

Educational Pathways of Delaware Dentists:

An Investigative Review of Dental Educational Records Dating Over 85 Years

Matt McNeill, BS;¹ Timothy E. Gibbs, MPH;² & Katherine Smith, MD, MPH³

1. Research Associate, Delaware Health Force, Delaware Academy of Medicine & Public Health
2. Director and Primary Investigator, Delaware Health Force, Delaware Academy of Medicine & Public Health
3. Executive Director, Delaware Academy of Medicine & Public Health

Abstract

Objective: This report summarizes the findings from a comprehensive study conducted by The Delaware Academy of Medicine & Public Health's Delaware Health Force program on the educational pathways of Delaware dentists from 1939-2024. **Methods:** Delaware undergraduate education, dental school attendance, residency hospital training, and stage transition records were stratified by gender and license activity status for practicing Delaware dentists, and trends based on Delaware proximity and regional movements were identified. Shifts in the Delaware dental pipeline were also identified. **Results:** The most common educational pathway for Delaware dentists was to complete their undergraduate education in Delaware, move to Pennsylvania for dental school, and then return to Delaware for residency and training. Most Delaware dentists remained in the Northeast for their entire training pathway. **Conclusion:** There is subtle regional diversity in the pathways of Delaware dentists, with an overwhelming leaning towards educational training at all levels in the Northeast and Mid-Atlantic regions of the country.

Introduction

Dentistry is a profession requiring extensive education and training. Understanding the educational pathways of practicing dentists provides insights into workforce development, regional educational influences, and potential areas for policy improvement. The Delaware Academy of Medicine & Public Health's Delaware Health Force program conducted a study examining the educational backgrounds of all 1,259 dentists that have held a license in Delaware, since the introduction of electronic records. This report reviews their undergraduate education, dental school attendance, residency training, and transitions within their educational pathways.

Methods

Study Population

The historical records of all dentists in Delaware were studied to determine the location of their undergraduate institution, dental school attended, and residency training location. Dentists were stratified by license status (active or inactive) and gender (male or female). Active licenses (N=1,259) include those dentists with an active Delaware dental license, a dentist academic license, or dental residency license. Inactive licenses include all other types of license statuses.

Education Pathway

All known information about undergraduate institutions, dental schools, and residency locations were compiled for the study population. Undergraduate records were found for 646 dentists (51.31%), dental school records for 1,037 dentists (82.37%), and residency records for 675 dentists (53.61%) out of the total 1,259 dentists studied.

Locations of all institutions were stratified into US Census Regions (table 1) and proximity to Delaware, based on state borders:

- **Border States** (states sharing a border with Delaware): Maryland, New Jersey, Pennsylvania
- **States Bordering Border States:** District of Colombia, New York, Ohio, Virginia, West Virginia
- **Other States**
- **Other Countries**

Table 1. US Census-Defined Regions

Northeast	Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
South	Alabama, Arkansas, District of Colombia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
Midwest	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
West	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Based on these data, trends on the movement of dentists from undergraduate institution to dental school, dental school to residency location, and residency location to Delaware were identified.

The final goal of this study was to examine the most influential dental schools and residency training locations over time. The results were stratified by the top five dental schools and residency training locations, top five states for dental schools and residency training locations, and U.S. Census-defined regions for dental schools and residency training locations.

Results

Undergraduate Education

The most common undergraduate school for Delaware dentists to attend was the University of Delaware (table 2). Pennsylvania (n=157) was the most common state in which Delaware dentists attended undergraduate studies, followed by Delaware (n=123), Maryland (n=56), New York (n=46), and Virginia (n=30).

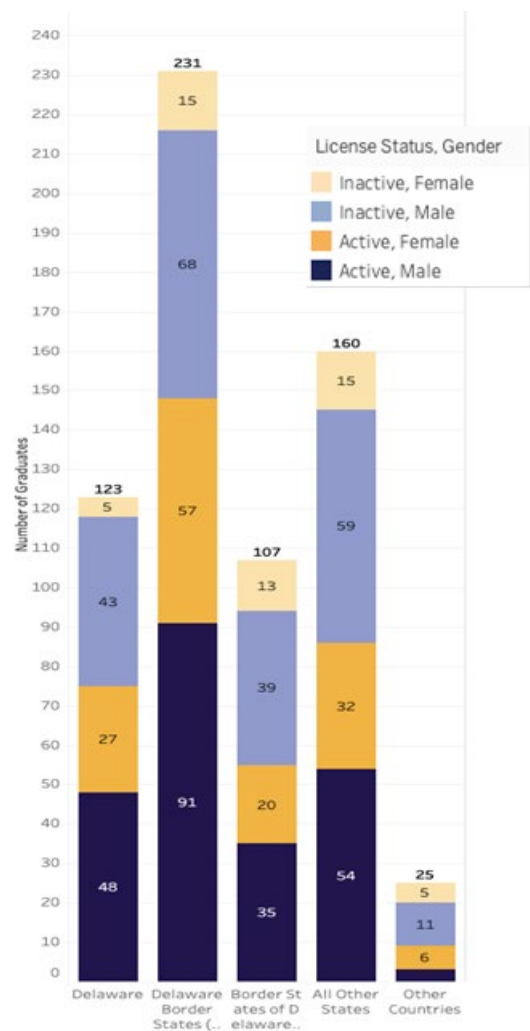
Table 2. Top 10 Undergraduate Universities for Delaware Dentists, by Gender & Current License Status (n=252)

		Active		Inactive	
	Total	Female	Male	Female	Male

University of Delaware	118	26	47	4	41
University of Maryland	31	12	9	2	8
Temple University	21	6	10	1	4
Pennsylvania State University	18	5	6	3	4
Villanova University	16	2	10	0	4
University of Pennsylvania	11	2	5	2	2
Rutgers University	11	2	4	1	2
University of Michigan	9	3	3	1	2
LaSalle University	9	0	3	0	6
Bucknell University	8	0	3	2	3

Delaware dentists tended to complete their undergraduate studies in the northeast (n=371), followed by the south (n=164). Of the 646 dentists whose undergraduate institution was known, 123 attended school in Delaware, 231 attended school in one of Delaware's bordering states, and 107 attended school in the states bordering Delaware's border states. One hundred sixty (160) dentists came to Delaware after completing undergraduate education in another state, and 25 came from other countries (figure 1).

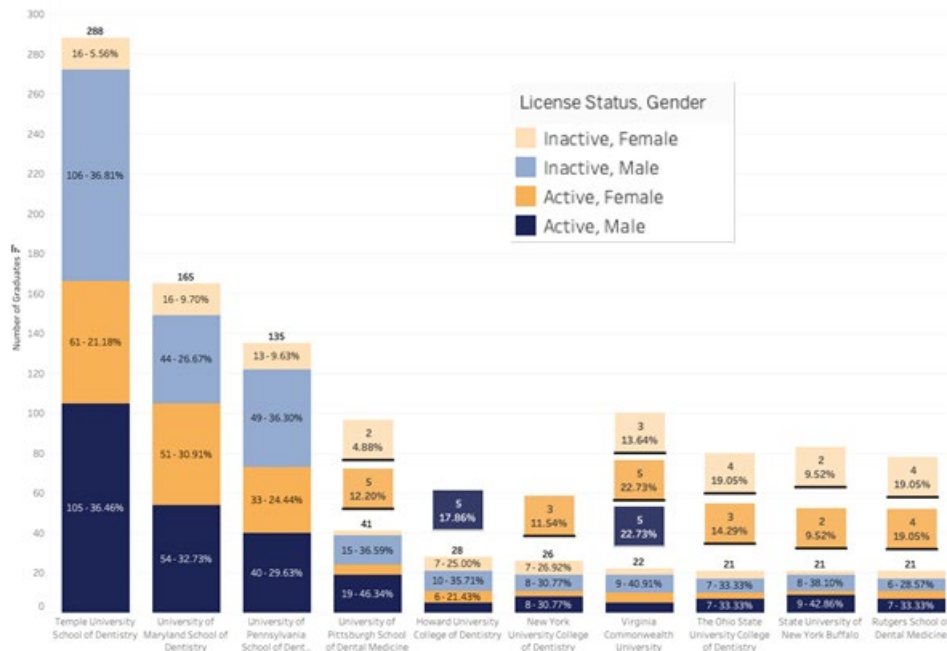
Figure 1. Undergraduate School States by Gender and License Status (n=646)



Dental School Attendance

Following undergraduate education, dental school attendance is a critical component of professional training. A majority of Delaware dentists attended Temple University for dental school (n=288), followed by the University of Maryland’s (n=165) and Pennsylvania’s Schools of Dentistry (n=135, see figure 2).

Figure 2. Top 10 Dental Schools of Delaware Dentists, by Gender and License Status (n=768)



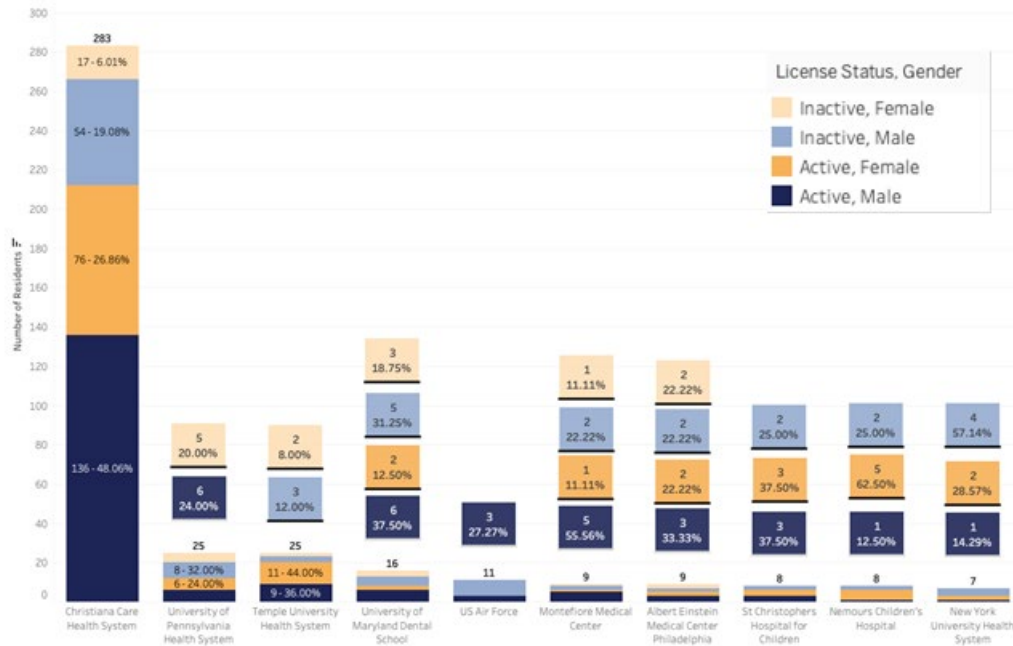
Of the 1,037 dentists with recorded dental schools, 665 attended dental school in one of Delaware's border states. The state with the most Delaware dentists attending dental school within its borders was Pennsylvania (n=466), followed by Maryland (n=165) and New York (n=66). A majority of dentists stayed in the northeast for dental school (n=613), although many also attended school in the south (n=305).

We also explored what the most common states to attend dental school were for individuals who graduated from an undergraduate school in Delaware. Of the 113 undergraduates from Delaware, 86.7% attended dental school in either Pennsylvania (n=76) or Maryland (n=22). Delaware universities graduating dental students included Delaware State University (4), University of Delaware (119), and Wesley College (1).

Residency Hospital Training

A majority of Delaware dentists completed their residency training at Christiana Care Health System (n=283, see figure 3). A smaller number completed their training in Pennsylvania, New York, and Maryland. Regionally, we again see a majority of Delaware dentists completing residency in the northeast, followed by the south.

Figure 3. Top 10 Residency Hospitals for Delaware Dentists, by Gender & License Status (n=401)

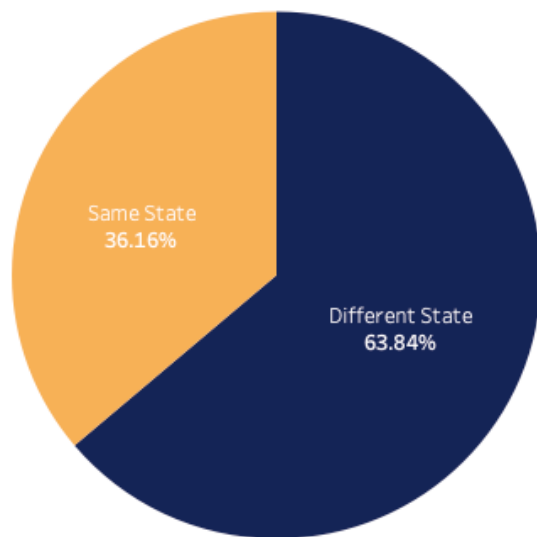


Transitions Within Educational Pathways

Retention during transitions between undergraduate institution, dental school, and dental residency training were also studied.

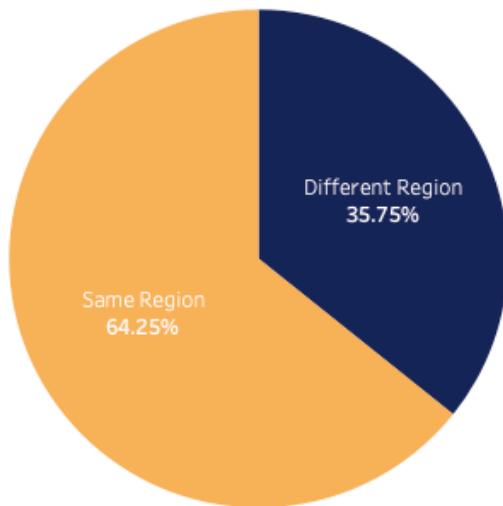
Because Delaware does not have a state dental school, all Delaware residents interested in attending dental school must leave the state to do so. Delaware dentists who began their undergraduate education in Pennsylvania tended to stay in Pennsylvania, but over 60% of Delaware dentists chose to attend dental school in a different state than the one in which they completed their undergraduate education (figure 4).

Figure 4. Proportion of Dentists Remaining in the Same State for Undergraduate and Dental School



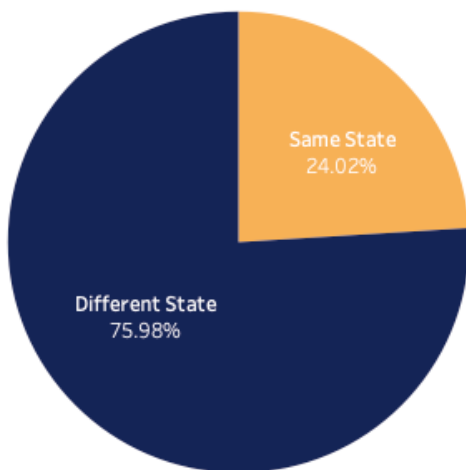
Transitions between U.S. Census-defined regions were also explored for this transition, to determine whether overall region played as great or similar an influence in transitional pathways as states. While the majority of students did change from one state to another, over 64% of students did not change from one region to another, indicating that staying within one's region is more important than staying in specifically the same state between undergraduate and dental schools (figure 5).

Figure 5. Proportion of Dental Students Remaining in the Same Region as Their Undergraduate School



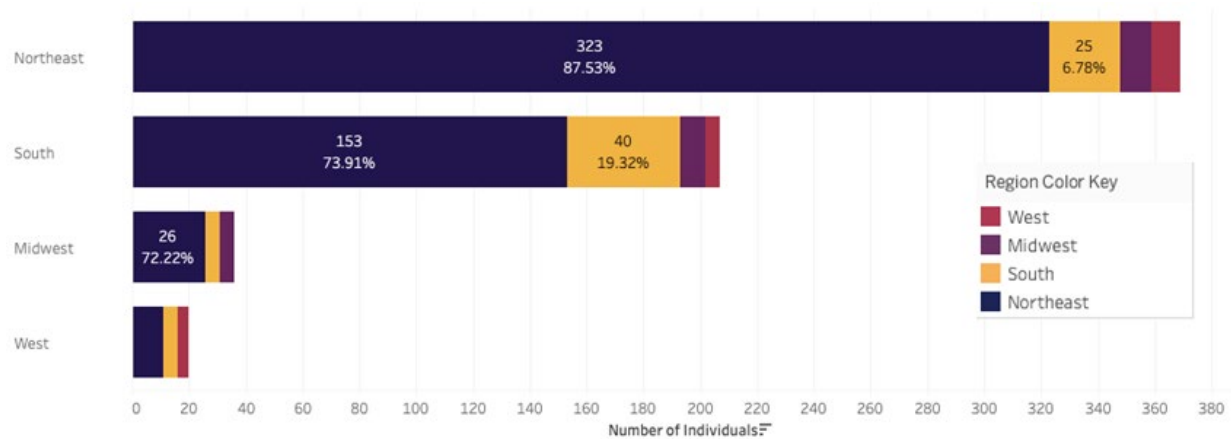
Similarly, over 75% of dentists chose a different state for their residency training than the state in which they attended dental school (figure 6). The most frequent transition pathway was for dentists graduating in Pennsylvania to come to Delaware for their residency training. This may indicate that individuals who started their educational career in a Delaware undergraduate school may be more inclined to return to Delaware for residency training than another state, if they plan on staying in Delaware to practice.

Figure 6. Proportion of Delaware Dental Residents Remaining in the Same Region as their Dental School



Transitions between U.S. Census-defined regions were also explored for the transition between dental school and residency training (figure 7). Similar to the transition between undergraduate and dental schools, while the majority of dentists changed states between dental school and residency training, the majority also stayed within the same region between dental school and residency training. This may suggest that staying within one's region is more important than staying within a specific state during a transitional period.

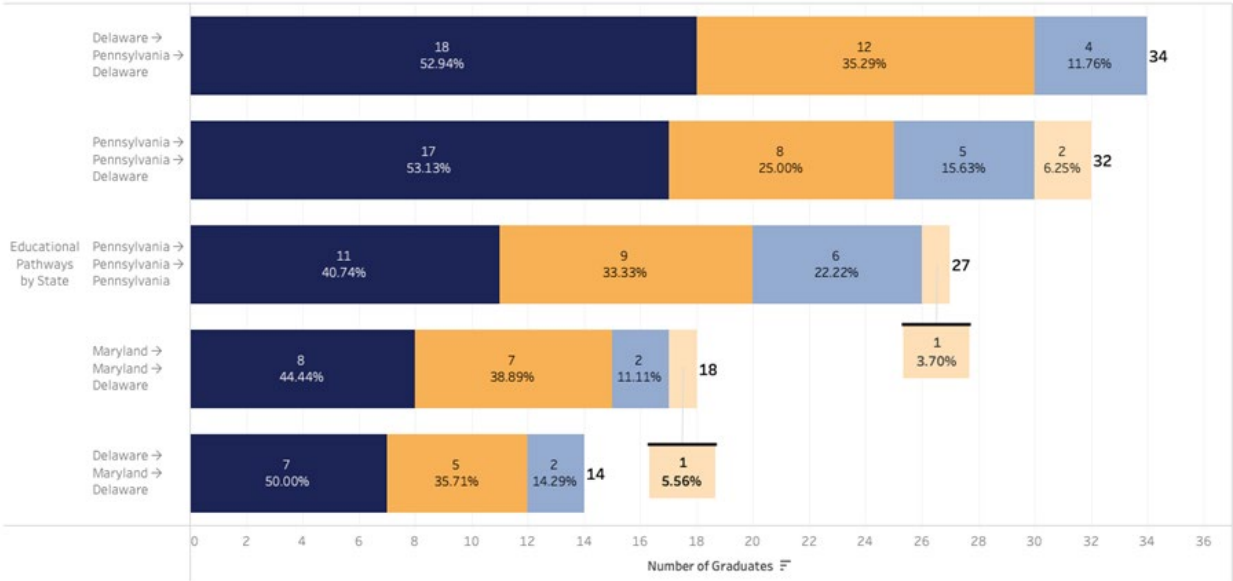
Figure 7. Dental Graduates with Regional Transition Between Dental School and Residency Hospital



A deeper analysis was conducted on these transitional pathways to determine the most common undergraduate to dental school to residency training pathways both at the state level and at the regional level. These pathways were further stratified by gender and license activity status.

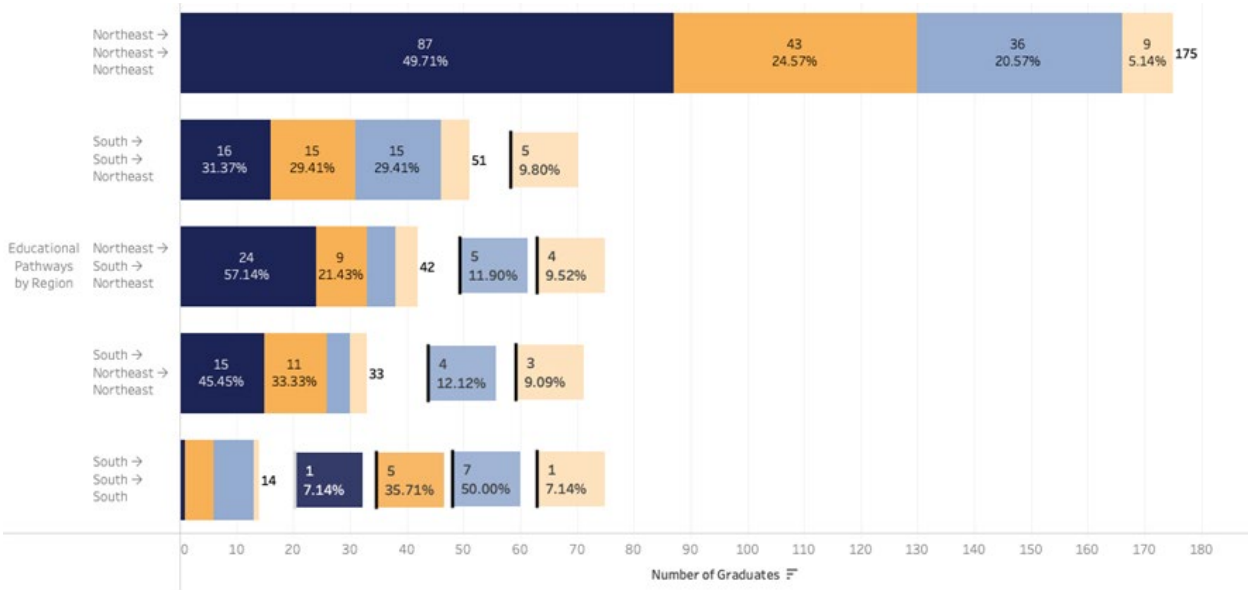
At the state level, Delaware dentists studied in Delaware for at least one of the three levels of education through their educational careers, in four out of five of the most common educational pathways (figure 8). The most common transitional pathway was to start in Delaware for undergraduate education, move to Pennsylvania for dental school, and return to Delaware for residency training. All female dentists that have taken this pathway are still actively practicing in Delaware.

Figure 8. Educational Pathways for Delaware Dentists, by Gender and License Status



At the regional level, the majority of dentists stayed in the Northeast region for their entire educational career, and all five of the most common educational pathways for dentists in Delaware included only transitions between the Northeast and South regions, with the fifth most common pathway completing all educational levels in the South (figure 9). This indicates that the Midwest and West regions do not contribute significantly to the educational pathways of Delaware dentists.

Figure 9. Educational Region Pathways for Delaware Dentists, by Gender and License Status

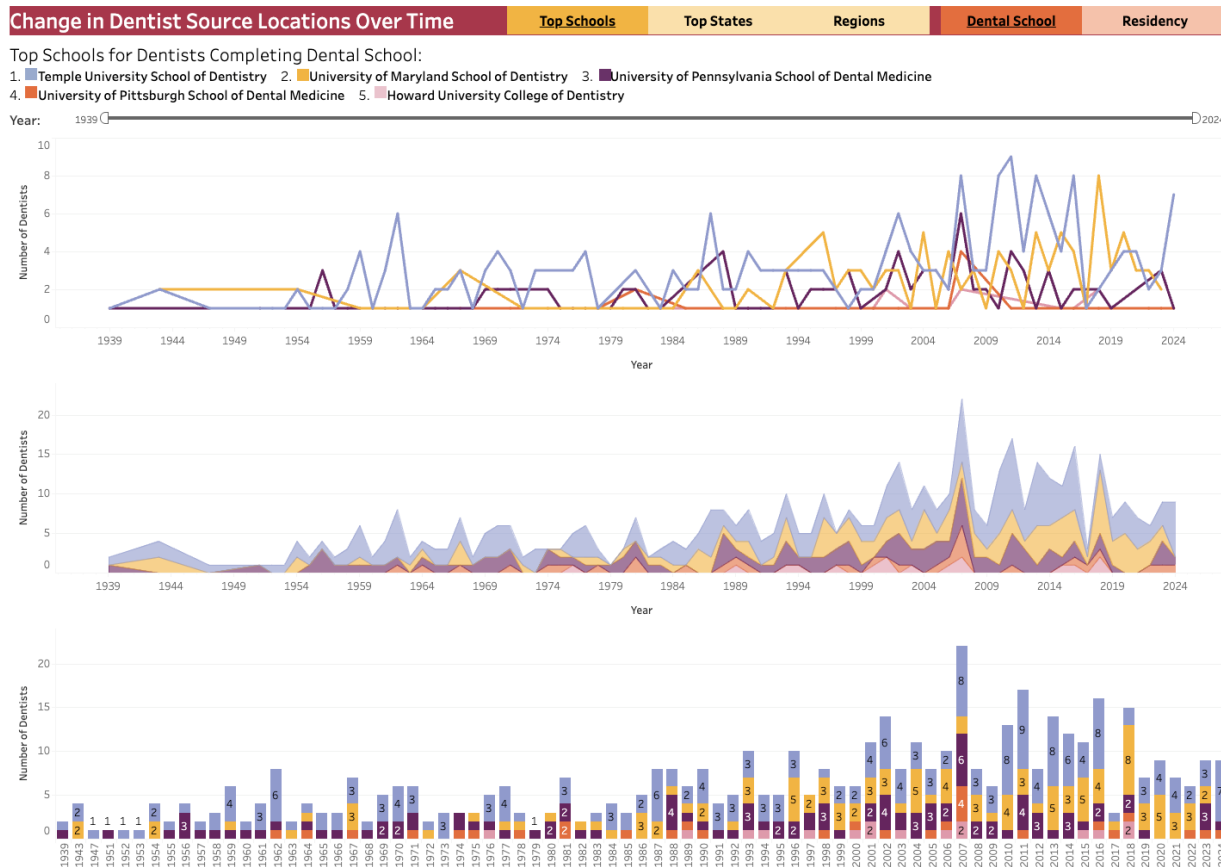


Changes in Dental Education Over Time

Records for dental school graduation dates were obtained as far back as 1939. Three of the top five contributors over the last 85 years have been dental schools in Pennsylvania, with the number one contributor Temple Dental School being the strongest contributor through most of

the latter half of the twentieth century, well into the twenty first century with a slight drop off in 2017 (figure 10).

Figure 10. Changes in Delaware Dentist Dental School Education Sites Over Time



The number one (Pennsylvania) and two (Maryland) states where Delaware dentists graduated from dental school are both Delaware border states. Despite New Jersey's proximity to Delaware, it does not make the top five most common states for dental school attendance, superseded not only by New York and Washington D.C., but also by Massachusetts.

Discussion

For most of Delaware's history, the Northeast has been the most common region for dentists from Delaware to complete their dental education, with occasional spikes in dentists completing their education in the South due to the influence primarily of Maryland and Washington D.C.

The Northeast is by far the most common region for dentists in Delaware to complete their residency training. This is likely due not only to the influence of Pennsylvania, but also the added influence of New York, specifically New York City, where the majority of residents from New York complete their training, and which has a high density of training hospitals due to a high population density. The South is the next most common region for dentists to complete residency training, likely due to the influence of Maryland and Washington D.C.

Records for residency training completion were obtained as far back as 1954. While the number one residency training location has been Christiana Care Health System since 1961, it is also the

only residency training location in Delaware with any level of significant contribution to training Delaware dentists.

Due primarily to the popularity of Christiana Care's residency programs, Delaware is the number one state where dentists complete their residency before practicing in Delaware. All three of Delaware's immediate border states are also among the most common states for Delaware dentists to complete residency training, which indicates that proximity to Delaware during residency may be a strong deciding factor in choosing to practice in Delaware.

Dentist Recruitment Action Plan

Recruiting dentists in Delaware hinges on understanding where graduates train and how that training translates into talent pipelines. In a state with a mix of urban centers, suburban communities, and rural pockets, knowing the undergraduate origins, dental schools, and residency backgrounds of candidates will help to map recruiting channels, build lasting relationships, and design pathways that attract the right practitioners to practices and organizations.

Because Delaware lacks a dental school within its borders, most local dentists will likely continue to come from programs in the Mid-Atlantic and Northeast and will likely remain close to their training communities after graduation. This amplifies the value of regional partnerships and a deliberate, Delaware-focused recruitment strategy that will leverage these cross-border connections and create a clear pipeline to practicing within the state.

Dental and Pre-Dental Pipelines

- Establishing relationships with nearby dental schools and residency programs in the Mid-Atlantic (Pennsylvania, New Jersey, Maryland, and New York);
- Establish relationships with pre-dental programs and campus career centers at universities in the surrounding region;
- Emphasizing externships, shadowing opportunities, and joint continuing education events that reveal practice culture and clinical strengths; and
- Offer Delaware-centric experiences to familiarize students with Delaware's patient mix, payer landscape, and opportunities for mentorship.

Residency Pipelines

- Prioritize relationships with program directors and faculty in the Mid-Atlantic corridor;
- Establish a Delaware-focused residency-to-private-practice pathway that includes mentorship, case collaboration, a defined ownership or partnership track, and financial incentives that acknowledge regional living costs and the local market;
- Create pathways for specialty programs (Orthodontics, Endodontics, Oral and Maxillofacial Surgery, Pediatric Dentistry, etc.) that reflect the needs of those specialties.

Implementation of this Action Plan in Delaware should be methodical and measurable. Residencies and institutions should build a candidate database that ties individuals to their training institution, graduation year, and preferred geographic regions, then segment outreach by

target Delaware counties (New Castle, Kent, and Sussex) and by specialty needs. Outreach should be multi-channel and relationship-driven with personalized outreach to program directors and alumni coordinators, attendance at regional residency conferences, and active participation in school fairs and career events.

Programs should offer meaningful experiences—externships in a Delaware practice, collaborative case reviews, and joint continuing education sessions—to demonstrate clinical quality and a welcoming practice culture. Incentives should include competitive compensation packages aligned with Delaware market data, along with loan-repayment support where feasible, professional development allowances, flexible scheduling, and a transparent path to ownership or leadership roles that aligns with candidates' long-term goals.

Messaging and branding should emphasize how a Delaware practice supports clinicians who trained elsewhere but are drawn to the state's quality of life, community impact, and growing patient base, and should highlight success stories of dentists who trained out of state and chose Delaware for residency, practice, or ownership opportunities.

Study Limitations

The study acknowledges limitations related to data completeness. Undergraduate records were found for 646 dentists (51.31%), dental school records for 1,037 dentists (82.37%), and residency records for 675 dentists (53.61%) out of the total 1,259 dentists studied. This data was further analyzed to determine which records obtained belonged to actively practicing dentists or dentists who no longer practice in Delaware. This information is provided to better contextualize the data, and these gaps may affect the generalizability of some conclusions.

Conclusion

The Delaware Academy of Medicine & Public Health's investigation offers valuable insights into the educational pathways of Delaware dentists over 85 years. The data reveal subtle regional diversity in the pathways of Delaware dentists, with an overwhelming leaning towards educational training at all levels in the Northeast and Mid-Atlantic regions of the country, from New York to Washington D.C. This study highlights critical transitions in the educational pipeline for dentists in Delaware and touches on evolving trends in the pipeline over time. Despite some data limitations, this comprehensive analysis provides a foundation for future workforce planning and educational policy development in dentistry for the state of Delaware.

Mr. McNeill may be contacted at mmcneill@delamed.org.

Acknowledgement

The authors would like to recognize Junkui Cui, PhD and Jose Hernandez-Yeppez, BS, for their contributions to this report.

Copyright (c) 2025 Delaware Academy of Medicine / Delaware Public Health Association.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.