fee for service  
 Medicaid  
 Traditional insurance with balance billing  
 Other (specify):

---

**20. Do you use Certified Dental Technology (CDT) codes when submitting bills and other related paperwork to insurance companies?**

Yes  
 No  
 Not Applicable

---

**21. Does this site employ dental hygienists?**

Yes  
 No

**If YES, please indicate how many hygienists are employed and how many patients in total do all the hygienists see per week:**

Number of hygienists

Total number of patients seen by all hygienists per week

---

**22. Does this site employ dental assistants?**

Yes  
 No

**If YES, indicate the number of dental assistants that are part time (less than 30 hours per week) and full time (30 hours or more per week)**

Number of part time (less than 30 hrs per week) dental assistants

Number of full time (30 hrs or more per week) dental assistants

---

**23. Is this dental office fully staffed (by Hygienists, Dental Assistants, Office Staff)?**

Yes  
 No

**If NO, what positions need to be filled?**

Hygienist  
 Dental Assistant  
 Office Staff

**If NOT fully staffed, how long have you actively been trying to fill these positions?**

less than 2 months  
 2-4 months  
 more than 4 months, less than 6 months  
 more than 6 months

---

**24. Is this dental office fully staffed (by Dentists)?**

Yes  
 No

**If NO, what factors keep you from hiring a dentist?**

Unrealistic expectations of dentists  
 License examination  
 Other

**If NOT fully staffed, how long have you actively been trying to fill these positions?**

less than 2 months  
 2-4 months  
 more than 4 months, less than 6 months  
 more than 6 months

CONTINUE ON PAGE 4

**25. When was the last time you hired a new employee?**

1  Within the past 6 months  
 2  more than 6 months but fewer than 12 months ago  
 3  more than 12 months but fewer than 24 months ago  
 4  more than 24 months ago

---

**26. When you hired your last employee, how long did it take you to fill the position?**

1  less than 2 months  
 2  2-4 months  
 3  more than 4 months, less than 6 months  
 4  more than 6 months

---

**27. In the past, which position has been the most difficult to fill?**

1  Hygienist  
 2  Dental Assistant  
 3  Office Staff  
 4  Dentists

---

**28. Do you perceive a shortage in qualified applicants for dental staff positions (hygienists, assistants)?**

1  Yes  
 2  No

---

**29. How many and what type of "open" chair hours per week did you have last week?**

Open chair hours due to cancelations:  Open chair hours per week 1  Not Applicable

Open chair hours due to general lack of demand for dental services:  Open chair hours per week 1  Not Applicable

Open chair hours due to other reasons:  Open chair hours per week 1  Not Applicable

---

**30. Thinking about your own experience over the last 12 months, what limited (if anything) the number of patients you were able to see?**

1  Limited staffing  
 2  Too few patients seeking care  
 3  My personal desire to limit hours  
 4  Inability to find another dentist to work with  
 5  Did not experience limited ability to see patients

---

**31. Are there people at this site who have the ability to communicate with patients in a language other than English?**

1  Yes  
 2  No

If YES, which one (check all that apply)?

1  Spanish 4  Asian  
 2  French 5  Sign Language  
 3  Arabic 6  Other (specify):

---

**32. What percentage of your practice's gross fees are unreimbursed (includes uncollectables, not charity or discounts)? (choose one number)**

1  0% 5  20% 9  40%  
 2  5% 6  25% 10  45%  
 3  10% 7  30% 11  50%  
 4  15% 8  35%

---

**33. Do you provide charity care (no fee expected) inside your office?**

1  Yes  
 2  No

---

**34. Do you provide charity care (no fee expected) outside your office?**

1  Yes  
 2  No

If YES, Where (school, prison etc.)?  
  
 Location

If YES, How many times in the last 12 months did you provide charity care outside of your office?  
  
 Number of times

---

**35. Do you offer flexible or installment payment plans, which would allow patients to pay for services over a period of time?**

1  Yes  
 2  No

---

**36. Considering your work over the past 12 months, indicate your level of agreement or disagreement with the following statements:**

	Strongly Agree	Agree	Disagree	Strongly Disagree
It is hard adjusting my therapeutic strategies with ethnic minority clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am effective in my verbal communication with clients whose culture is different from mine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel confident that I can learn about my clients' cultural background	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am effective in my nonverbal communication with clients whose culture is different from mine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I have limited experience working with ethnic minority clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is difficult to practice skills related to cultural competence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not feel that I have the skills to provide services to ethnic minority clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would find it easy to work competently with ethnic minority clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

---

**37. If you currently do not practice in Delaware and you had a choice, would you practice in Delaware?**

1  Yes  
 2  No  
 3  Non Applicable (I currently practice in Delaware)

CONTINUE ON PAGE 5

<p><b>38. Do you expect to be active in clinical dentistry in Delaware 5 years from now?</b></p> <p>1 <input type="checkbox"/> Yes  2 <input type="checkbox"/> No  3 <input type="checkbox"/> Unsure</p> <hr/> <p><b>39. State (or country if applicable) of residence at time of high school graduation.</b></p> <p><input type="text"/></p> <p>State (country if applicable)</p> <hr/> <p><b>40. From which dental school did you graduate?</b></p> <p><input type="text"/> <input type="text"/></p> <p>Name of dental school Year (YYYY)</p> <p><input type="text"/></p> <p>State (country if applicable)</p> <hr/> <p><b>41. Did you complete a dental residency?</b></p> <p>1 <input type="checkbox"/> Yes  2 <input type="checkbox"/> No</p> <p><b>If YES, please indicate the states where you did your residency</b></p> <p><input type="text"/> <input type="text"/> <input type="text"/></p> <p>State 1 State 2 State 3</p> <hr/> <p><b>42. If you completed a dental residency, what type of a dental residency was it (check all that apply)?</b></p> <p>1 <input type="checkbox"/> General Practice Residency (GPR)  2 <input type="checkbox"/> Advanced Education in General Dentistry (AEGD)  3 <input type="checkbox"/> Specialized Dental Residency (specify): <input type="text"/>  4 <input type="checkbox"/> Military Service  5 <input type="checkbox"/> Other (specify): <input type="text"/></p> <hr/> <p><b>43. In which states are you currently licensed to practice dentistry?</b></p> <p><input type="text"/> <input type="text"/> <input type="text"/></p> <p>State 1 State 2 State 3</p>	<p><b>44. What is your race?</b></p> <p>1 <input type="checkbox"/> Caucasian or White  2 <input type="checkbox"/> African American or Black  3 <input type="checkbox"/> Native American or Alaskan  4 <input type="checkbox"/> Asian or Pacific Islander  5 <input type="checkbox"/> Multi-Racial  6 <input type="checkbox"/> Other (specify): <input type="text"/></p> <hr/> <p><b>45. Are you of Hispanic origin?</b></p> <p>1 <input type="checkbox"/> Yes  2 <input type="checkbox"/> No</p> <hr/> <p><b>46. What is your gender?</b></p> <p>1 <input type="checkbox"/> Male  2 <input type="checkbox"/> Female</p> <hr/> <p><b>47. What is your year of birth?</b></p> <p><input type="text"/></p> <p>Year (YYYY)</p> <hr/> <p><b>48. In your opinion, what do you think are the 3 main problems related to access to dental care in Delaware?</b></p> <p>1 <input type="text"/></p> <p>2 <input type="text"/></p> <p>3 <input type="text"/></p>
--	---

**Thank you for completing the survey.**

**Return the completed form to:**

University of Delaware  
Dentist Capacity Study 2022  
298 D Graham Hall  
Newark, DE 19716



**ADA Self-Designated Practice Codes**

(Listed alphabetically by specialty name)

<b>CBMX PROS</b>	-	prosthodontics/maxillofacial prosthetic
<b>DG</b>	-	general dentistry
<b>DPH</b>	-	dental public health
<b>ENDO</b>	-	endodontics
<b>GRP</b>	-	general practice residency
<b>MX PROS</b>	-	maxillofacial prosthetic
<b>OMP</b>	-	oral and maxillofacial pathology
<b>OMS</b>	-	oral and maxillofacial surgery
<b>ORTHO</b>	-	orthodontics and dentofacial orthopedics
<b>PED DENT</b>	-	pediatric dentistry
<b>PERIO</b>	-	periodontics
<b>PROS</b>	-	prosthodontics

## **Appendix B**

### **Dental Health Professional Shortage Area Designation Criteria (excerpt)**



**Dental HPSA Designation Criteria (relevant excerpts)**

(<http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/dentalhpsacriteria.html>)

**Part I -- Geographic Areas***A. Criteria.*

A geographic area will be designated as having a dental professional shortage if the following three criteria are met:

1. The area is a rational area for the delivery of dental services.
2. One of the following conditions prevails in the area:
  - (a) The area has a population to full-time-equivalent dentist ratio of at least 5,000:1, or
  - (b) The area has a population to full-time-equivalent dentist ratio of less than 5,000:1 but greater than 4,000:1 and has unusually high needs for dental services or insufficient capacity of existing dental providers.
3. Dental professionals in contiguous areas are overutilized, excessively distant, or inaccessible to the population of the area under consideration.

*B. Methodology.*

In determining whether an area meets the criteria established by paragraph A of this part, the following methodology will be used:

*1. Rational Area for the Delivery of Dental Services.*

- (a) The following areas will be considered rational areas for the delivery of dental health services:
  - (i) A county, or a group of several contiguous counties whose population centers are within 40 minutes travel time of each other.
  - (ii) A portion of a county (or an area made up of portions of more than one county) whose population, because of topography, market or transportation patterns, distinctive population characteristics, or other factors, has limited access to contiguous area resources, as measured generally by a travel time of greater than 40 minutes to such resources.
  - (iii) Established neighborhoods and communities within metropolitan areas which display a strong self-identity (as indicated by a homogenous socioeconomic or demographic structure and/or a traditional of interaction or intradependency), have limited interaction with contiguous areas, and which, in general, have a minimum population of 20,000.

(b) The following distances will be used as guidelines in determining distances corresponding to 40 minutes travel time:

- (i) Under normal conditions with primary roads available: 25 miles.
- (ii) In mountainous terrain or in areas with only secondary roads available: 20 miles.
- (iii) In flat terrain or in areas connected by interstate highways: 30 miles.

Within inner portions of metropolitan areas, information on the public transportation system will be used to determine the distance corresponding to 40 minutes travel time.

### *2. Population Count.*

The population count use will be the total permanent resident civilian population of the area, excluding inmates of institutions, with the following adjustments:

- (a) Seasonal residents, i.e., those who maintain a residence in the area but inhabit it for only 2 to 8 months per year, may be included but must be weighted in proportion to the fraction of the year they are present in the area.
- (b) Migratory workers and their families may be included in an area's population using the following formula: Effective migrant contribution to population = (fraction of year migrants are present in area) x (average daily number of migrants during portion of year that migrants are present).

### *3. Counting of Dental Practitioners.*

- (a) All non-Federal dentists providing patient care will be counted, except in those areas where it is shown that specialists (those dentists not in general practice or pedodontics) are serving a larger area and are not addressing the general dental care needs of the area under consideration.
- (b) Full-time equivalent (FTE) figures will be used to reflect productivity differences among dental practices based on the age of the dentists, the number of auxiliaries employed, and the number of hours worked per week. In general, the number of FTE dentists will be computed using weights obtained from the matrix in Table 1, which is based on the productivity of dentists at various ages, with different numbers of auxiliaries, as compared with the average productivity of all dentists. For the purposes of these determinations, an auxiliary is defined as any non-dentist staff employed by the dentist to assist in operation of the practice.

TABLE 1 - EQUIVALENCY WEIGHTS, BY AGE AND NUMBER OF AUXILIARIES

	<55	55-59	60-64	65+
No auxiliaries	0.8	0.7	0.6	0.5
One auxiliary	1.0	0.9	0.8	0.7
Two auxiliaries	1.2	1.0	1.0	0.8
Three auxiliaries	1.4	1.2	1.0	1.0
Four auxiliaries	1.5	1.5	1.3	1.2

If information on the number of auxiliaries employed by the dentist is not available, Table 2 will be used to compute the number of full-time equivalent dentists.

TABLE 2 - EQUIVALENCY WEIGHTS, BY AGE

	<55	55-59	60-64	65+
Equivalency Weights	1.2	0.9	0.8	0.6

The number of FTE dentists within a particular age group (or age/auxiliary group) will be obtained by multiplying the number of dentists within that group by its corresponding equivalency weight. The total supply of FTE dentists within an area is then computed as the sum of those dentists within each age (or age/auxiliary) group.

(c) The equivalency weights specified in tables 1 and 2 assume that dentists within a particular group are working full-time (40 hours per week). Where appropriate data are available, adjusted equivalency figures for dentists who are semi-retired, who operate a reduced practice due to infirmity or other limiting conditions, or who are available to the population of an area only on a part-time basis will be used to reflect the reduced availability of these dentists. In computing these equivalency figures, every 4 hours (or 1/2 day) spent in the dental practice will be counted as 0.1 FTE except that each dentist working more than 40 hours a week will be counted as 1.0. The count obtained for a particular age group of dentists will then be multiplied by the appropriate equivalency weight from table 1 or 2 to obtain a full-time equivalent figure for dentists within that particular age or age/auxiliary category.

4. *Determination of Unusually High Needs for Dental Services.*

An area will be considered as having unusually high needs for dental services if at least one of the following criteria is met:

- (a) More than 20% of the population (or of all households) has incomes below the poverty level.

- (b) The majority of the area's population does not have a fluoridated water supply.

*5. Determination of Insufficient Capacity of Existing Dental Care Providers.*

An area's existing dental care providers will be considered to have insufficient capacity if at least two of the following criteria are met:

- (a) More than 5,000 visits per year per FTE dentist serving the area.
- (b) Unusually long waits for appointments for routine dental services (i.e., more than 6 weeks).
- (c) A substantial proportion (2/3 or more) of the area's dentists do not accept new patients.

*6. Contiguous Area Considerations.*

Dental professional(s) in areas contiguous to an area being considered for designation will be considered excessively distant, overutilized or inaccessible to the population of the area under consideration if one of the following conditions prevails in each contiguous area:

- (a) Dental professional(s) in the contiguous area are more than 40 minutes travel time from the center of the area being considered for designation (measured in accordance with Paragraph B.1.(b) of this part).
- (b) Contiguous area population-to-(FTE) dentist ratios are in excess of 3,000:1, indicating that resources in contiguous areas cannot be expected to help alleviate the shortage situation in the area being considered for designation.
- (c) Dental professional(s) in the contiguous area are inaccessible to the population of the area under consideration because of specified access barriers, such as:
  - (i) Significant differences between the demographic (or socioeconomic) characteristics of the area under consideration and those of the contiguous area, indicating that the population of the area under consideration may be effectively isolated from nearby resources. Such isolation could be indicated, for example, by an unusually high proportion of non-English-speaking persons.
  - (ii) A lack of economic access to contiguous area resources, particularly where a very high proportion of the population of the area under consideration is poor (i.e., where more than 20 percent of the population or of the households have incomes below the poverty level) and Medicaid-covered or public dental services are not available in the contiguous area.

**Part II – Population Groups***A. Criteria.*

1. In general, specified population groups within particular geographic areas will be designated as having a shortage of dental care professional(s) if the following three criteria are met:
  - a. The area in which they reside is rational for the delivery of dental care services, as defined in paragraph B.1 of part I of this appendix.
  - b. Access barriers prevent the population group from use of the area's dental providers.
  - c. The ratio (R) of the number of persons in the population group to the number of dentists practicing in the area and serving the population group is at least 4,000:1.
2. Indians and Alaska Natives will be considered for designation as having shortages of dental professional(s) as follows:
  - (a) Groups of members of Indian tribes (as defined in section 4(d) of Pub. L. 94 - 437, the Indian Health Care Improvement Act of 1976) are automatically designated.
  - (b) Other groups of Indians or Alaska Natives (as defined in section 4(c) of Pub. L. 94 - 437) will be designated if the general criteria in paragraph 1 are met.

*RELEVANT EXCERPTS FROM 42 CODE OF FEDERAL REGULATIONS (CFR), CHAPTER 1, PART 5, Appendix B (October 1, 1993, pp. 34-48)  
Criteria for Designation of Areas Having Shortages of Dental Professionals [45 FR 76000, Nov. 17, 1980, as amended at 54 FR 8738, Mar. 2, 1989; 57 FR 2480, Jan. 22, 1992]*

## **Appendix C**

### **Dental Student and Resident Survey Questionnaire**

## DELAWARE DENTAL STUDENT AND RESIDENT STUDY 2021/22

\* Required



### DELAWARE DENTAL STUDENT AND RESIDENT STUDY 2021/22

Commissioned by Delaware Health and Social Services

**PURPOSE** – Results from the survey will be used to help state and local governments along with employers and educational institutions to plan for an adequate supply of health professionals in the state. The survey should take no more than 7 minutes to complete.

**SCOPE** – All dental students from Delaware and select dental residents are included in the data collection.

**PARTICIPATION** – Your participation is voluntary. However, your responses are important to ensure adequate health care for Delaware's residents. The survey is anonymous and no personally identifiable information is collected from respondents. Data will only be reported in aggregate form.

**PREVIOUS STUDY** - If you would like to see a copy of the report based on the survey of dentists conducted in 2016, point your browser to: <https://dhss.delaware.gov/dhss/dph/hsm/files/dentistsinde2016.pdf>

**CONTACT** - If you have any questions or comments about this study, we would be happy to talk with you. We can be reached at [tibi@udel.edu](mailto:tibi@udel.edu). If you have questions regarding your rights as a participant, you may contact the Chair, Human Subjects Review Board, University of Delaware at (302)831-2137.

1. Please estimate the total student debt (undergraduate plus dental school) you estimate to have at the time when you graduate from dental school: (\$ Estimated Student Debt) \*

2. 2. Have you decided on where you intend to practice? \*

Mark only one oval.

- Yes  
 No

3. 2.1 If YES to Question 2 above, what CITY and STATE do you expect to practice in?

\_\_\_\_\_

4. 3. Have you decided on what type of practice you intend to go into? \*

Mark only one oval.

- Yes  
 No

5. 3.1 If Yes to Question 3 above, select what type of practice you intend to go into.  
(check one)

Mark only one oval.

- Associateship in a private practice  
 Partner in a private practice  
 Open a de novo practice  
 Affiliate with a Dental Service Organization (DSO)  
 Other: \_\_\_\_\_

6. 4. How important to you personally, is student debt in deciding where you will practice? \*

\_\_\_\_\_



7. 5. How important to you personally is a student loan repayment program in helping \* you to decide where to practice? (check one):

Mark only one oval.

- Very Important
- Important
- Neutral
- Not so Important
- Not Important at all
- Skip Question

8. 6. Please rank the factors below as the as they relate to your future decision where \* to practice. (1-Most important, 7-Least Important):

Mark only one oval per row.

	(1) Most Important	(2)	(3)	(4)	(5)	(6)	7 (Least Important)
<b>Money/debt burden</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Being close to Family</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Ease to obtain Initial Licensure</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Type/Care profile</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Community / Perceived quality of life</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>School System</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. 7. Please indicate your own perception of general practice residency (GPR) and Advanced Education in General Dentistry (AEGD) (check all that apply): \*

Check all that apply.

- I see the value of learning more before going into practice.
- I have learned enough in school and do not need a GPR
- I have learned enough in school and do not need a AEGD
- I plan on going into a specialty
- Skip Question

10. 8. Please indicate your agreement or disagreement with the following statements \* as they relate to dental license examinations:

Mark only one oval per row.

	Agree	Disagree	Don't know or haven't thought about it
<b>Licensure examinations in general are unfair</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>The Delaware licensure examination is unfair</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>I am confident that I am prepared to take any licensure exam</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. 9. Which of the following clinical licensing exams do you plan to obtain within 1-2 \*  
years of graduation? (check all that apply)

*Check all that apply.*

- Central Regional Dental Testing Service (CRDTS)
- Commission on Dental Competency Assessments (CDCA, formerly the NERB)
- Council of Interstate Testing Agencies (CITA)
- Southern Regional Testing Agency (SRTA)
- Western Regional Examining Board (WREB)
- State license
- Skip Question

12. 9.1 If you indicated in Question 9 above that you plan on obtaining a STATE  
LICENSE, please list ALL the state/s where you plan on obtaining a license:

\_\_\_\_\_

13. 10. When thinking about taking (or not taking) the Delaware licensing exam, \*  
which of the following concerns do you personally have? (check all that apply)

*Check all that apply.*

- General challenge to secure patients
- Incomplete treatment of patient
- Postponing patient care to use as a board patient
- Students paying patients to participate
- Students transporting patients
- Skip Question
- Other: \_\_\_\_\_

14. 11. Do you expect to be active in clinical dentistry in Delaware 5 years from now? \*

*Mark only one oval.*

- Yes
- No

15. 12. State (or country if applicable) of residence at time of high school graduation. \*

\_\_\_\_\_

16. 13. Where did you earn your undergraduate degree? (Name of school) \*

\_\_\_\_\_

17. 13.1 When did you earn your undergraduate degree (Year of graduation) \*

\_\_\_\_\_

18. 13.2 Where did you earn your undergraduate degree? (State if in the US or Country if outside of US) \*

\_\_\_\_\_

19. 14. Which dental school are you currently attending OR Which dental school did you graduate from? (Name School) \*

\_\_\_\_\_

20. 14.1 In what year will you graduate from the above Dental School OR In which year did you graduate from the above Dental School? (Future Year of Graduation OR Year of Graduation) \*

\_\_\_\_\_

21. 14.2 In what state is the above Dental School ? (State if in the US or Country if outside of US) \*

\_\_\_\_\_

22. 15. What is your race? \*

*Mark only one oval.*

- Caucasian or White
- African American or Black
- Native American or Alaskan
- Asian or Pacific Islander
- Multi-Racial
- Other
- Skip Question

23. 16. Are you of Hispanic origin? \*

Mark only one oval.

- Yes
- No
- Skip Question

24. 17. What is your gender? \*

Mark only one oval.

- Male
- Female
- Skip Question

25. 18. What is your year of birth? \*

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26. 19. In your opinion, what do you think are the 3 main opportunities related to access to dental care in Delaware? \*

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Thank you for completing the survey. If you have any questions, please send an e-mail message to [tibi@udel.edu](mailto:tibi@udel.edu).

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