

REPORT ON THE 2009-2010 WORKFORCE SURVEY OF DENTISTS

FLORIDA DEPARTMENT OF HEALTH

March 2011

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EXECUTIVE SUMMARY: DISCUSSION AND SIGNIFICANCE OF FINDINGS

In 2009, the Florida Department of Health developed a workforce survey for dentists. The survey was administered on a voluntary basis in conjunction with biennial renewal of dental licenses for which the deadline was February 28, 2010. Responses are self-reported. Eighty-nine percent of dentists with an active Florida license responded to the survey. Respondents closely matched the profile of all active dentists in Florida with regard to gender, race/ethnicity, and age.

Dentists currently practicing in Florida do not resemble the composition of the state's population with respect to gender and race/ethnicity. While Florida's population is about evenly split by gender, nearly three-quarters of Florida's dentists are male. Hispanics and African-Americans are under-represented in the dental workforce. Hispanics constitute 20.5% of the state's adult population and about 18% of active dentists. African-Americans constitute 14.8% of the state's adult population and only 3.0% of Florida's dentists. However, evidence of demographic change in the profession is found among the younger dentists. For dentists aged 20 – 29 years, females slightly outnumber males. Among dentists under age 50, the percentage of Hispanics (26.1) surpasses the corresponding statewide percentage. The under-representation of African-Americans does not appear to be changing.

The age distribution of the workforce potentially has important ramifications. Among survey respondents who practice in Florida, the median and mean age in mid-2010 was 49 years. Nearly half of respondents (48.8 percent) were 50 or older. Based on survey responses, plans to leave the profession are infrequent until age 50 – 59, after which they rise rapidly. Still, less than a third of respondents aged 60 – 69 years, and less than half of respondents 70 – 79 years, plan retirement within the next five years. Only in the age group 80 – 89 years does the percent of respondents with retirement plans reach a large majority (60.0%). An estimated 926 dentists, roughly ten percent of Florida's currently practicing workforce, plan to retire within the next five years. However, more than two-thirds of respondents planning retirement reported an intention to maintain a limited license for volunteering.

The aging of Florida's dentists does not appear to suggest potential reduction in the size of the workforce over the next several decades. Projections through 2050 indicate that new dentists entering the profession more than offset attrition associated with retirement. This assumes that current entry levels are sustained. The statewide projection may not apply to areas within Florida that have few dentists currently practicing. In particular, certain northern Florida counties with small, largely rural populations may be much more susceptible to an adverse impact from the retirement of dentists than counties in other parts of the state.

An overwhelming majority of respondents (92.7%) who currently practice in Florida practice in a private office setting. Most frequently, the office is a solo practice (61%), but nearly a third of respondents (31.6%) belong to a group practice. Respondents who practice in non-office settings (7.3%) generally practice in government-operated or government-supported settings. These settings are intended either for select populations—state correctional inmates, veterans, or active military personnel—or for lower income persons—County health departments, academic institutions, community health centers, federally qualified health centers, and other state government clinical settings.

More than other practice settings, solo office practice represents a “destination” setting. Non-office settings and, to a lesser extent, group practices, appear to be more associated with professional transition. Nearly 90% of respondents who work in a solo practice setting are practice owners. Ownership declines to 53.0% among respondents in group practices with a single specialty, 29.0% among respondents in a multi-specialty office setting, and only 4.3% among respondents in non-office settings.

Nearly three-quarters of survey respondents (74.1%) reported their practice type as general dentistry not combined with any specialty. Another 21.3% reported practice of a single specialty other than dental public health. Dental public health was the practice type of the smallest group, 1.4%. The remaining 3.2% represented some combination of general practice, public health practice, and another specialty practice or practices. With regard to the geographic distribution of specialists within Florida, the common pattern is for an absence of available specialists in many central Panhandle counties or even in adjacent sets of these counties. Residents requiring services of a specialist may face substantial travel distances. For some specializations, particularly, periodontics and endodontics, the scarcity of specialists extends well into the western Panhandle.

The uneven geographic distribution of dentists in Florida is not confined to specialists. Generally, dentists are disproportionately concentrated in the more populous areas of the state, particularly the coastal counties of southern Florida. With regard to resident-to-dentist ratios, these counties tend to have the best availability of care, and the interior counties of south Florida, along with many central Panhandle counties, the least availability. When Florida’s counties are ranked from low to high in resident-to-dentist ratios, 85 percent of the state’s residents live in counties with higher availability. Only 15 percent live in the counties with the lower availability. Statewide, the ratio of residents to dentists is about 2,016 to one, including dentists who practice less than full-time.

With regard to practice time, nearly two-thirds of the survey respondents work 31 – 40 hours per week, while an additional 12.4% exceed 40 hours weekly. For purposes of analysis, full-time work is defined as 31 or more hours per week. Slightly more than a fifth of respondents (21.6%) practice dentistry part-time, with

the large majority of these working 21 – 30 hours weekly. Less than 10% of respondents work fewer than 21 hours per week.

Patterns of part-time practice vary by gender and age. Across all age groups, male respondents practicing in Florida are more likely to work full-time than female respondents. By age, the percentage of respondents who work full-time remains in the low eighties (82.0 – 83.8%) from age 20 through 59 years. For respondents aged 60 – 69, full-time practice declines to slightly more than two-thirds (68.6%). Further decline to less than half (39.0%) occurs for respondents aged 70 – 79.

Given the number of active dentists and the number of patients they report treating, it is estimated that the current non-specialized dental workforce produces up to 23.7 million patient encounters per year or roughly 1.3 dental visits annually for each Floridian. There is evidence to suggest that the workforce has unused capacity for serving patients. Among respondents in general practice, more than 97% report current acceptance of new patients. The percentage is the same or higher in the specialty practices, and only slightly lower (almost 94%) in dental public health practices. The number of dentists practicing part-time, and the potential for increased use of auxiliaries (assistants and hygienists), further suggest that dental productivity has not reached an upper limit for current practitioners.

Among survey respondents with an active Florida license, 19.1% reported that they do not currently practice in the state. Thus, only about 9,400 of the 11,583 dentists holding an active Florida license in mid-2010 were in-state practitioners. Two characteristics most strongly distinguish the non-practicing dentists: They have an out-of-state address on file with the Department of Health, and they hold a dental license in another state in addition to a Florida license. Among the non-practicing Florida dentists, nearly 85% reported plans for future practice in the state. This equates to about 1,808 dentists. Combined with several hundred more dentists with plans for future Florida practice whose current licensure does not allow practice, a potential pool of dentists exceeding 2,000 is available to grow the current workforce at some indefinite point in the future.

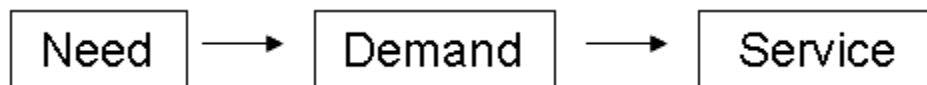
Many different barriers may block access to oral healthcare, including lack of knowledge or motivation, phobias, poverty, language or cultural differences, disabilities, and lack of an available provider. The different barriers may require different remedies. Among the barriers, poverty may be the most tangible and pervasive. Public assistance in the form of Medicaid and private charity (volunteer) service are two means for surmounting this barrier. Among the nearly 9,400 active dentists in Florida, approximately 1,500 are enrolled as Medicaid providers (16%). Several hundred of these are not actively treating Medicaid patients. During fiscal year 2009-10, a total of 2.1 million children were eligible for Medicaid services in Florida, but less than 21% received a dental service paid

by Medicaid. Private dentists provided the large majority of Medicaid services because of the much greater frequency of private providers relative to other providers. However, the average number of Medicaid patients treated per dentist was considerably higher in publicly sponsored practices, particularly county health departments, than in private practices.

Extending Medicaid dental services to a broader segment of eligible persons rests primarily on increasing the number of dentists in private practice who accept Medicaid. Among survey respondents, the only reason cited by more than half (56.3%) for not accepting Medicaid is low compensation. Of note, black dentists, based on survey responses, have higher rates of active Medicaid participation than white or Hispanic dentists. Furthermore, certain counties in Florida stand out for the low Medicaid participation of their dentists. These include Clay, St. Lucie, Okaloosa, St. Johns, Leon, and Sarasota Counties. As an alternative or supplement to Medicaid for surmounting the access barrier of poverty, volunteer services may help many individuals who might otherwise not receive oral healthcare. However, the number of participating dentists and the scope of their activity suggest that volunteer services reach only a small percentage of Floridians in need of care.

The sufficiency of the dental workforce for meeting Florida's oral healthcare needs can only be gauged within the dynamic of need and service. The workforce survey of dentists, concentrating on supply-side characteristics of Florida dentistry, is limited by its own scope as a resource for grasping the extent to which needs and services attain balance.

Certain analytic distinctions, displayed in the diagram below, may help to focus the issue further.



Demand is the active expression of a need for service, typically in the form of a request for an appointment with a dentist. Under an oral healthcare system without barriers, need would receive expression as demand, which would result in a service. In actuality, barriers exist at both junctures. Lack of knowledge or motivation, phobias, poverty, language or cultural differences, disabilities, lack of an available provider, distant location of a provider, long waiting times for an appointment, inadequate transportation, etc on may block the fulfillment of a need with a service. Underserved areas or populations result to the extent that the transition from need to demand to service is blocked. Solutions to eliminate barriers vary for the different types of barriers. In particular, it is essential to distinguish between barriers resulting from the size or productivity of the dental workforce from barriers resulting from other factors, such as poverty, special needs of patients, reimbursement, and geographic distribution of the workforce.

Removal of the latter barriers may not require any change in the size or productivity of the workforce.

The provision of services inevitably confronts an upper limit dictated by the economics of oral healthcare. Like any other small business, a private dental practice remains viable only as long as its revenues cover its costs. Among survey respondents, nearly 93% work in the private sector. Thus, the provision of dental services in Florida rests largely with thousands of small, self-supported businesses. Market forces of supply and demand will limit the number of these businesses and govern the areas where they are viable. Services provided or paid by the public sector may face even tighter constraints as elected officials establish spending priorities in the face of strained federal and state budgets. In either instance, limits of available resources constitute limits for the workforce and the services it provides even when needs for care are not fully met.

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SYNOPSIS OF FINDINGS

In 2009, the Florida Department of Health developed a workforce survey for dentists in response to concerns and recommendations of the Department's Oral Healthcare Workforce Ad Hoc Advisory Committee. The survey was designed to obtain information unavailable elsewhere on key workforce characteristics to better inform and shape public healthcare policy. In conjunction with biennial renewal of dental licenses for which the deadline was February 28, 2010, the survey was administered on a voluntary basis beginning in October 2009. Of 11,272 dentists who renewed an active license by June 23, 2010, 89% responded to the survey. Based on licensure data, respondents closely matched the profile of all active dentists in Florida with regard to gender, race/ethnicity, and age.

Major findings of the 2009 - 2010 Workforce Survey of Dentists include the following.

Dentists differ from Florida's adult population in age and gender. In 2010, 50% of the adult population is between 40 and 69 years of age, and 49% is male. Among all respondents with an active Florida license (n=10,311):

- 69% were between the ages of 40 and 69 years, with a mean age of 49.
- 74% are male and 26% female.
- The mean ages for women and men were 42 and 52 years, respectively.

Among respondents with an active Florida license who practice in Florida (n=8,096):

- 70% are white, 18% Hispanic, 6% Asian, and 3% black. The percentages of Hispanic and black dentists are lower than the respective percentages in Florida's 2010 adult population: 20.5% for Hispanics and 14.8% for blacks.
- 92.7% practice in private office settings. The remaining 7.3% generally practice in government-operated or supported settings.
- 74.1% practice general dentistry not combined with any specialty; 21.3% practice a single specialty other than dental public health; 1.4% practice dental public health. There is an absence of practicing specialists in many central Panhandle counties.
- The statewide ratio of residents to dentists is about 2,016 to one. Coastal counties in southern Florida generally have the lowest ratios in the state, while interior counties of south Florida and many central Panhandle counties have the highest ratios.
- 66% work 31 – 40 hours per week, while 12.4% exceed 40 hours weekly.

- 21.6% practice dentistry part-time (<31 hours weekly). Less than 10% work fewer than 21 hours per week.
- Among survey respondents with a Medicaid provider number (n = 1,226), 782 (63.8%) are accepting new Medicaid patients.
- Of 6,716 respondents without a Medicaid provider number, 56.3% cited low compensation rates as the primary reason for not accepting Medicaid.
- 10% plan to retire within the next five years. However, 67.7% who are planning retirement intend to maintain a limited license for volunteering.
- Dental workforce projections through 2050 indicate that new entering dentists more than offset retirement-related attrition. However, this offset may not apply to areas with few practicing dentists, such as small rural communities.

Among the 19.1% of respondents with an active Florida license who do not currently practice in Florida (n=1,912):

- The most cited response for not practicing in Florida was “personal choice” with 37.5%, followed by “primary residence out of state” with 27.0%.
- 85% reported plans for future practice in the state. This group combined with dentists whose current licensure does not allow practice creates a pool exceeding 2,000 dentists who could potentially grow the current workforce in the future.

INTRODUCTION

The present report comprises the following sections.

- Overview: Survey Methods, Reporting, and Limitations
- Findings of the 2009 - 2010 Florida Workforce Survey of Dentists
- Executive Summary: Discussion and Significance of Findings
- Appendix A: 2009 - 2010 Dentist Workforce Survey Instrument
- Appendix B: Detailed Methods
- Appendix C: Florida Oral Healthcare Workforce Initiatives and Documents

OVERVIEW: SURVEY METHODS, REPORTING, AND LIMITATIONS

This report from the Florida Department of Health presents data from the 2009 - 2010 workforce survey of dentists. The survey was designed to obtain information unavailable elsewhere concerning Florida's dental workforce that would better inform and shape healthcare policies. Florida statute and administrative rules require renewal of dental licenses every two years, with the most recent period ending on February 28, 2010. To coincide with this biennial license renewal period, the Florida Department of Health prepared and administered the first workforce survey of dentists (see Appendix A).

Respondents could complete the web-based survey directly on-line or by printing and submitting the completed survey with their license renewal paperwork or as a separate document. Paper surveys were entered into the web-based system for analysis. The survey consisted of 25 core questions on demographics, education and training, practice characteristics and status, specialties, retention, and access to oral healthcare in Florida. Cross-tabulation of responses to the core questions allowed focused analysis of specific topics, such as characteristics of dentists with an active Florida license who practiced out-of-state and the geographic distribution of the workforce. Licensure data maintained by the Department of Health and other data sources provided additional material for the analysis. A more detailed statement of the survey methods is included as Appendix B.

Other points of note regarding the survey methods, reporting, and limitations include the following:

- A total of 11,539 dentists renewed either an active or non-active Florida license during the 2009-2010 biennial license renewal period. Of 11,272 dentists who renewed an active license, 89% responded to the survey.
- Findings from this report exclude data from 267 dentists renewing a non-active license.
- Respondents are comparable to entire population of dentists renewing an active license with respect to demographic factors.
- Limitations and other relevant points regarding the 2009 - 2010 workforce survey data and report are as follows:
 - Data were self-reported.
 - Data were from one biennial licensure period used for collection and analysis purposes.
 - This initial report will provide a benchmark for future dentist workforce information.

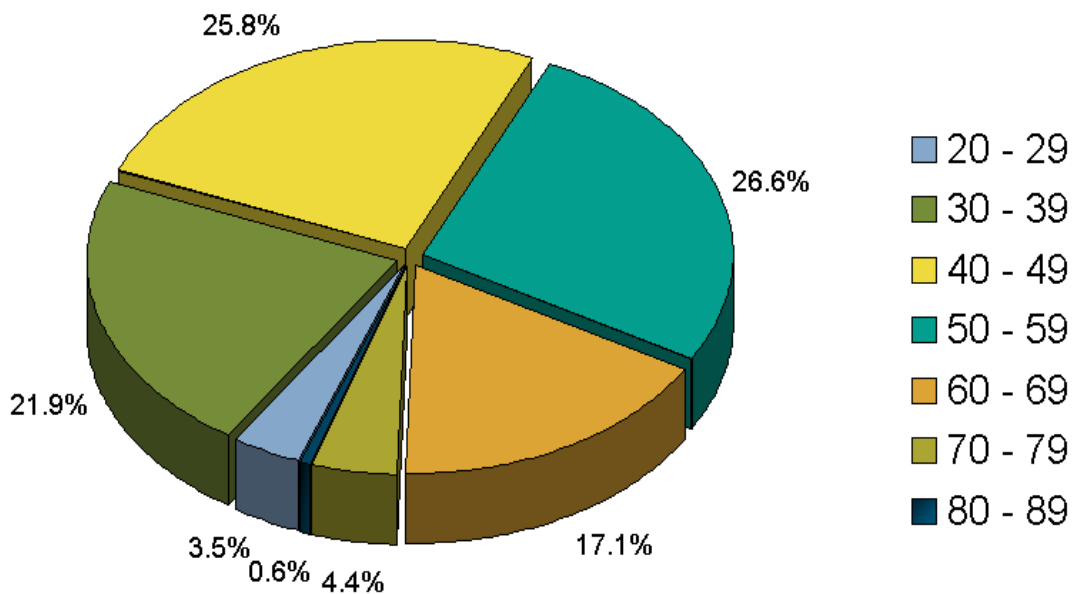
FINDINGS OF THE 2009 - 2010 WORKFORCE SURVEY

SECTION 1: Dentists Practicing in Florida – Demographics

Summary: Of the 10,311 dentists with active licenses who responded to the 2009 - 2010 Florida Workforce Survey, the vast majority were between the ages of 40 and 69 years, male, and white.

Among respondents, 70% were between the ages of 40 and 69 (see Figure 1.1) with a mean age of 49 years.

Figure 1.1. Age Distribution of Respondents Practicing in Florida

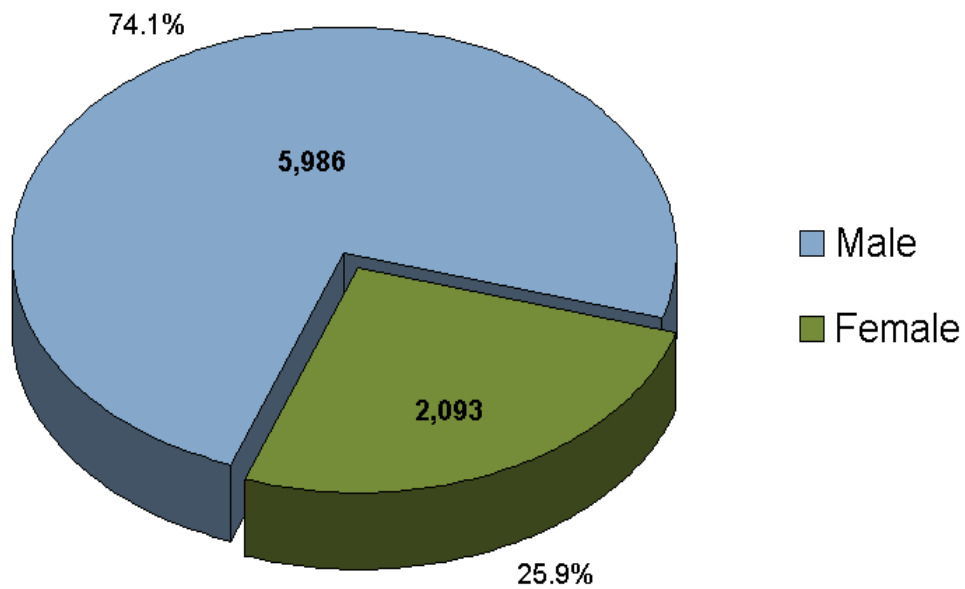


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Seventy-four percent of respondents are male (Figure 1.2) and 26% female.

Figure 1.2. Gender Distribution of Respondents Practicing in Florida

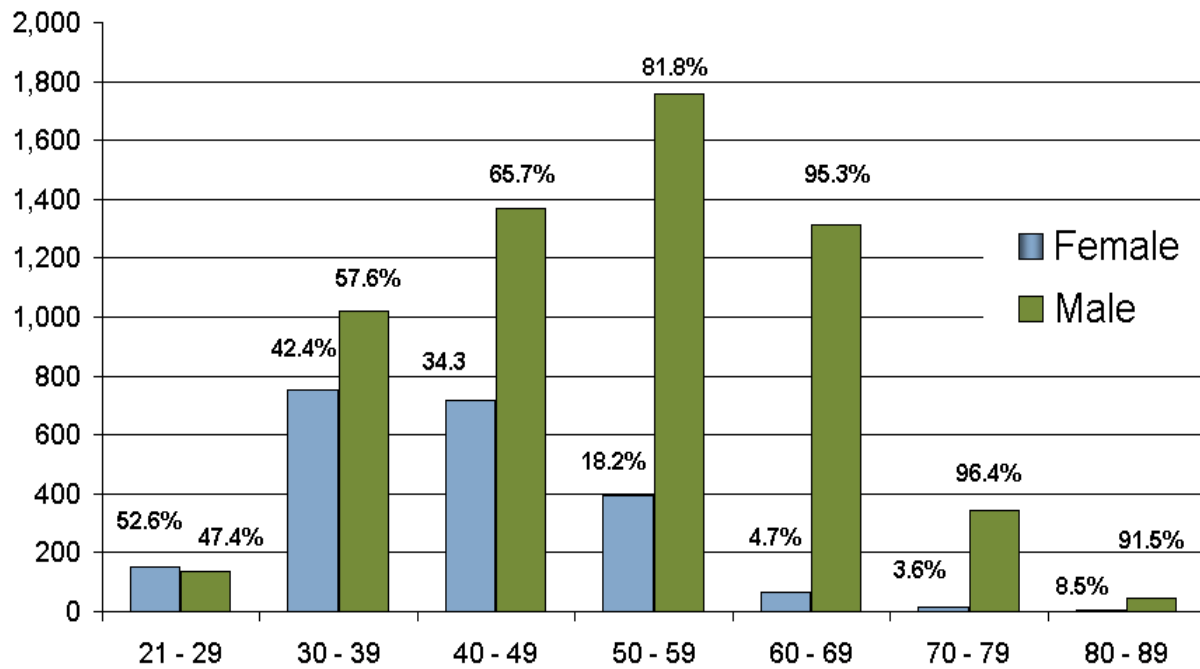


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Gender distribution varied by age, with females constituting a larger portion of dentists in the younger age groups (Figure 1.3).

Figure 1.3. Gender by Age Group for Florida's Practicing Dentists

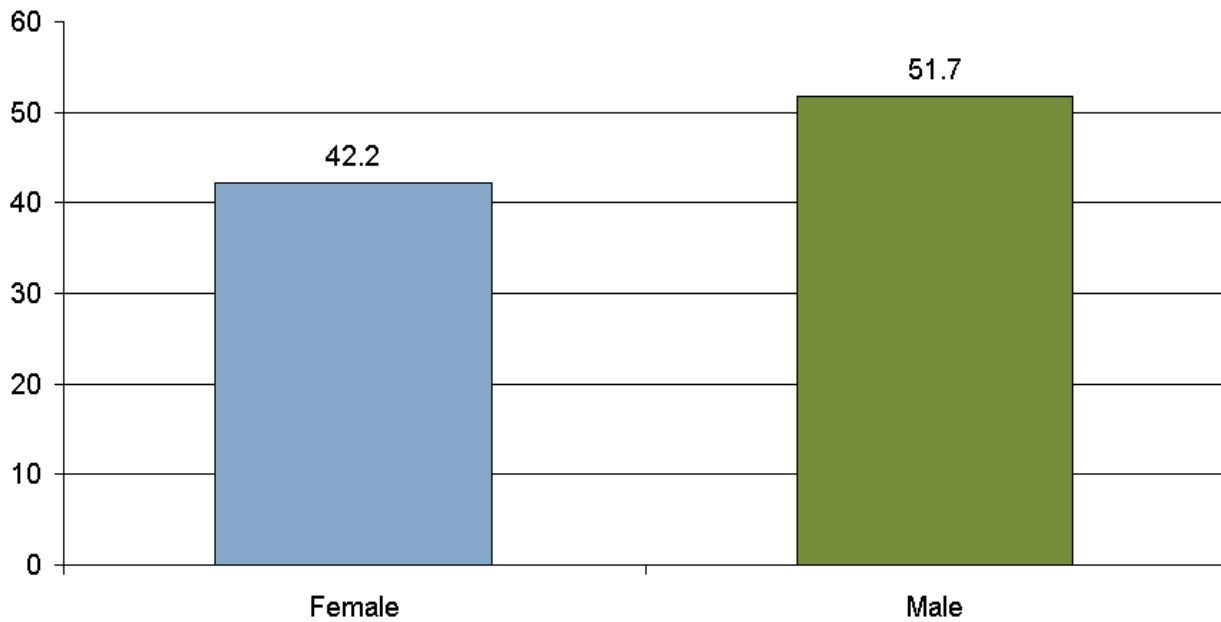


Note: Information was unavailable for 17 respondents.

Source: Workforce Dental Survey, 2009-10

The mean ages were 42 years for women and 52 years for men (Figure 1.4). This age and gender distribution differs from the Florida adult population as a whole (age 20 or more years). In 2010, 50% of the adult population is between 40 and 69 years of age and 48% of the population is male.

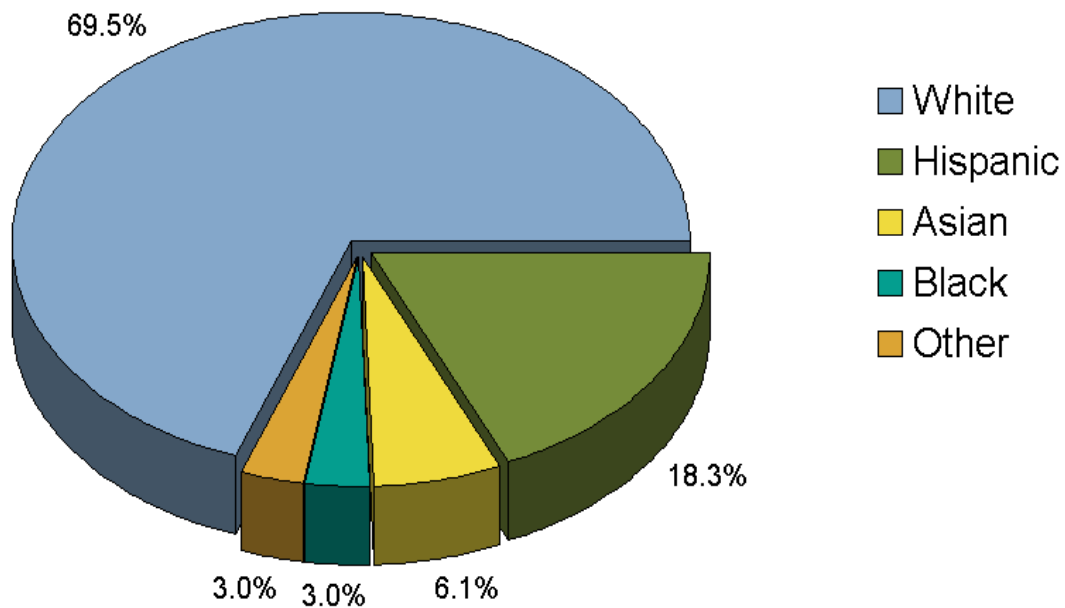
Figure 1.4. Average Age by Gender for Respondents Practicing in Florida



Source: Workforce Dental Survey, 2009-10

Whites, Hispanics, and Asians constitute 94% of Florida's practicing dentists (Figure 1.5). The percentage of black dentists (3%) is disproportionately low compared to the percentage of black adult Floridians in 2010 (14.8%). Hispanic representation among dentists corresponds more closely to the distribution in the adult population: 18% among dentists versus 20.5% among Floridians.

Figure 1.5. Distribution of Race\Ethnicity among Respondents Practicing in Florida

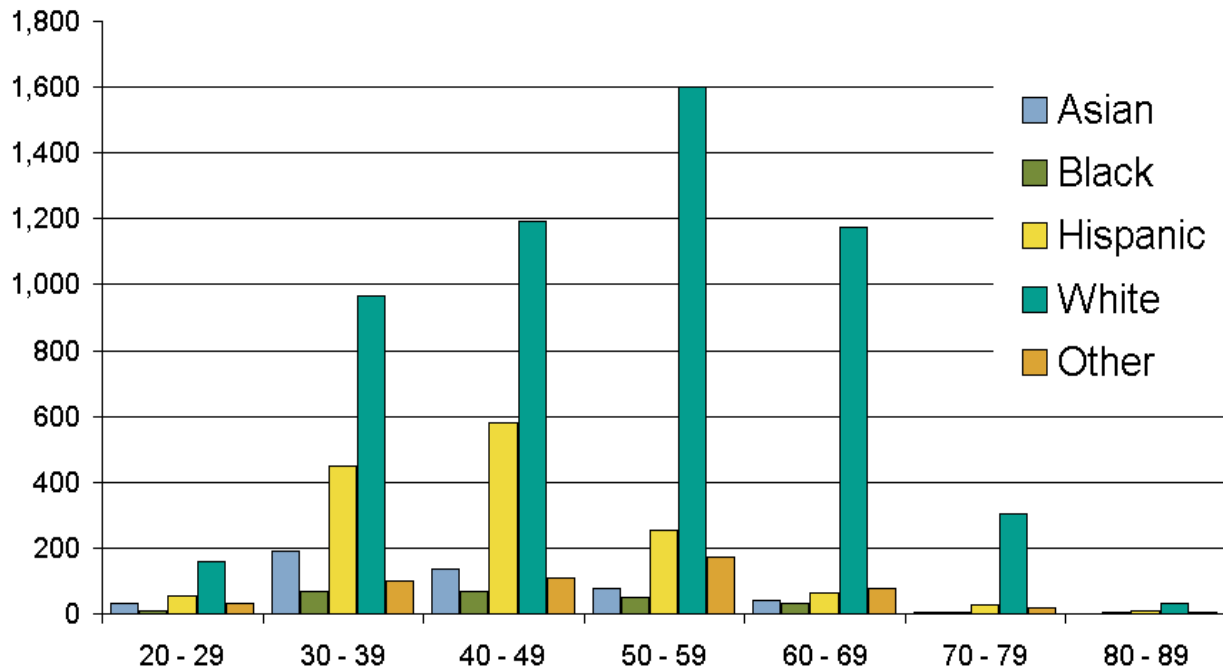


Source: Dental Workforce Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

The race/ethnicity frequencies of respondents are displayed by age group in Figure 1.6.

Figure 1.6. Race\Ethnicity of Respondents Practicing in Florida by Age Distribution



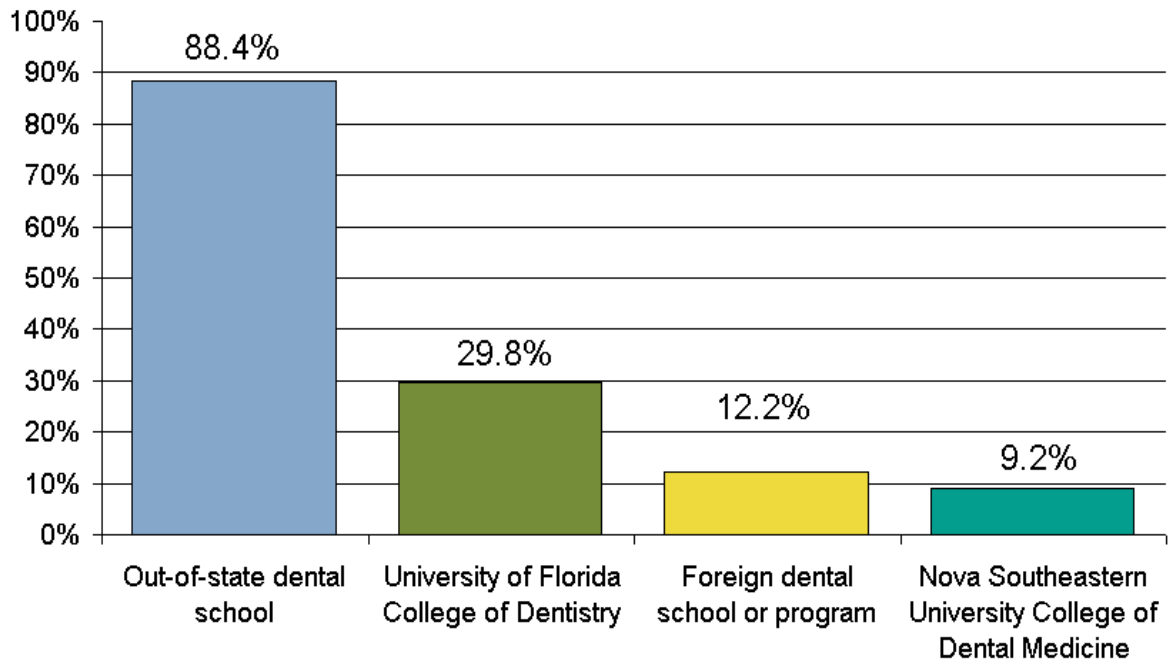
Source: Workforce Dental Survey, 2009-10

SECTION 2: Dentists Practicing in Florida – Education and Training

Summary: A large majority of respondents who practice in Florida trained at out-of-state dental schools, though the relative size of the majority varies by geographic region. Respondents who graduated from the University of Florida College of Dentistry had the highest overall rate of in-state practice, though not necessarily the highest rate in every age and race/ethnicity group.

Figure 2.1 displays the percent of respondents who practice in Florida by the schools or school locations from which they received a degree. Percentages sum to more than 100% because 11% of respondents received a dental degree from more than one program or school. Nearly 40% of respondents received a dental degree from a Florida school, most often the University of Florida College of Dentistry (29.8%). Excluding Florida, the leading states where practicing respondents obtained their training are New York, Pennsylvania, and Massachusetts. Approximately 12% of respondents reported dental training outside the country; in descending frequency, the top five countries of training are Colombia, Cuba, India, Canada, and Mexico.

Figure 2.1. Percent of Respondents by Dental School of Graduation

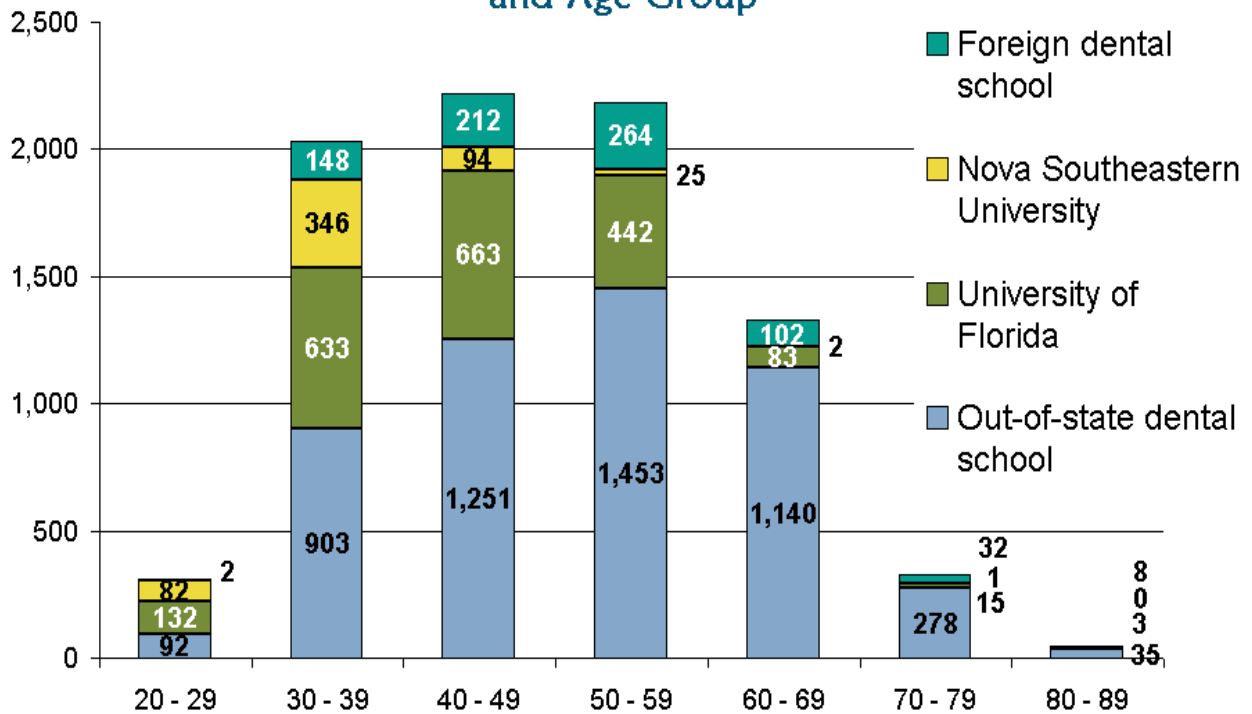


Source: Workforce Dental Survey, 2009-10

Figure 2.1 shows that the majority of Florida's current dental workforce trained outside the state.

Figure 2.2 illustrates the number of respondents who practice in Florida by dental school or program and age group. Respondents are counted once for each school or program from which they received a dental degree. The predominance of dentists trained outside the state is evident in every age group except the youngest. The relative magnitude of the predominance increases with each age group before leveling off at 94 – 95% for age groups beyond 50 – 59. Among respondents younger than 40, the availability of dental training at Nova Southeastern University College of Dental Medicine has substantially boosted Florida’s in-state contribution to its dental workforce.

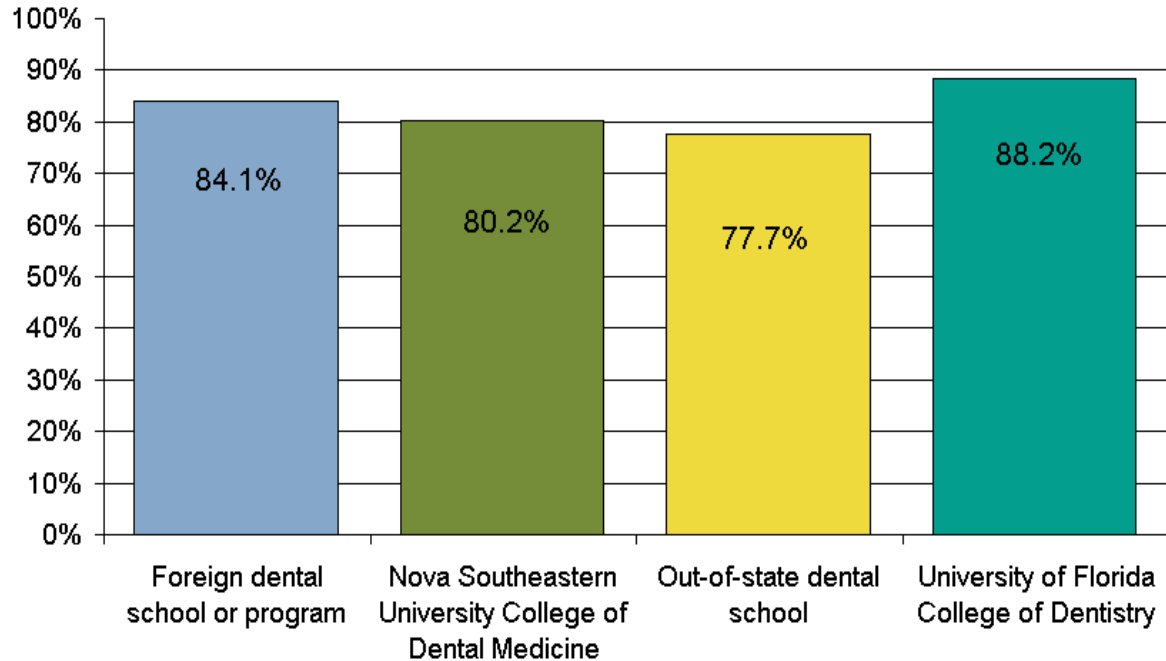
Figure 2.2. Number of Respondents by Dental School and Age Group



Source: Workforce Dental Survey, 2009-10

Figure 2.3 displays the rates at which respondents practice in Florida, broken out by the dental school or schools from which they received a degree. Graduates of the University of Florida had the highest rate of in-state practice (88.2%), while graduates of out-of-state schools had the lowest (77.7%).

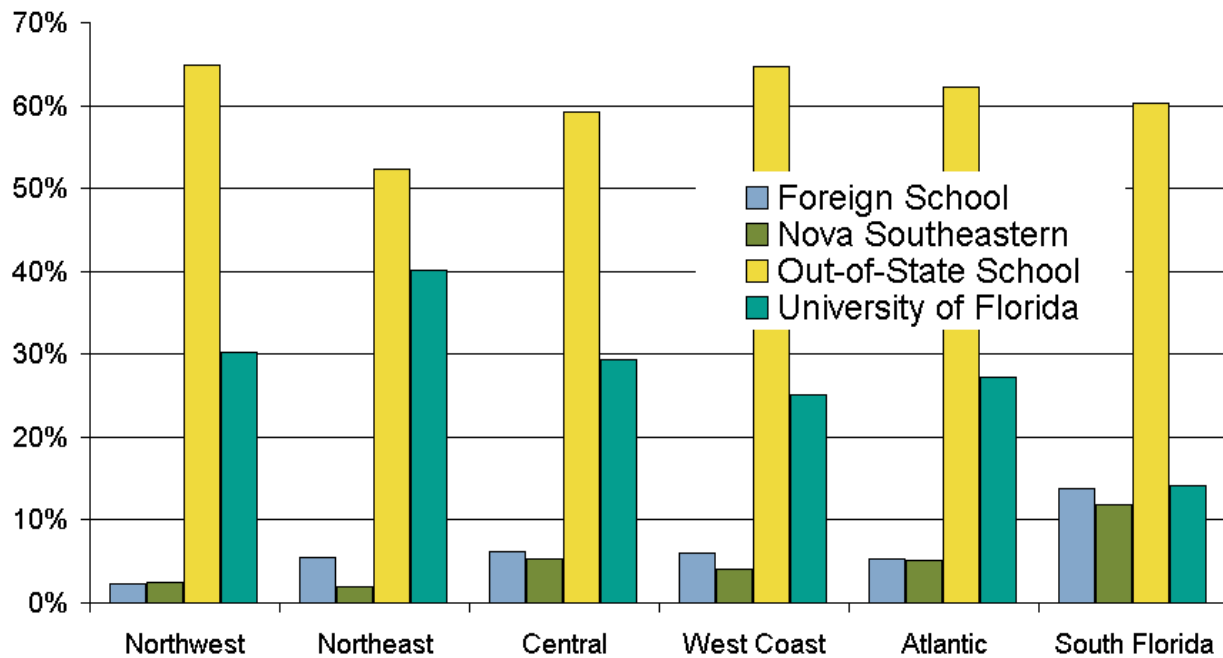
Figure 2.3. Percent of Respondents Who Practice In Florida by Dental School of Graduation



Source: Workforce Dental Survey, 2009-10

Figure 2.4 displays the regional composition of active Florida dentists by dental school, based on survey responses. In all regions of Florida, dentists with a degree from an out-of-state dental program constitute majorities of the workforce ranging from 52% in the northeast region to 65% in the northwest and west coast regions. Among University of Florida dental graduates, representation as a share of all dentists practicing in a region is highest in northeast Florida and lowest in south Florida. In the other regions, University of Florida representation ranges from 25 – 30%. Among dental graduates of Nova Southeastern University, regional representation is highest in south Florida (11.8%) and 2% – 5% in the other regions.

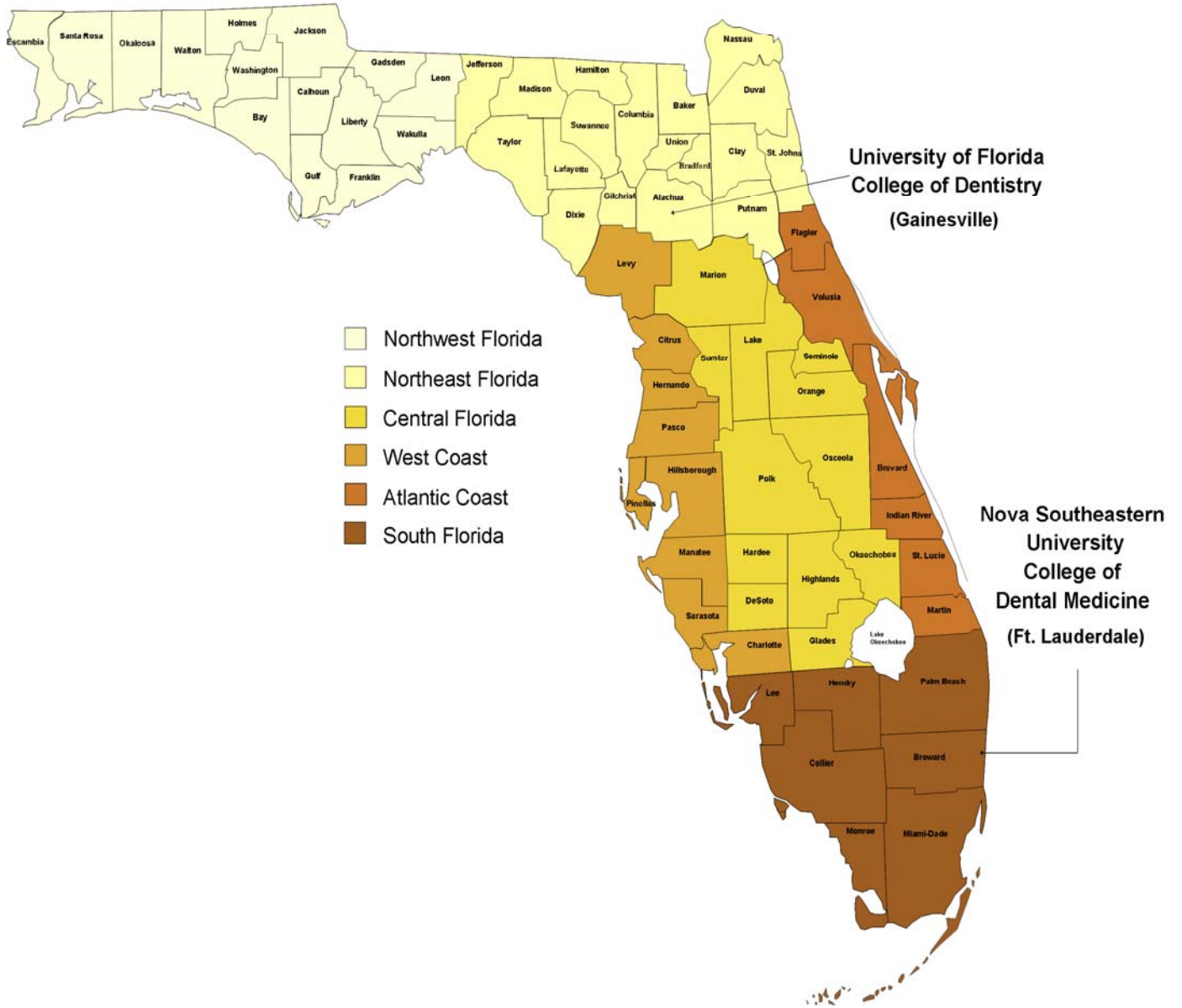
Figure 2.4. Regional Composition of Practicing Florida Dentists by Dental School



Source: Workforce Dental Survey, 2009-10

Figure 2a.1 illustrates the regions of Florida and the location of the state's two dental schools.

Figure 2a.1. Florida Dental Schools and Regions



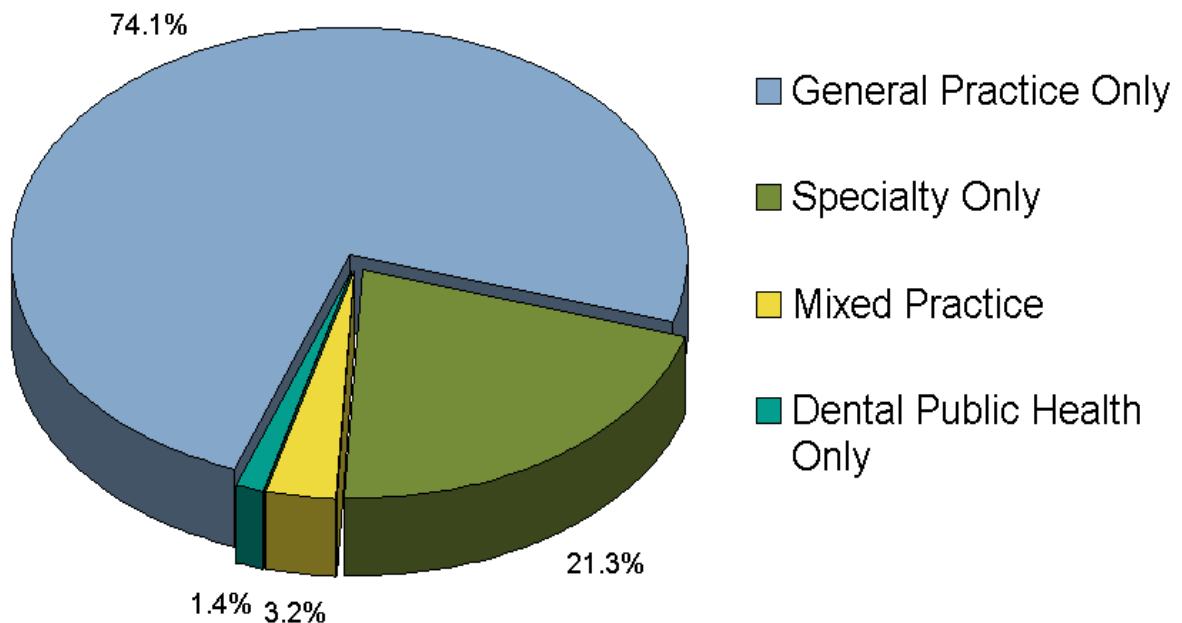
Note: Non-respondents to the workforce survey are not shown in the map.

SECTION 3: Dentists Practicing in Florida – Practice Characteristics

Summary: Of respondents who practice in Florida, nearly three-quarters (74.1%) report their practice as general only, i.e., not combined with any specialty; orthodontics and dentofacial orthopedics is the most frequent specialty among single-specialty practitioners, more than two-thirds (67.2%) reside and work in the same county; and an overwhelming majority (92.7%) practice in an office setting.

Figure 3.1 illustrates the distribution of dental practice types among survey respondents who practice in Florida. Nearly three-quarters of respondents (74.1%) report their practice as general only, i.e., not combined with any specialty. Another 21.3% practice a single specialty. Dental public health with no specialty is the practice type of the smallest group, 1.4%. The remaining 3.2% represent some combination of practice types. The specialties listed in the survey are endodontics, oral and maxillofacial pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics and dentofacial orthopedics, pediatric dentistry, periodontics, and prosthodontics.

Figure 3.1. Dental Practice Types among Respondents Practicing in Florida



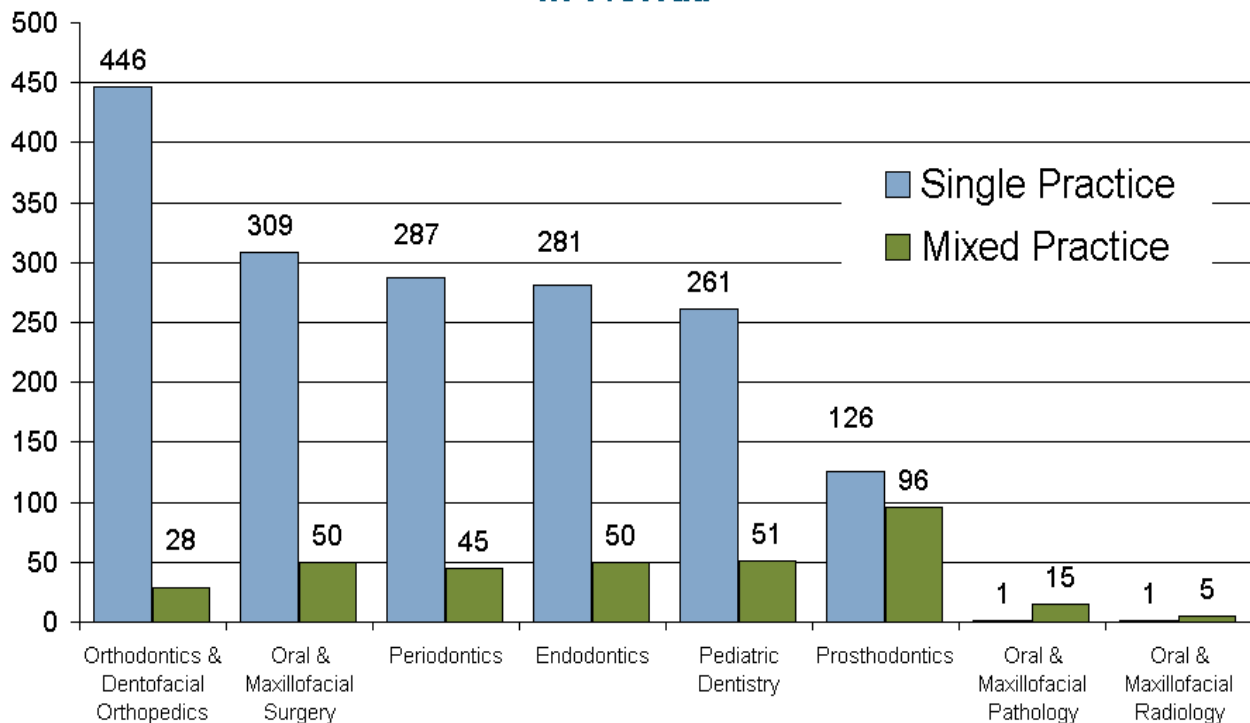
Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Figure 3.2 displays the frequency of respondents practicing in Florida who specialize in a specific area or areas of dentistry. The blue columns show counts of respondents whose practice involves only a single specialty. The green columns show counts of respondents who practice a specialty in combination with another specialty or specialties, a specialty in combination with general dentistry, or a specialty in combination with public health. Counts of mixed practices are not unduplicated; i.e., dentists in mixed practices are counted in each of their practice types. The distinction between single and mixed practice helps to distinguish full- versus part-time practice of a specialty, a distinction pertinent to workload issues.

Among respondents who practice a single specialty, orthodontics and dentofacial orthopedics is the most frequent. Oral and maxillofacial surgery, periodontics, endodontics, and pediatric dentistry follow in descending frequency, with respondent counts diminishing from 309 to 261. Prosthodontics has a single-practice respondent count less than half that of pediatric dentistry, although prosthodontics is the most frequent specialty among respondents with mixed practices. Oral and maxillofacial pathology and oral and maxillofacial radiology show negligible numbers of respondents and, where found, are almost always associated with a mixed practice.

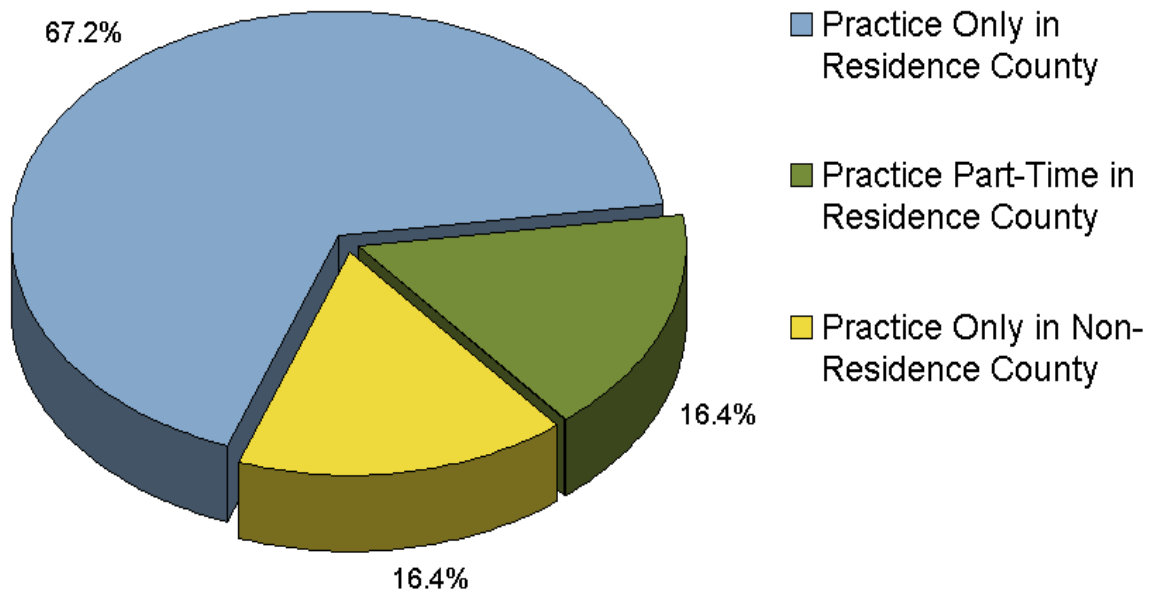
Figure 3.2. Specialties Among Respondents Practicing in Florida



Source: Workforce Dental Survey, 2009-10

The geographic distribution of dental practices is one factor impacting the availability of care. With regard to the location of their practice, more than two-thirds of respondents (67.2%) who currently practice in Florida reside and work in the same county. The others are almost evenly split between those who practice part-time in the county of their residence and those who practice only in other counties. In all, nearly 84% of respondents practice full- or part-time in their residence county. Figure 3.3 illustrates this pattern.

Figure 3.3. Practice and Residence Locations Among Respondents Who Currently Practice in Florida

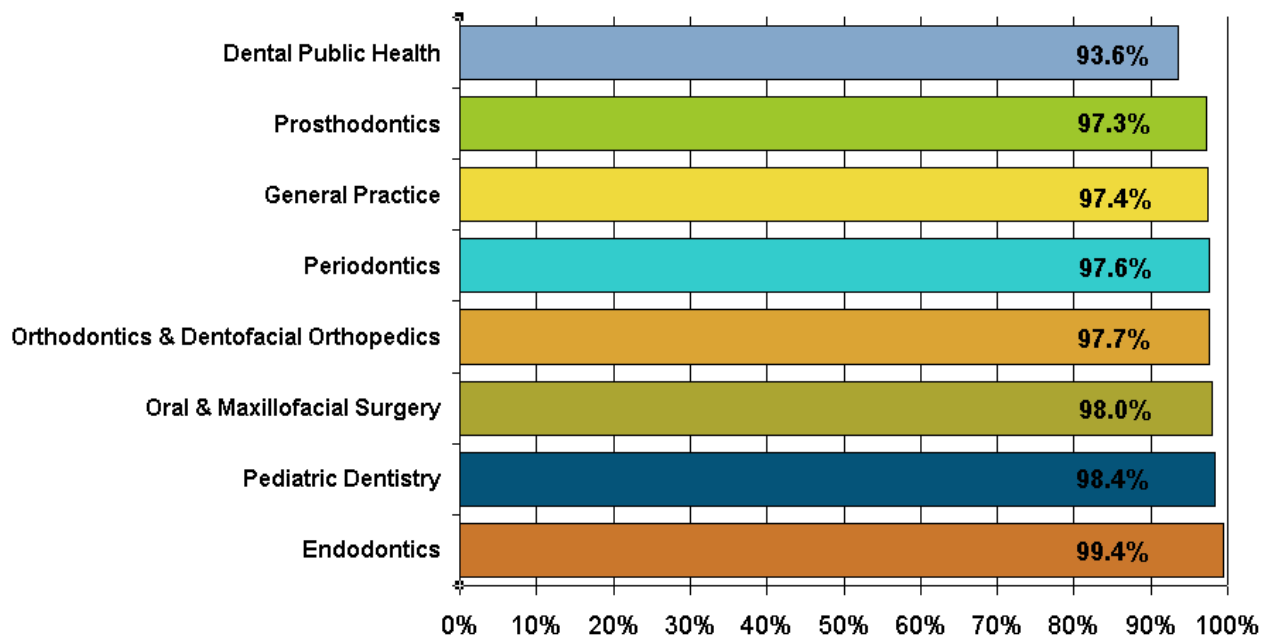


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Another factor impacting the availability of care is whether a practice accepts new patients. Figure 3.4 shows that practices of the vast majority of survey respondents currently accept new patients, irrespective of practice type. For general practice and all of the specializations, 97% or more of respondents affirm current acceptance of new patients. The lowest rate (93.6%) belongs to public health practices, possibly indicating higher demand relative to supply in this area of service.

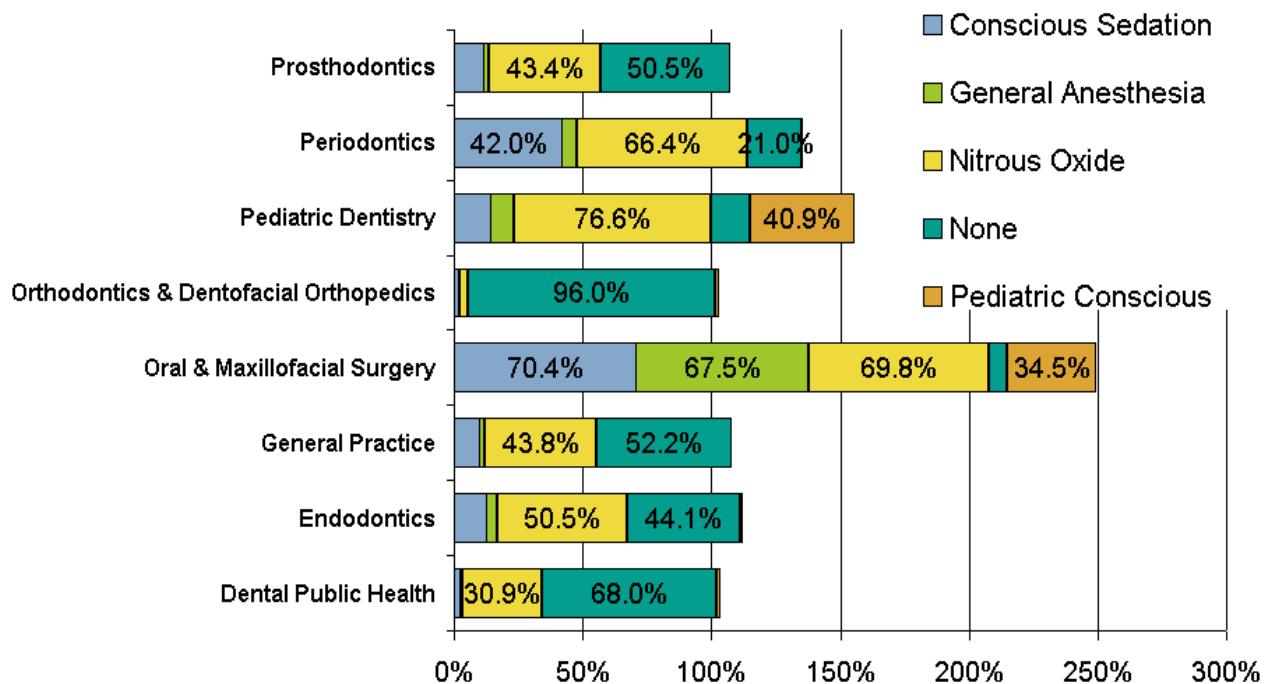
Figure 3.4. Percent of Respondents Practicing in Florida Who Currently Accept New Patients, by Practice Type



Source: Workforce Dental Survey, 2009-10

Practice type is strongly related to the use of sedation or anesthesia other than local anesthesia. Figure 3.5 shows the breakout of sedation and anesthesia available to patients by practice type as reported by survey respondents who practice in Florida. Combined percentages in each practice type exceed 100 as the result of multiple types of sedation or anesthesia reported. Use of multiple types of anesthesia or sedation is highest in oral and maxillofacial surgery, followed by pediatric dentistry and periodontics. In all practice types except oral and maxillofacial surgery, nitrous oxide inhalation analgesia is the most commonly reported anesthesia or sedation. Use of local anesthesia was not questioned in the survey.

Figure 3.5. Percent of Respondents Practicing in Florida Who Use Anesthesia or Sedation, by Practice Type



Note: Percentages less than 20% are not labeled in the figure.

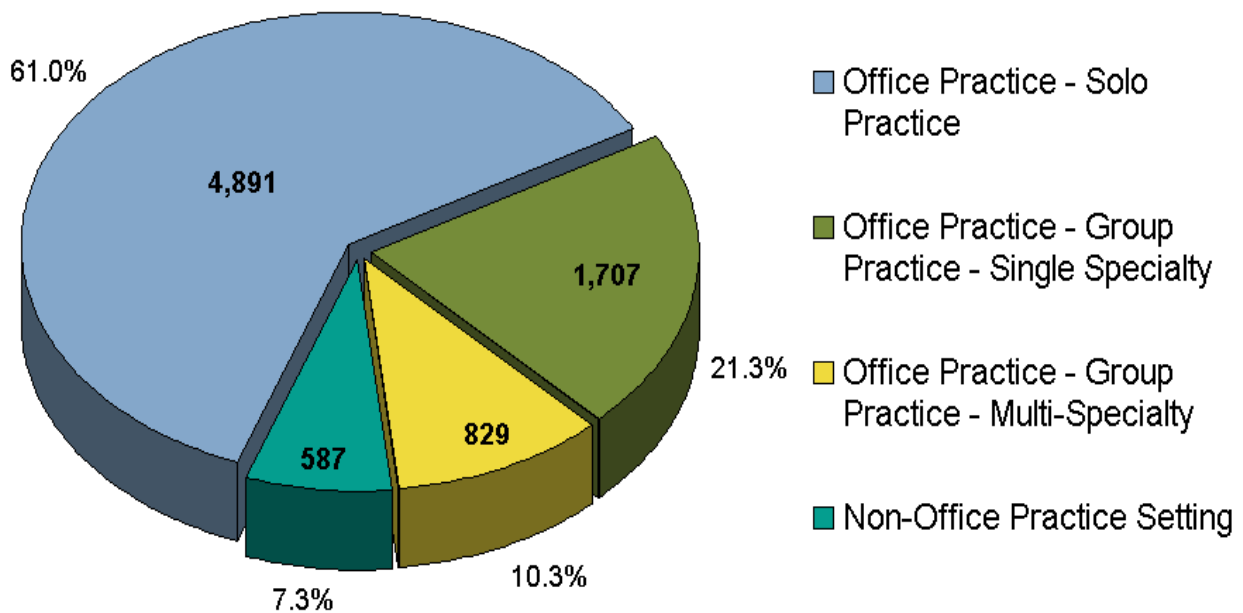
Source: Workforce Dental Survey, 2009-10

For many of the practice types, use or non-use of anesthesia or sedation is warranted by the procedures or types of procedures performed. Thus, orthodontics and dentofacial orthopedics had the highest rate of not offering sedation or anesthesia (96.0%), and oral and maxillofacial surgery had the lowest (7.1%). In practice types where procedures are not as clearly specialized—general practice, public health practice, and pediatric practice—the available use of sedation or anesthesia may reflect the scope of procedures offered or the ability of the practice to accommodate different needs of patients. Dental public health practices, with the second highest rate for not offering

sedation or anesthesia (68.0%), typically may have less range in services offered or less capacity for handling diverse patients' needs than general practice, where the rate of not offering sedation or anesthesia (52.2%) is considerably lower. Similarly, comparison of general practice with pediatric dentistry regarding the use of sedation or anesthesia reveals far greater range for pediatric practice in meeting children's dental needs.

An overwhelming majority of respondents (92.7%) who currently practice in Florida practice in an office setting. Most frequently, the office is a solo practice. Nearly a third of respondents (31.6%) belong to a group practice. Respondents who practice in non-office settings (7.3%) generally practice in government-run or government-supported settings. Figure 3.6 displays the distribution of practice settings among survey respondents.

Figure 3.6. Primary Practice Setting among Respondents Who Currently Practice in Florida

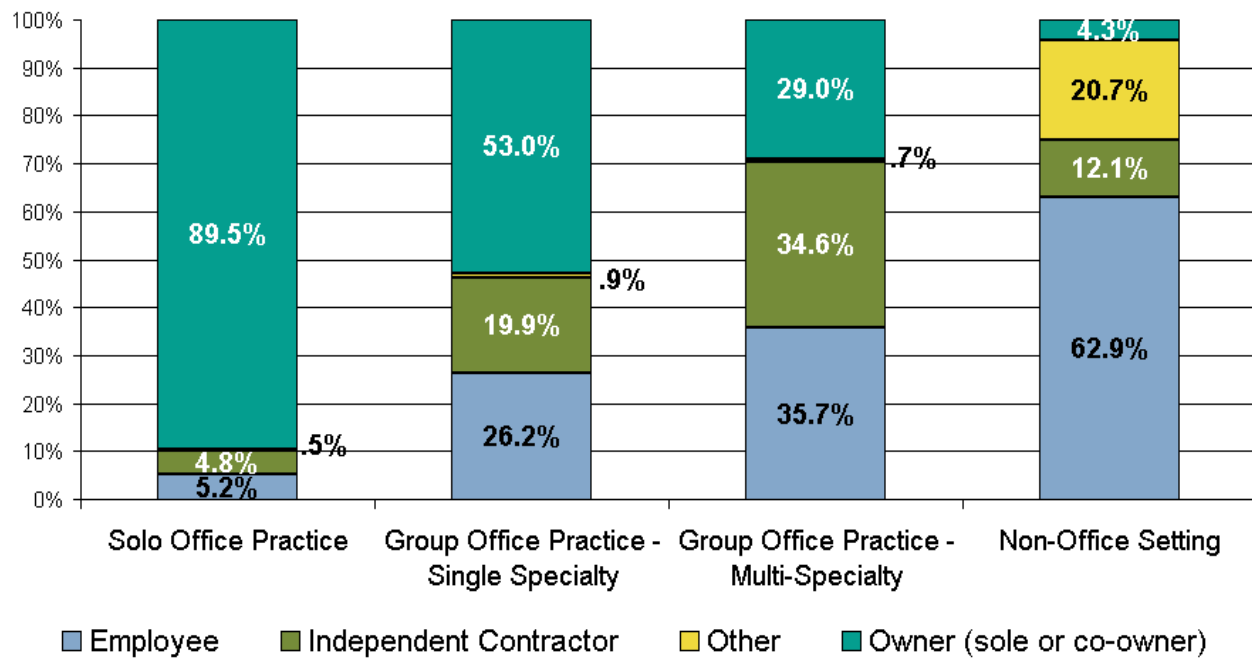


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Further analysis of practice settings reveals distinct patterns in the relationship of respondents practicing in Florida to their specific practice arrangements, as illustrated in Figure 3.7. Nearly 90% of respondents who work in a solo practice setting are practice owners. Ownership declines to 53.0% among respondents in group practices with a single specialty, 29.0% among respondents in a multi-specialty office setting, and only 4.3% among respondents in non-office settings. Respondents work as an independent contractor most frequently in multi-specialty office settings (34.6%) and single-specialty office settings (19.9%). Among respondents practicing in non-office settings, 62.9% are employees, and three-quarters are either employees or independent contractors. Across all practice settings, a large majority of respondents (82.1%) working as employees report employment by only one employer or in a single practice setting. Among independent contractors, this percentage drops to 58.1%.

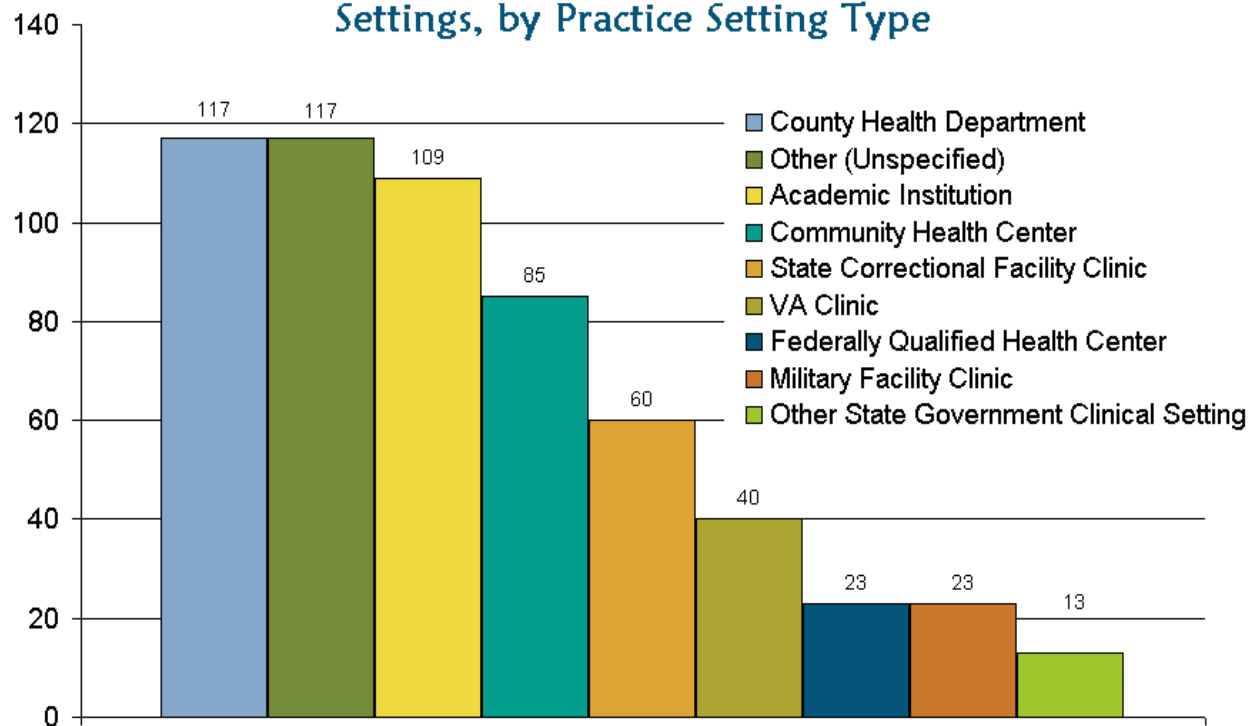
Figure 3.7. Relationship of Respondents Practicing in Florida to their Practice Arrangement, by Practice Setting



Source: Workforce Dental Survey, 2009-10

Only 7.3% of respondents currently practicing in Florida practice in non-office settings (see Figure 3.6). Figure 3.8 breaks out these respondents by specific practice setting, with respondent counts provided for each setting. County health departments and an unspecified “other” category lead in frequency, with 117 respondents each. Academic institutions (109) and community health centers (85) follow. Five other setting types each have 60 or fewer respondents. In general, non-office settings are either run or supported by government. Three of the settings—state correctional facility clinic, V.A. clinic, and military facility clinic—are intended for specific populations not determined by income level. With the exception of the unspecified other setting type, the other five settings are intended to serve lower income populations. These settings—county health departments, academic institutions, community health centers, federally qualified health centers, and other state government clinical settings—constitute “safety net” providers for individuals who might otherwise lack access to dental care.

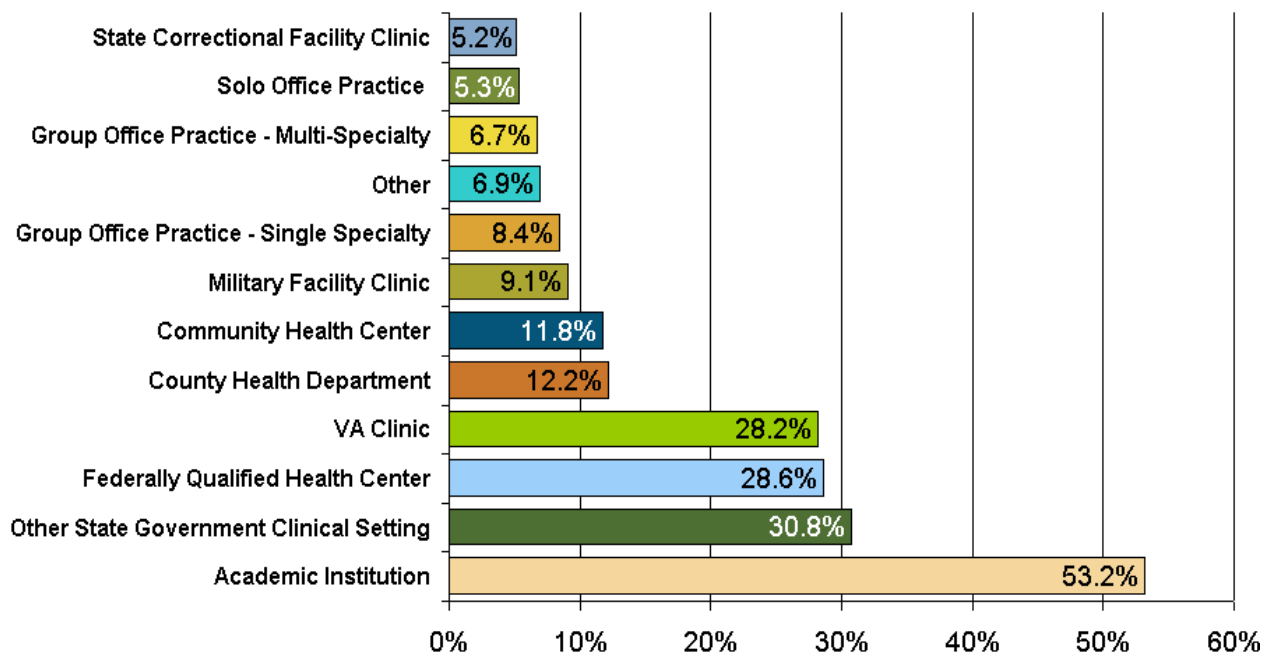
Figure 3.8. Respondents Practicing in Non-Office Settings, by Practice Setting Type



Source: Workforce Dental Survey, 2009-10

An interesting aspect of safety net providers is the frequency with which their dentists hold an academic appointment in addition to, or in conjunction with, clinical practice, as compared with non-safety net providers. The total number of survey respondents who have an academic appointment is small (n = 570, or 7.0% of respondents practicing in Florida), but their relative distribution by practice setting shows marked differences. Figure 3.9 illustrates these differences. Among the six settings having more than 10% of respondents with an academic affiliation, five are safety net providers. V.A. clinics are the sole exception. Respondents working in office settings infrequently report academic affiliation.

Figure 3.9. Percent of Respondents Who Hold an Academic Appointment, by Practice Setting



Source: Workforce Dental Survey, 2009-10

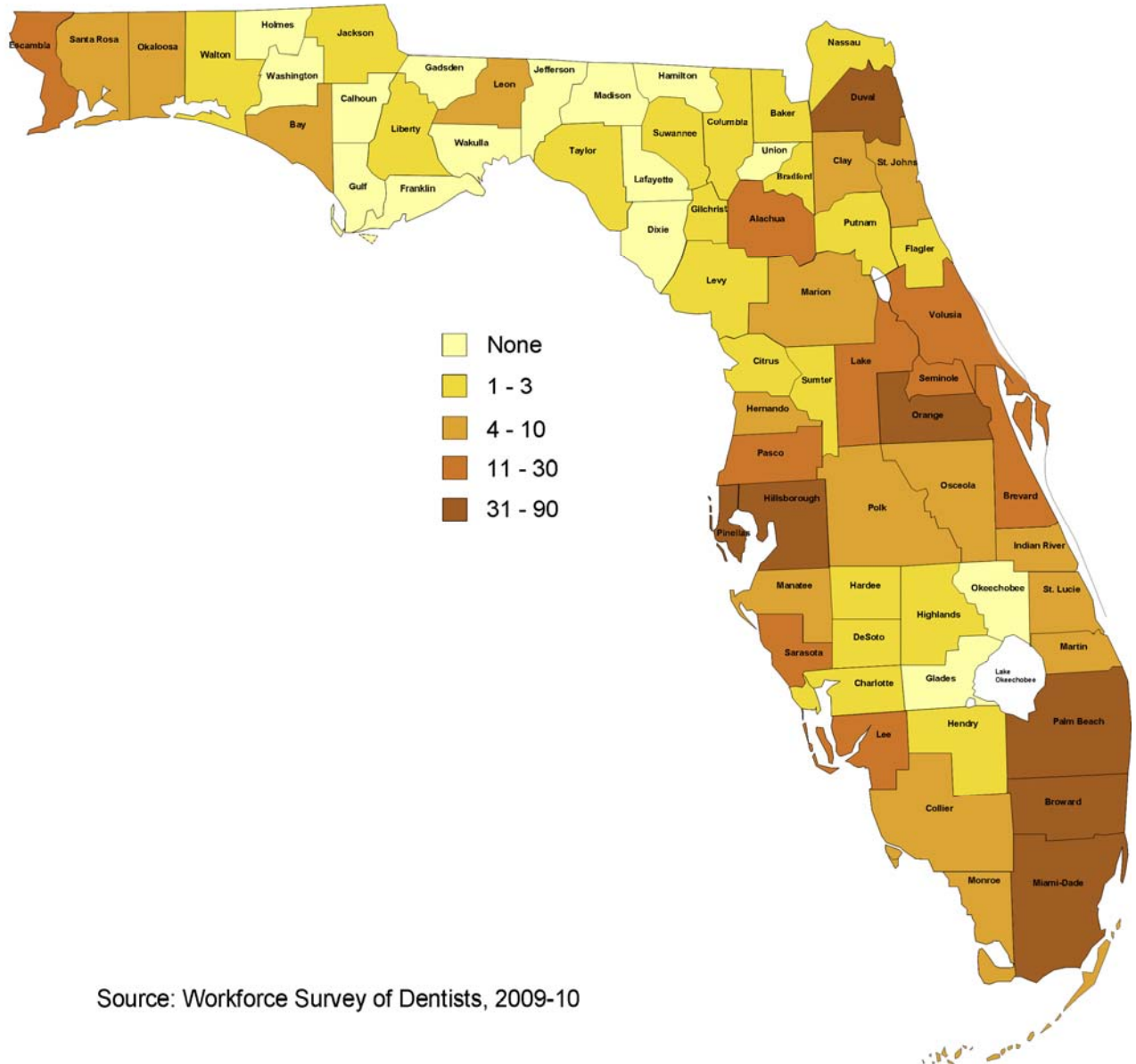
SECTION 3a: Dentists Practicing in Florida – Practice Characteristics by County

Summary: There are few available specialists in many central Panhandle counties of Florida.

The geographic distribution of dental specialists in Florida has an important bearing on the availability of specialty care. Figures 3a.1 – 3a.6 display the number of specialists by county in a series of Florida maps, each devoted to a single specialty. Dentists with more than one specialization are counted separately for each. Practitioner counts do not include survey non-respondents (n = 1,272) or respondents who did not answer the survey questions related to active Florida practice, specialization, or county of practice (n = 480). Applying to this group the same rates of Florida practice and specialization found among survey respondents produces an estimate of over 300 specialists not included in Figures 3a.1 – 3a.6.

The pattern common to all of the maps in Figures 3a.1 – 3a.6 is the lack of available specialists in many central Panhandle counties of Florida. This lack may mean the unavailability of services within a county or even within an adjacent county. For some specializations, particularly, periodontics and endodontics, the absence of specialists extends well into the western Panhandle. Residents of Panhandle counties who require the services of a specialist may face considerable travel distance. Generally, concentrations of dental specialists tend to follow the geographic concentrations of the Florida population.

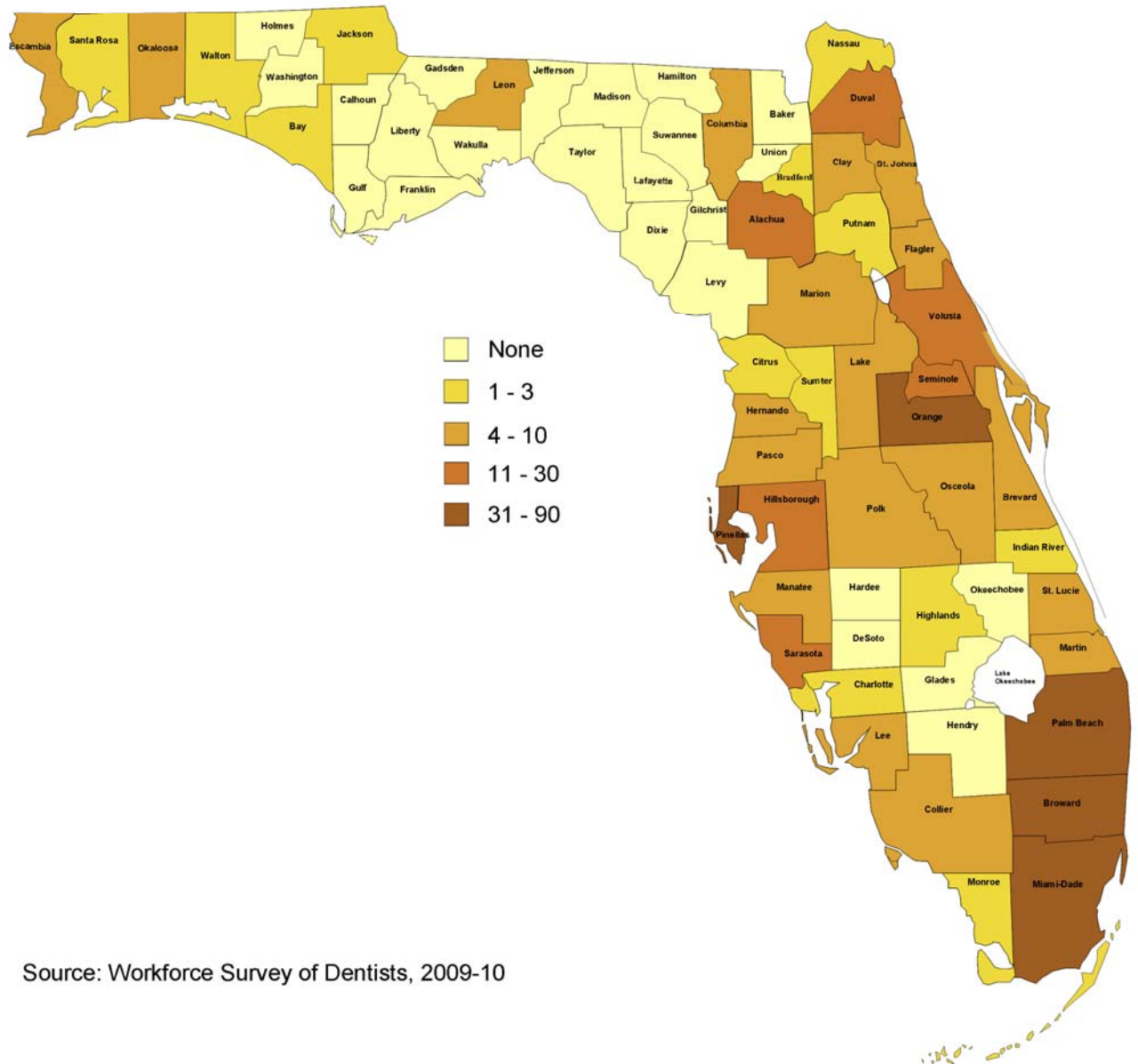
Figure 3a.1. Number of Practicing Specialists by County:
Orthodontics and Dentofacial Orthopedics



Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

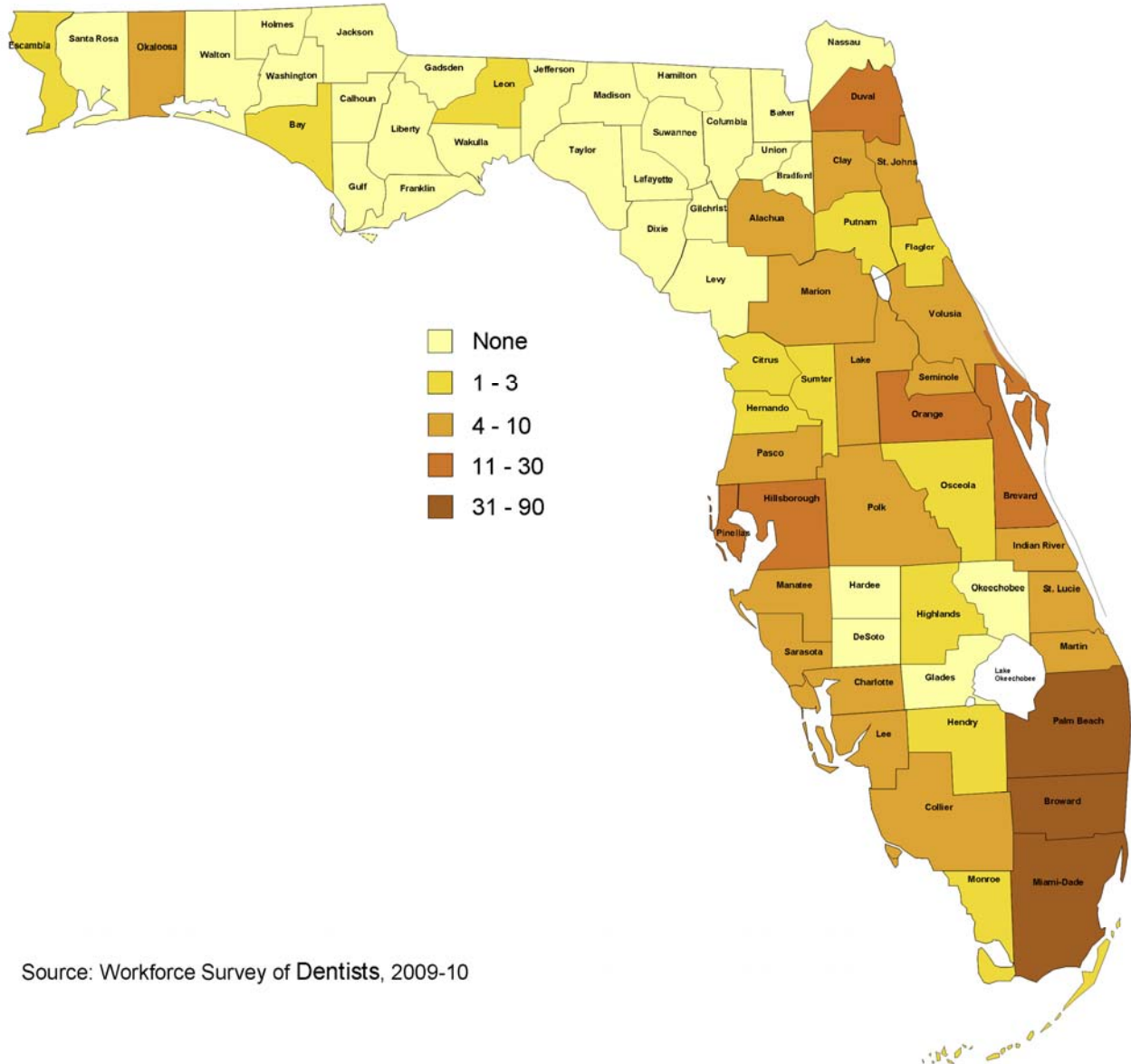
Figure 3a.2. Number of Practicing Specialists by County:
Oral and Maxillofacial Surgery



Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

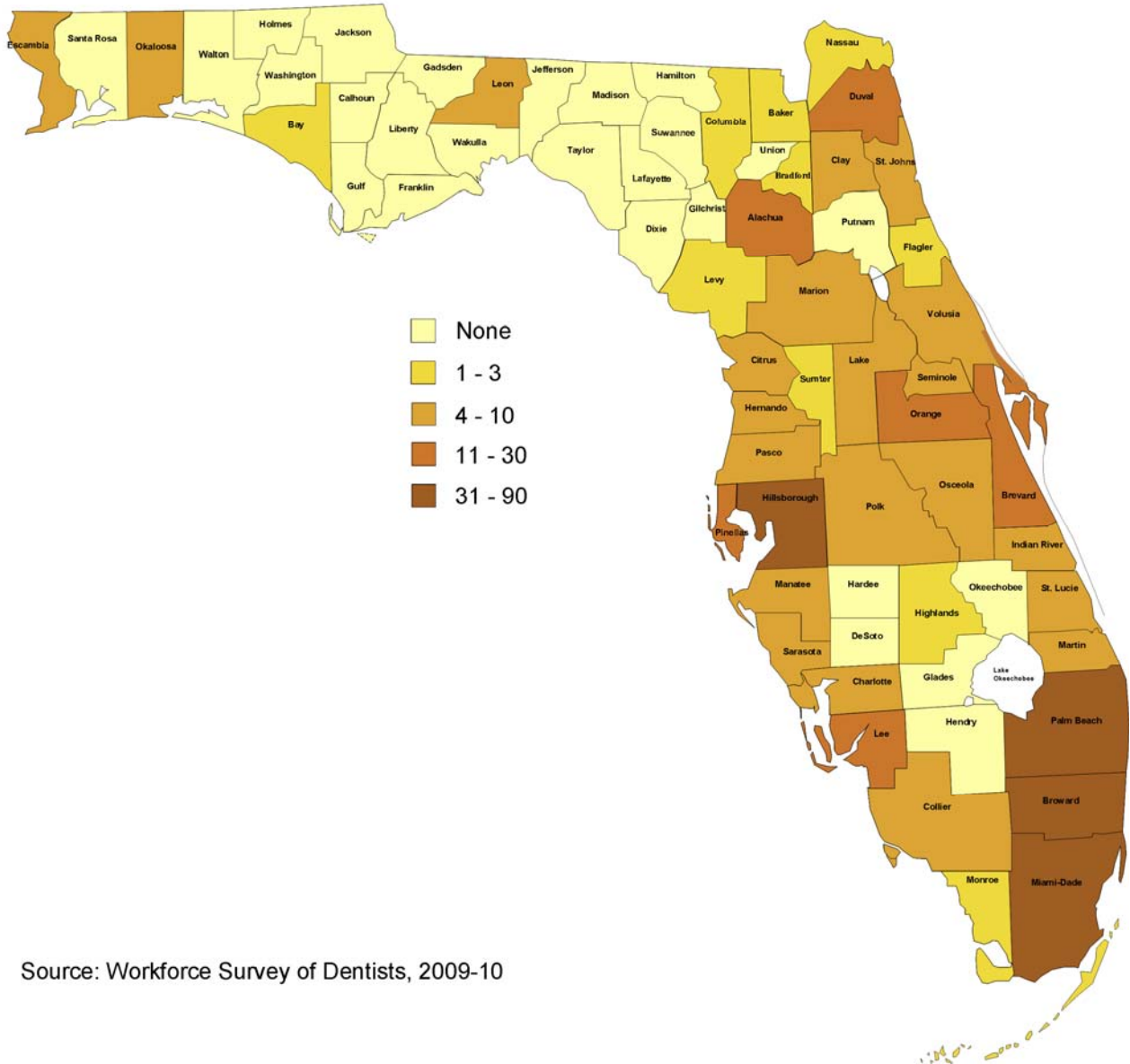
Figure 3a.3. Number of Practicing Specialists by County:
Periodontics



Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

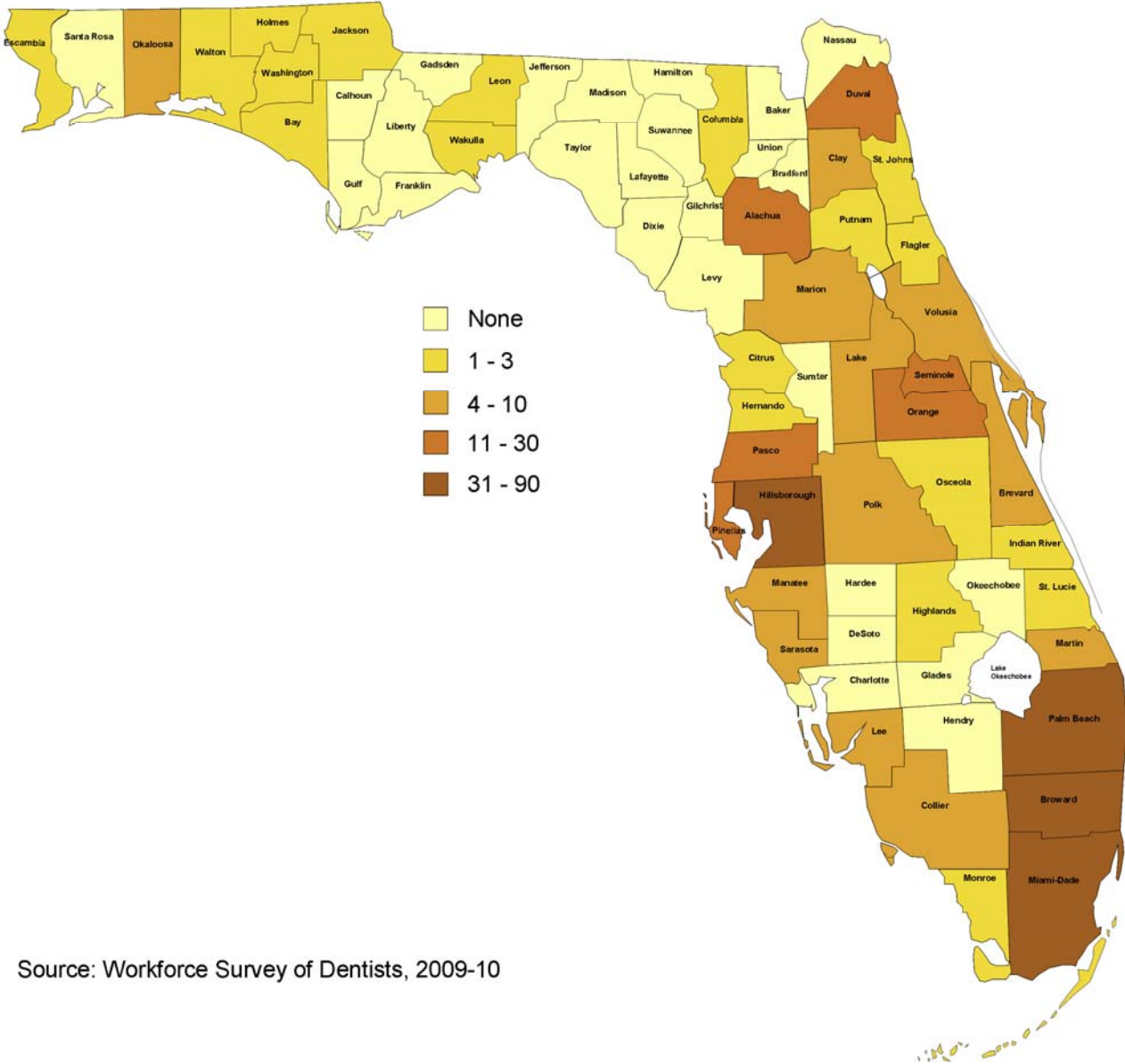
Figure 3a.4. Number of Practicing Specialists by County:
Endodontics



Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

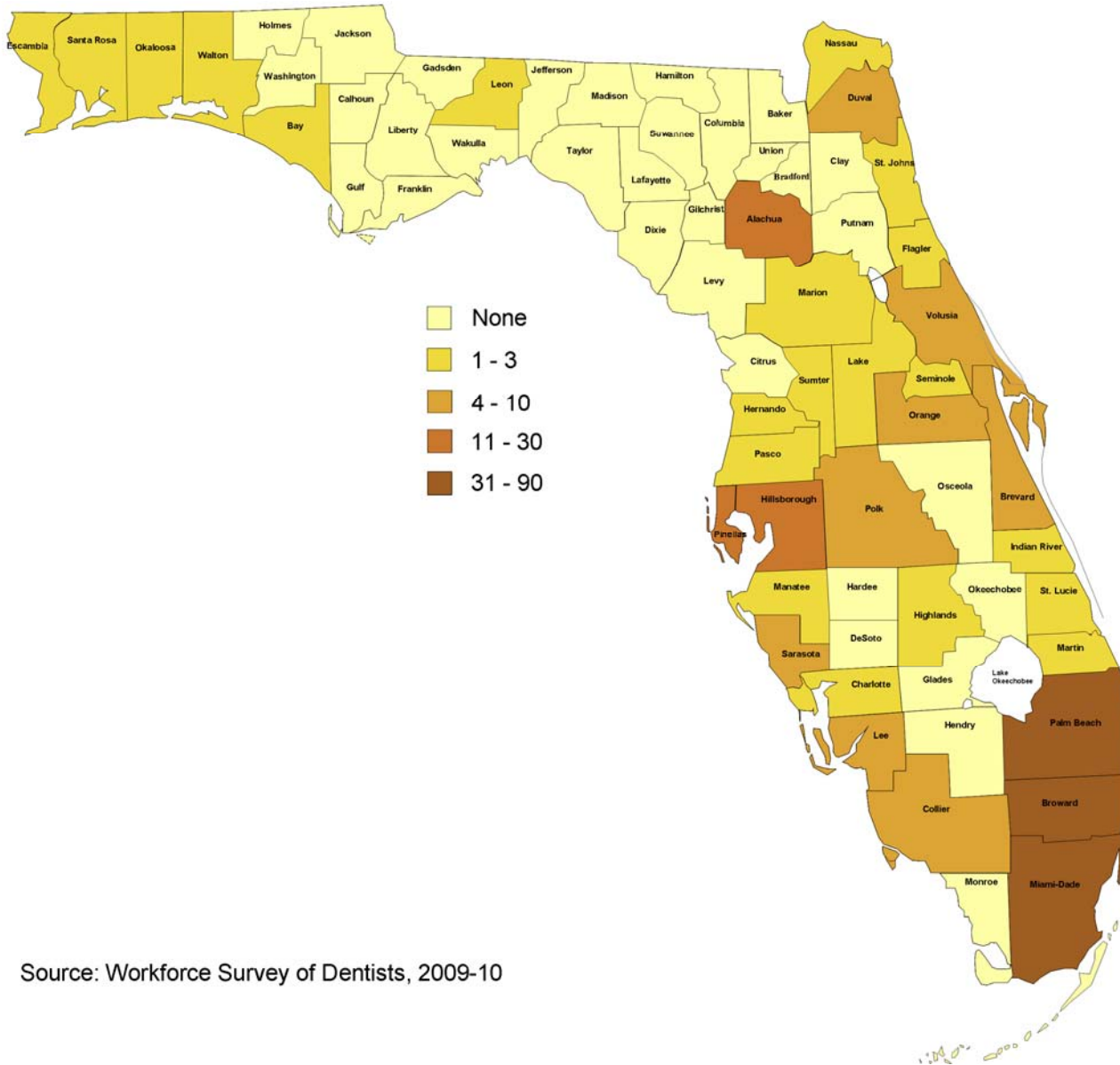
Figure 3a.5. Number of Practicing Specialists by County:
Pediatric Dentistry



Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Figure 3a.6. Number of Practicing Specialists by County:
Prosthodontics



Source: Workforce Survey of Dentists, 2009-10

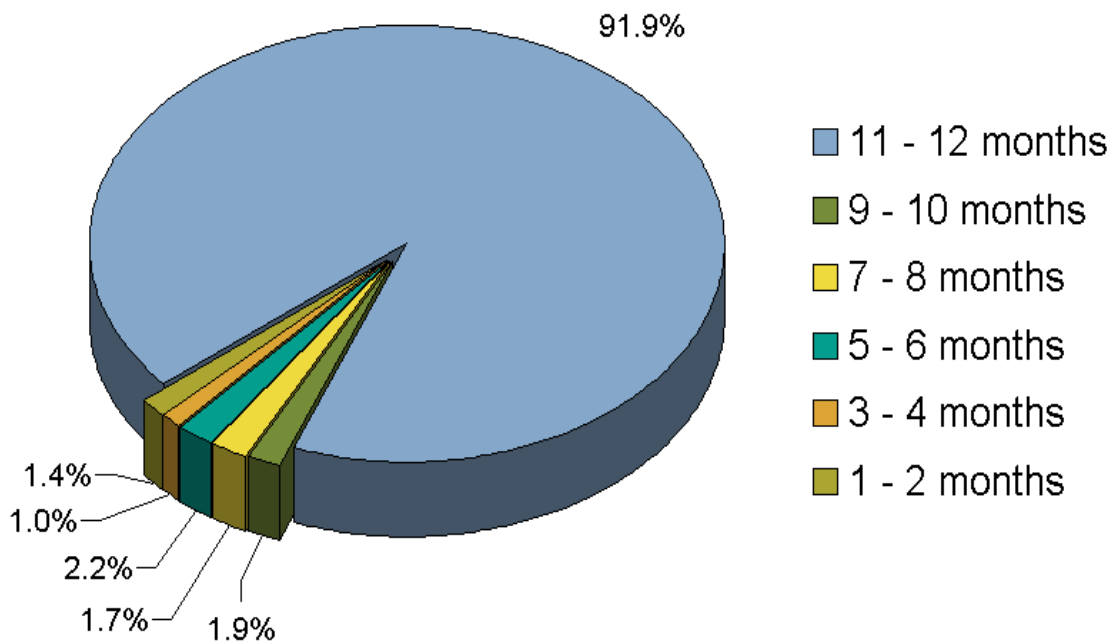
Note: Non-respondents to the workforce survey are not shown in the map.

SECTION 4: Dentists Practicing in Florida – Productivity

Summary: Overall, more than 90% of respondents who practice in Florida worked 11-12 months in the previous year, and 78% practiced more than 30 hours per week.

More than 90% of respondents who practice in Florida worked 11-12 months in the previous year (Fig. 4.1).

**Figure 4.1. Number of Practice Months in the Past Year
Among Respondents Practicing in Florida**

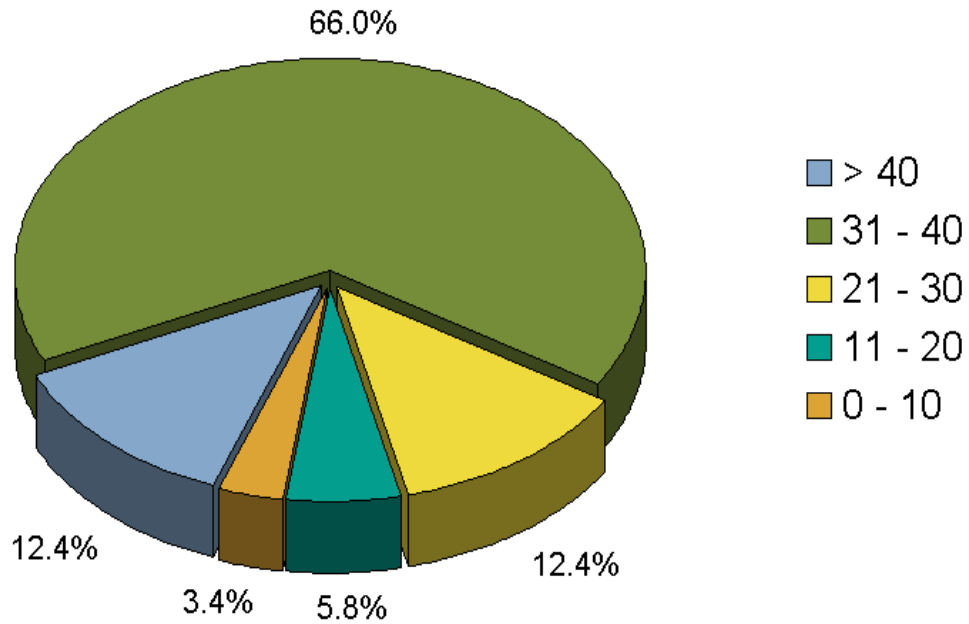


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Nearly two-thirds of survey respondents work 31 – 40 hours weekly, while an additional 12.4% exceed 40 hours (Fig 4.2). Approximately 20% practice dentistry part-time (<31 hours per week). Fewer than 10% of respondents work 20 hours per week or less.

Figure 4.2. Distribution of Respondents Practicing in Florida by Hours of Practice per Week

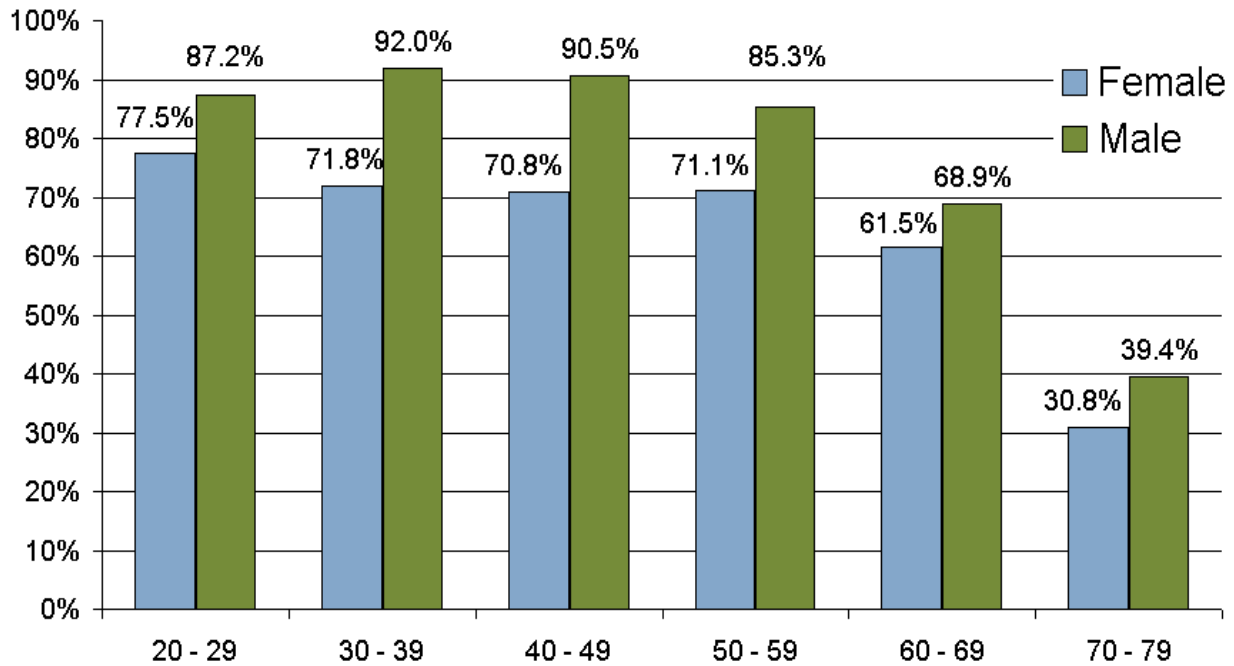


Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Full-time practice (≥ 31 hours per week) varies by gender and age. Male respondents are more likely to work full-time than female respondents for all age groups (Fig. 4.3). However, the gender difference is more pronounced among respondents 30-49 years of age, differing by roughly 20 percentage points. For both men and women, full-time practice declines sharply after age 59.

Figure 4.3. Percent of Respondents Practicing in Florida Who Work Full-Time*, by Gender and Age Group

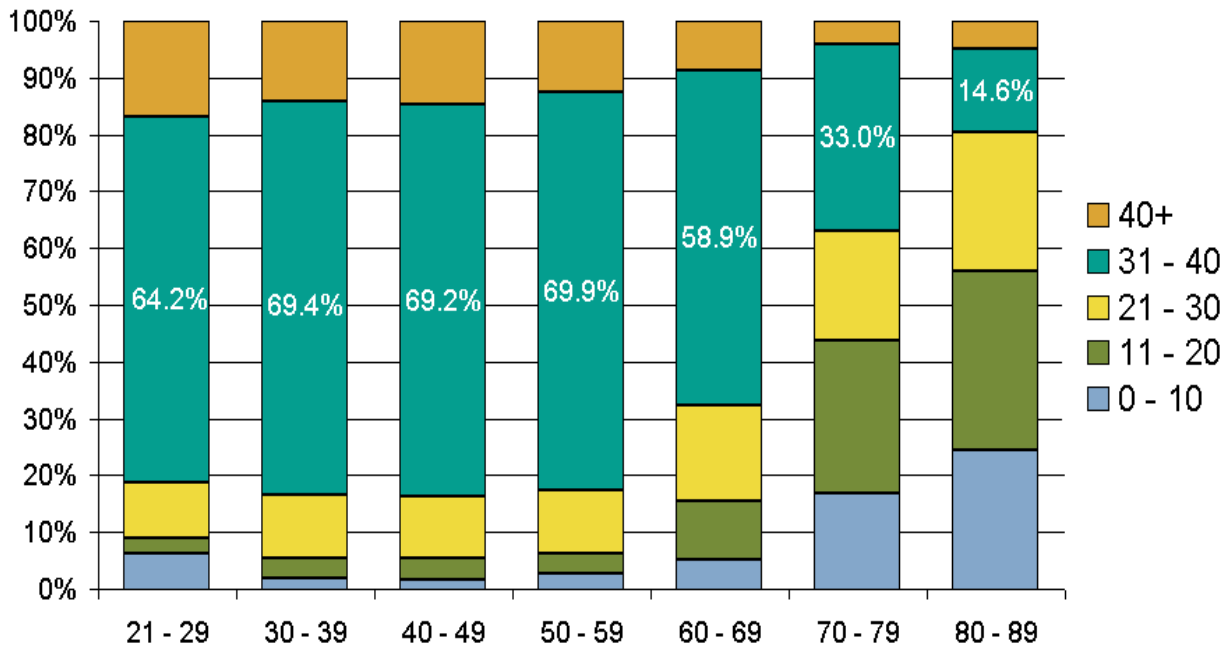


*Full-time work is defined as 31 or more hours per week.

Source: Workforce Dental Survey, 2009-10

Figure 4.4 provides further detail on the age-related reduction in practice time. From age 20 through 59, slightly more than 80% worked full-time (≥ 31 hours per week). The percentage of respondents who work full-time steadily declines as the age group increases. Among older respondents, as full-time work decreases, part-time work increases.

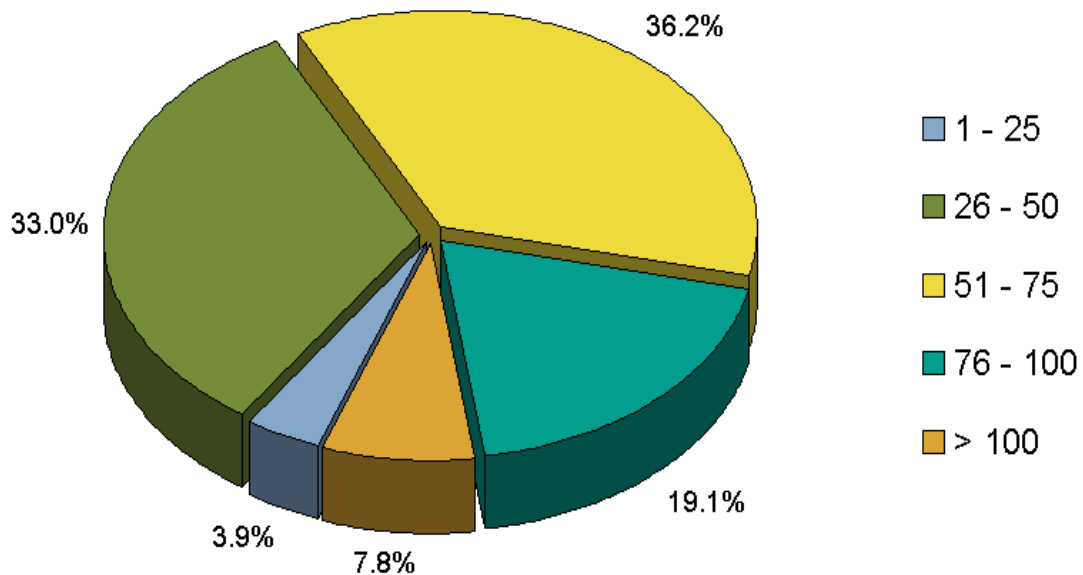
Figure 4.4. Hours Worked per Week by Respondents Practicing in Florida, by Age Group



Source: Workforce Dental Survey, 2009-10

In Figure 4.5, productivity as measured by the average number of patients seen per week was presented for respondents who work full-time in general practice or public health practice (n = 7,405). Nearly two-thirds (63%) of respondents see more than 50 patients per week. Approximately 25% see more than 75 patients.

Figure 4.5. Average Number of Patients per Week among Florida Dentists Who Work Full-Time in General Practice or Public Health Practice



Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

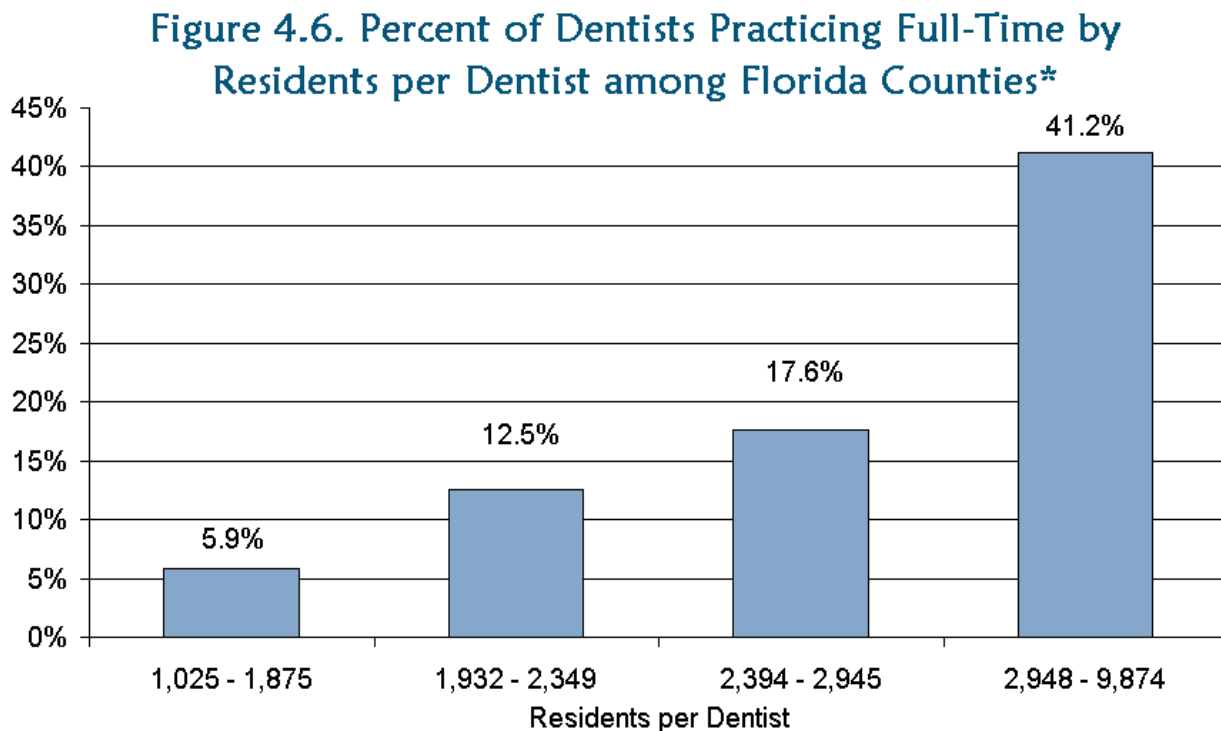
On average, the maximum number of patients seen per week by respondents working full-time in a general or dental public health practice is 73. The average number drops to 67 patients after including part-time general and public health practitioners. The average annual maximum number of patient visits per dentist, based on a 48-week work year, would be 3,216. Multiplying this annual number by the estimated number of dentists working in general or dental public health practices results in a total of 23,814,480 patient visits. This represents the maximum annual productivity for Florida's non-specialized dentistry, given the size and productivity of the current workforce. With respect to the state's total population, the maximum patient productivity translates into an average of 1.3 dental visits per resident per year.

Not every Floridian chooses to visit a dentist even once a year. According to the 2008 Florida Behavioral Risk Factor Surveillance System (BRFSS) Report, about two-thirds (67.3%) of Floridians visited a dentist or dental clinic within the past

year. If one-third of Floridians elect not see a dentist annually, the maximum average number of dental visit “slots” per remaining resident rises to roughly two per year at current productivity levels. A statewide maximum average productivity of 1.3 dental visits per resident per year does not convey the considerable variation in the frequency with which individual residents actually seek or use dental services. Less use by some residents allows more use by others. A single estimated statewide average may conceal population or geographic disparities associated with access to oral healthcare. An investigation of these potential disparities is needed.

The estimate of current maximum productivity does not represent the maximum capacity of the workforce. More than 97% of respondents in general practice report current acceptance of new patients. The percentage is the same or higher in the specialty practices, and only slightly lower (almost 94%) in dental public health practices. The widespread willingness to accept new patients strongly suggests unused productive capacity.

A second factor suggestive of unused capacity is the number of dentists practicing less than full time. The workforce survey did not question the motivation for part-time practice. Of particular interest is whether patient demand has a bearing on practice hours. Figure 4.6 illustrates the percent of dentists who practice full time, broken out by ranges of resident-to-dentist ratios in Florida’s counties. Each range represents about 25% of Florida’s counties (quartiles). The figure shows that the percent of dentists practicing full time steadily increases with the increase in resident-to-dentist ratios. Patient volume may have some role in driving practice hours, though other factors, such as gender, are also involved. Further research is needed to better explain variations in practice time.



*Dentists practicing in more than one county are not included. Range groups are based on county quartile rankings in the number of residents per dentist.

Source: Workforce Dental Survey, 2009-10; DOH Licensure Data; Florida Legislature, Office of Demographic and Economic Research

A third factor related to unused productive capacity is the use of auxiliaries—dental assistants and hygienists. The workforce survey did not inquire about such use. However, auxiliaries help boost productivity. Their expanded use by dentists would raise present productivity with no required change in the number of dentists or the length of their work week.

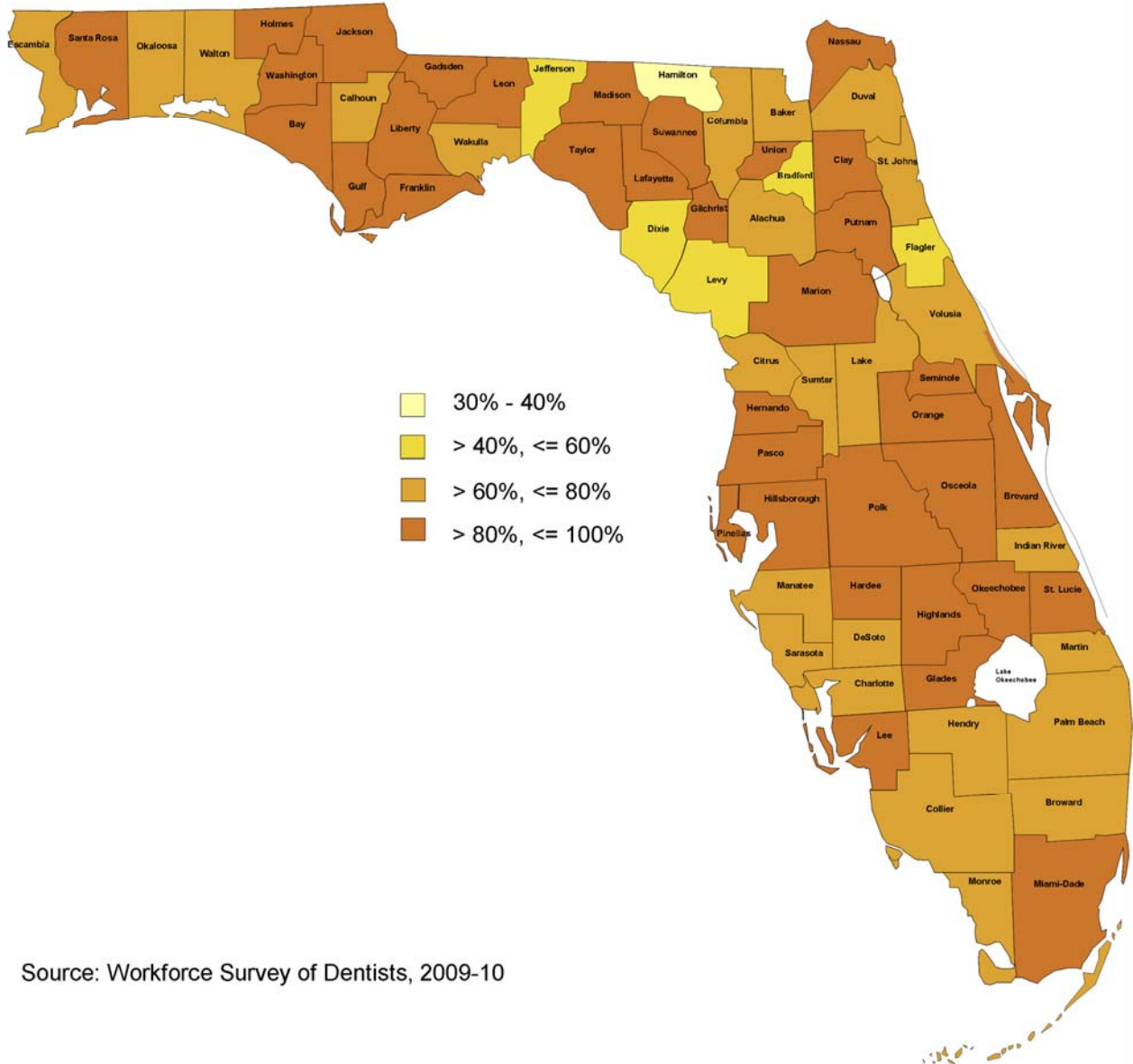
A final factor related to unused productive capacity may be comparatively minor, but worth noting. Among survey respondents holding an active Florida license but not practicing in the state, a small number (36, or 1.9%) reported that they were unable to find employment. Based on maximum annual productivity estimates for dentists practicing full time, these unemployed dentists potentially represent a loss of up to 116,000 patient encounters per year. Improvement in placement services and recruiting practices may help to reduce periods of unemployment among Florida's dentists. Better connecting dentists with employment opportunities may also serve to lure dentists with active Florida licenses not practicing in the state but reporting an intention for such practice.

SECTION 4a: Dentists Practicing in Florida – Productivity by County

Summary: For most counties in Florida, the majority of respondents practice full-time.

Figure 4a.1 displays the percent of survey respondents who practice full-time by Florida County. This figure does not include respondents who practice in more than one county. For most counties in the state, the majority of respondents practice full-time. Counties with higher percentages of full-time practitioners tend to cluster in central and north Florida. These counties typically have small populations served by a small number of dentists. Some north Florida counties with small populations and few practicing dentists have below-average rates of full-time practice. However, not every less populous county deviates from the statewide rate of 80%. For example, Wakulla and Baker Counties have small populations and few dentists, and their rates of full-time practice equal the statewide rate.

Figure 4a.1. Percent of Respondents Practicing Full-Time, by County

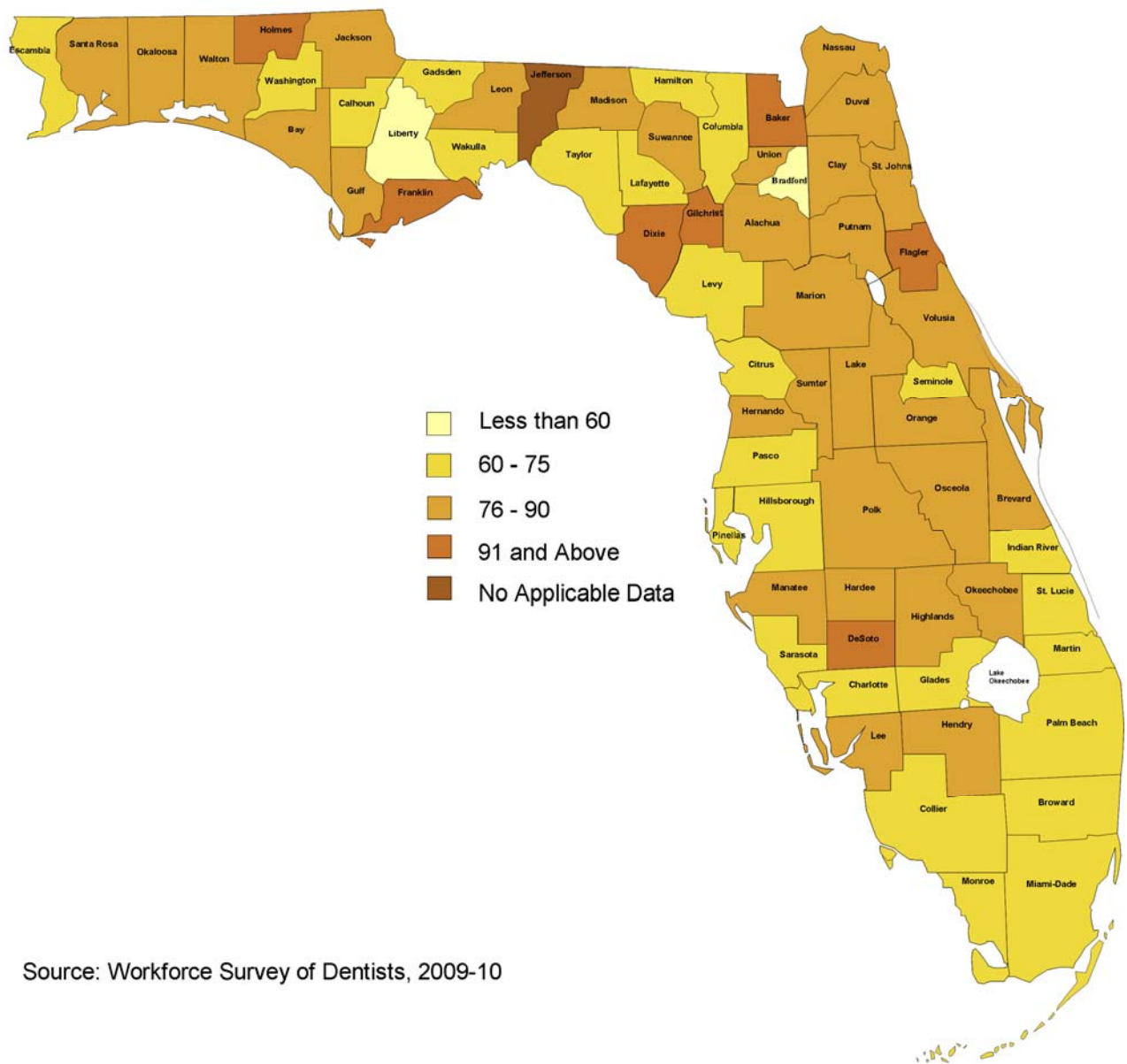


Source: Workforce Survey of Dentists, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

Figure 4a.2 shows, by county, the average maximum number of patients seen per week among respondents working full-time in general or dental public health practices. In the majority of Florida counties, the maximum workload reaches 60-90 patients per week. Higher average maximum numbers of patients seen per week are generally found in the less populous counties of north Florida. In the state's three most populous counties—Miami-Dade, Broward, and Palm Beach—the average maximum workload is lower than that found in most other Florida counties.

Figure 4a.2. Average Maximum Number of Patients per Week among Respondents Practicing Full-Time in General Practice



Source: Workforce Survey of Dentists, 2009-10

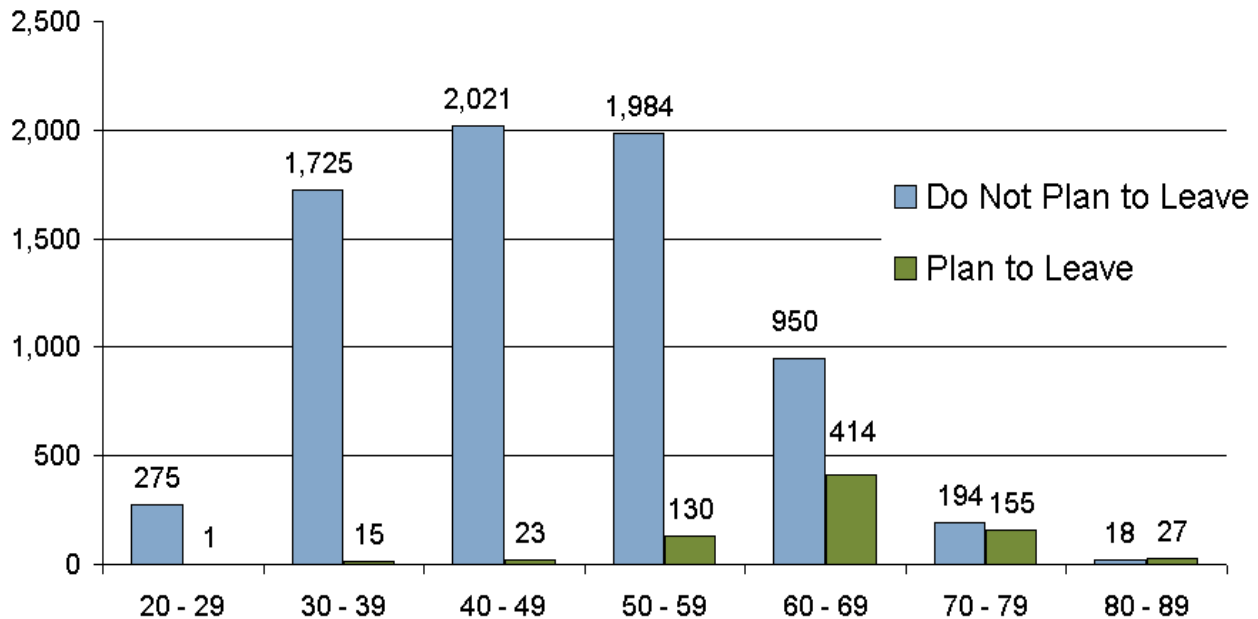
Note: Non-respondents to the workforce survey are not shown in the map.

SECTION 5: Dentists Practicing in Florida – Retention and Attrition

Summary: The majority of respondents do not plan to leave the profession within the next five years. By a large margin, additions projected for the workforce more than offset projected losses associated with aging.

The question of age is particularly important for anticipating reduction in the dental workforce associated with retirement. Figure 5.1 displays respondent counts by age group and plans to leave the profession within the next five years.

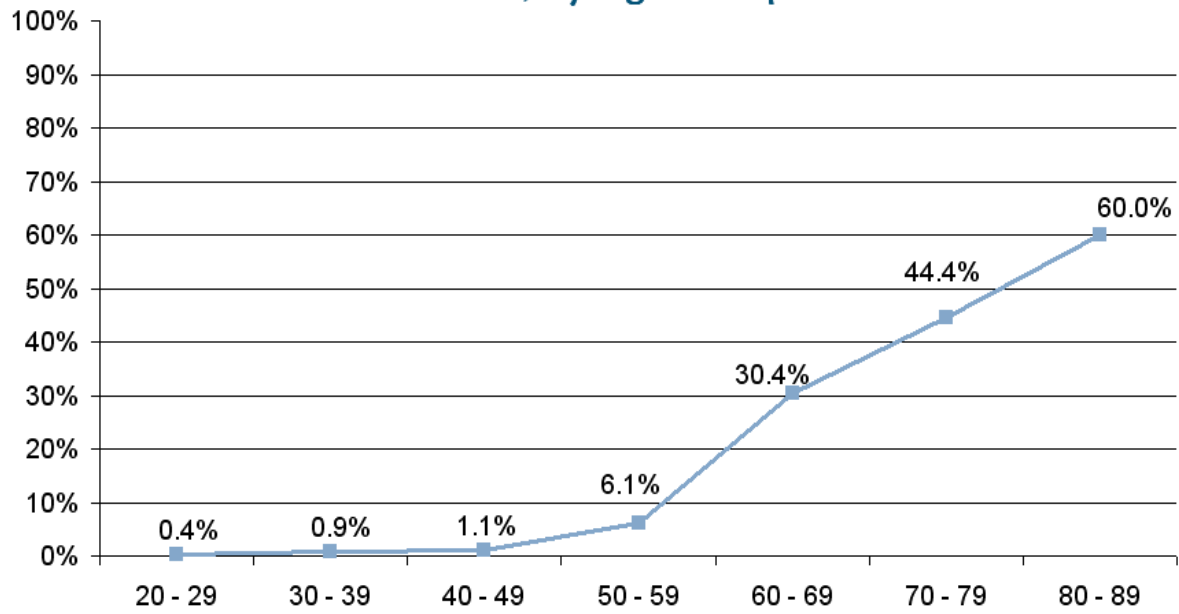
Figure 5.1. Distribution of Dentists Practicing in Florida Who Plan to Leave the Profession within Five Years, by Age Group



Source: Workforce Dental Survey, 2009-10

Figure 5.2 converts the counts of respondents with retirement plans into a percent of each age group, omitting respondents who did not answer the question. Plans to leave the profession are infrequent until age group 50 – 59, after which they rise rapidly. Still, less than a third of respondents 60 – 69 (30.4%) and half of respondents 70 – 79 (44.4%) have retirement planned within five years. Only in the age group 80 – 89 does the percent of respondents with retirement plans exceed 50 percent (60.0%). It should be noted that more than two-thirds (67.7%) of respondents who plan to retire within the next five years intend to maintain a limited license for volunteering. Respondents for the most part clearly intend to practice dentistry full- or part-time well beyond the usual age of retirement.

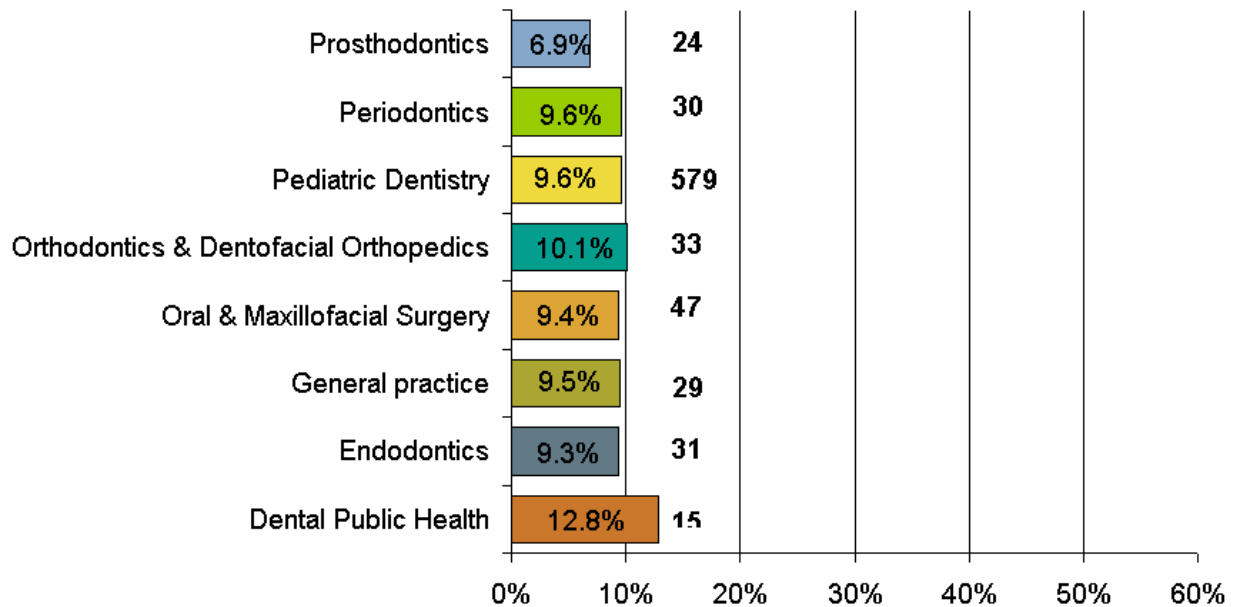
Figure 5.2. Percent of Respondents Practicing in Florida Who Have Plans to Leave the Profession within Five Years, by Age Group



Source: Workforce Dental Survey, 2009-10

The impact of reported plans for retirement within the next five years on practice types is illustrated in Figure 5.3. The figure provides both the percent and the number of practitioners reporting retirement plans. The impact of planned retirement is fairly constant across all practice types, typically involving 9 – 10% of respondents. Dental public health, at 12.8%, and prosthodontics, at 6.9%, are slightly higher and slightly lower, respectively, than the other practice types. For the practice types shown in Figure 5.3, the average age of the practitioner is typically 49 or 50. The sole exception is pediatric dentistry, where the average age is 45.

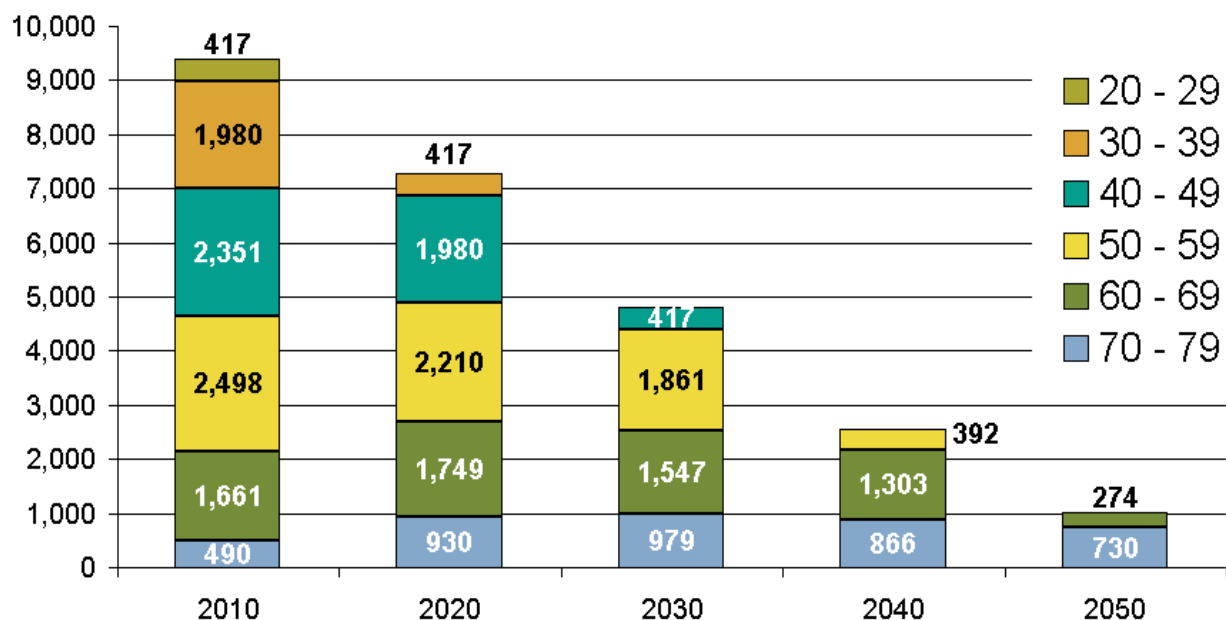
Figure 5.3. Percent and Number of Respondents Practicing in Florida Who Plan Retirement within Five Years, by Practice Type



Source: Workforce Dental Survey, 2009-10

Stability in the size of the workforce is important for continuity of current service levels. One factor that will inevitably shrink the workforce is the aging of today's practitioners. Projections of this factor for the next several decades are provided in Figure 5.4. The projections rest on a number of assumptions. Retirement from the profession is estimated at six percent among dentists in their fifties, 30 percent among dentists in their sixties, 44 percent among dentists in their seventies, and 100 percent among dentists 80 and older. Figure 5.4 provides age distribution "snapshots" at 10-year intervals of dentists currently practicing in Florida. The figure displays the projected size of each age group after attrition. Dentists currently in their twenties, for example, will be in their sixties in 2050, at which time their number is expected to be 274, down from the current 417. With each ensuing decade, the bottom-most age group falls off the figure. Among Florida's dentists practicing today, 1,004, or nearly 11 percent, are projected to be practicing in 2050. It is important to bear in mind that attrition resulting from aging is the only factor used in the projection. Moreover, dentists licensed in Florida but currently only intending to practice in the state are not included.

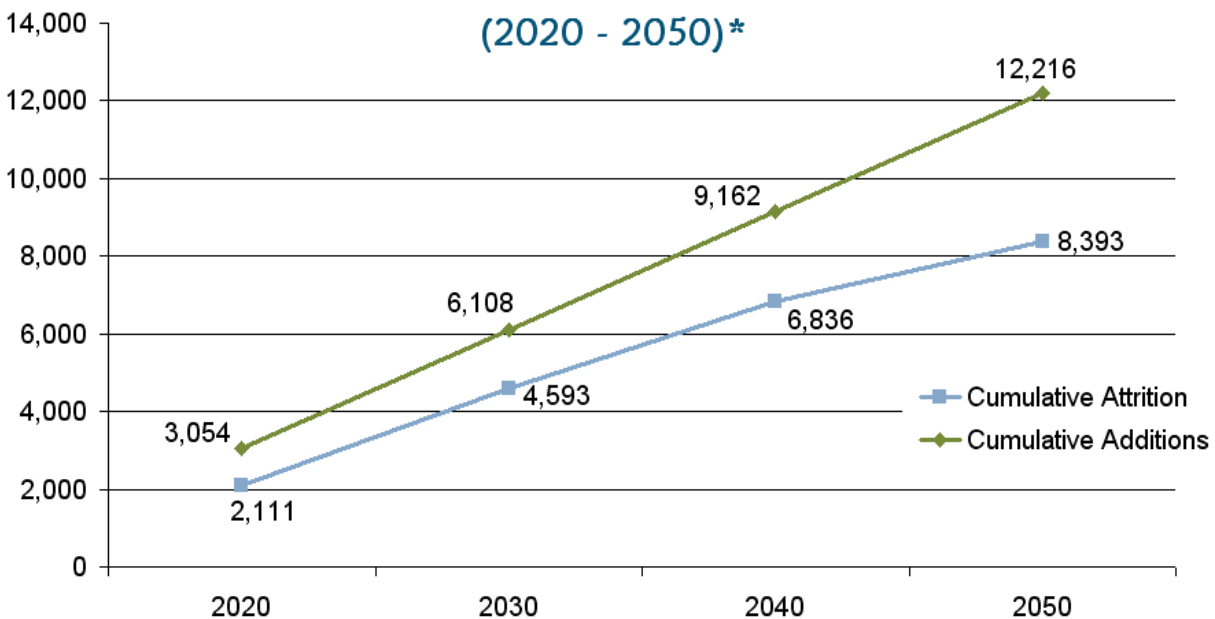
Figure 5.4. Projected Workforce Attrition Associated with the Aging of Dentists Currently Practicing in Florida



Source: Workforce Dental Survey, 2009-10, and DOH Licensure Data

With the certainty of steady decline in the size of today’s active workforce, the question of additions to the profession becomes critical. Will incoming new dentists offset the losses of the older dentists? Another projection is needed to provide an answer. Over the five-year period from 2005 through 2009, the Florida Department of Health licensed an average of 377 new dentists annually. This would equate to 3,770 over a decade. On the assumption that 81% of new dentists would actually practice in the state, the estimated addition to Florida’s workforce per decade would be 3,054. The cumulative impact of such growth, juxtaposed with the projected cumulative decline in the size of the current workforce, is displayed in Figure 5.5. The green line illustrates the cumulative addition of new dentists. The projection assumes negligible impact of any attrition among the new dentists. The blue line illustrates the cumulative loss of dentists due to retirement. By a large margin, additions projected for the workforce more than offset projected losses associated with aging. In short, current trends imply continued growth over the long term in the number of dentists practicing in Florida. Whether such growth is sufficient to keep pace with growth in Florida’s population and demand for dental care is a separate question. Furthermore, statewide growth of the workforce does not imply equal distribution of that growth for every area of Florida; retirement of dentists currently practicing may adversely impact some geographic areas. This prospect is further developed in the next section.

Figure 5.5. Projected Workforce Attrition Due to Retirement versus Additions of New Dentists (2020 - 2050)*



*Includes losses associated with the aging of dentists currently active in Florida and growth through the entry of new dentists into the workforce.

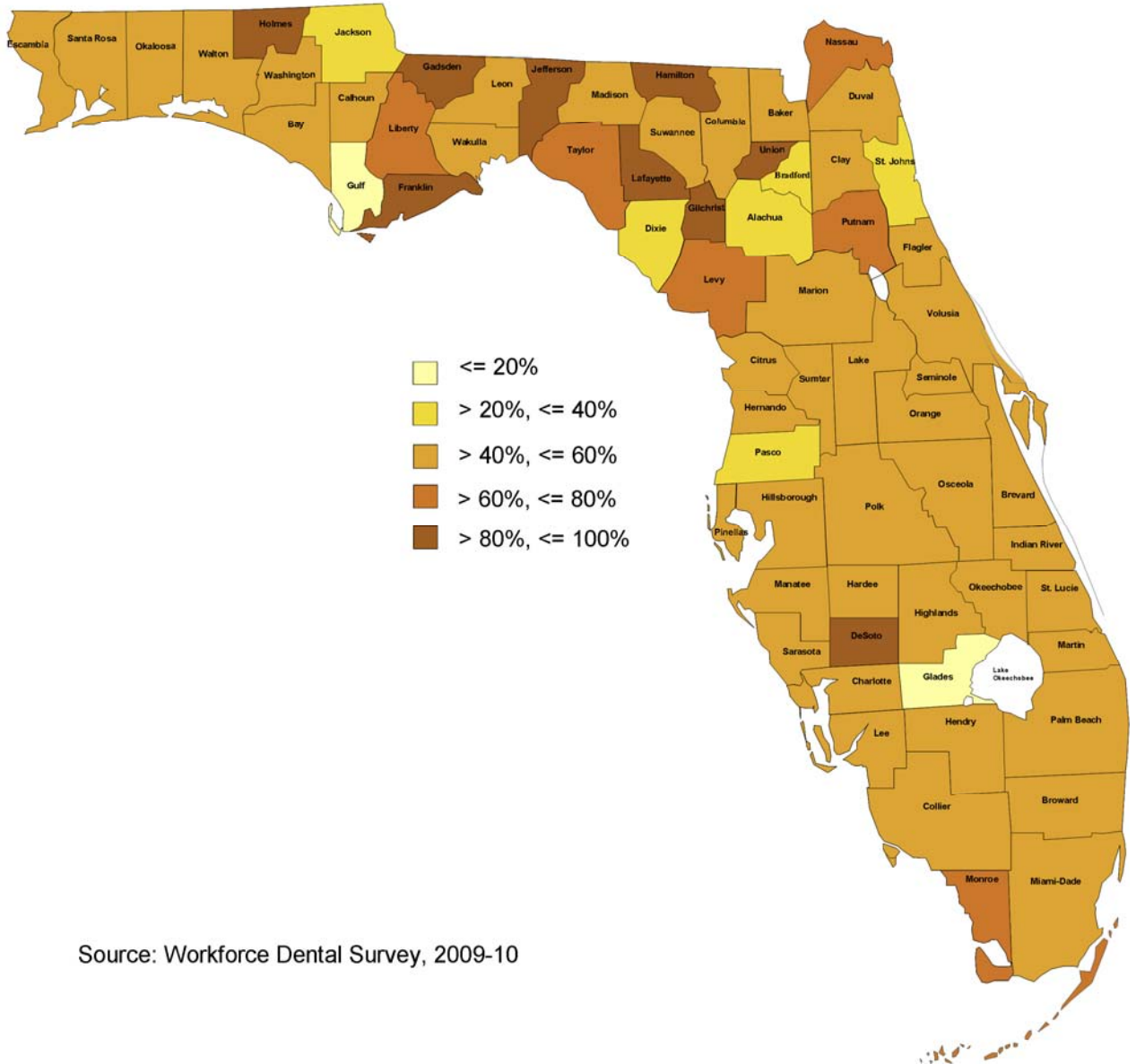
Source: Workforce Dental Survey, 2009-10, and DOH Licensure Data

SECTION 5a: Dentists Practicing in Florida – Retention and Attrition by County

Summary: Certain counties in northern Florida with relatively small populations and only a few dentists may be subject to an adverse impact resulting from the retirement of dentists.

The future impact of retirement is not distributed evenly throughout Florida. Figure 5a.1 illustrates the geographic distribution of practicing dentists 50 and older as a percent of all practicing dentists within a county. For the large majority of Florida counties, the percent of practicing dentists 50 or older ranges from 40 to 60%. For some counties, however, the percentage is much higher, reaching 100%. In Hamilton, Lafayette, and Union Counties, practicing dentists 50 or older represent 90 – 100% of all practicing dentists within the county. In Gadsden and Jefferson Counties, 80 – 90% of practicing dentists are 50 or older. Figure 5a.1 shows that these counties are all in northern Florida. All have relatively small populations and only a few dentists. Future retirement of dentists serving these counties may have far greater impact on the availability of dental care than retirement of dentists practicing in other parts of Florida.

Figure 5a.1. Percent of Practicing Dentists Aged 50 or Older by County



Source: Workforce Dental Survey, 2009-10

Note: Non-respondents to the workforce survey are not shown in the map.

SECTION 6: Dentists Practicing in Florida – Access to Healthcare

Summary: When Florida's 67 counties are ranked from low to high in resident-to-dentist ratios, 85% of the state's residents live in counties with the lowest ratios of residents to dentists and with the best availability of dentists.

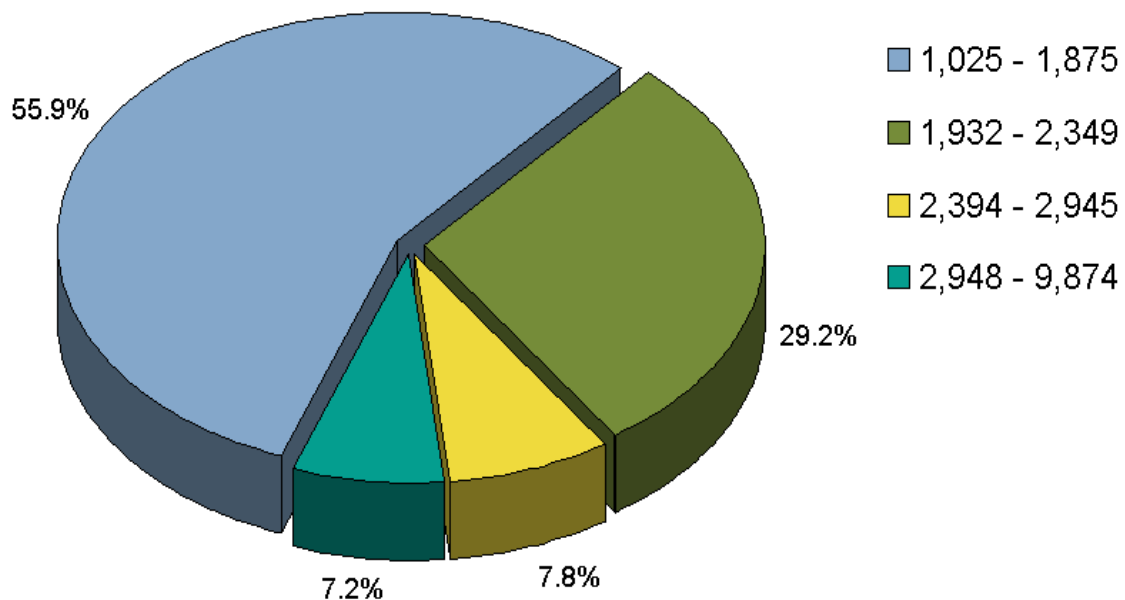
Access to Healthcare – Size of the Workforce:

The size of Florida's dental workforce bears fundamentally on access to a dentist, which is an essential component of oral healthcare.

The population of Florida in 2010 is estimated to be 18,899,412. With 9,409 practicing dentists, the ratio of residents to dentists is about 2,016 to one, including dentists who practice less than full-time. With respect to full-time equivalent (FTE) positions, the ratio is about one for every 2,200 residents.

As illustrated in Figure 6.1, approximately 85% of the state's residents live in counties having the two lowest resident-to-dentist ratios (1,025 – 1,875 and 1,932 – 2,349 residents per dentist). The ratios in the figure are grouped to each represent about 25% of Florida's 67 counties. Counties with the lowest ratios have the best availability of dentists. Only 7.2% of Florida's residents live in the 25% of counties with the highest ratio (2,948 – 9,874 residents per dentist).

Figure 6.1. Percent of Florida's Population by County Resident-to-Dentist Ranges



Note: Ranges are based on quartile groupings of residents per dentist in Florida's counties.

Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

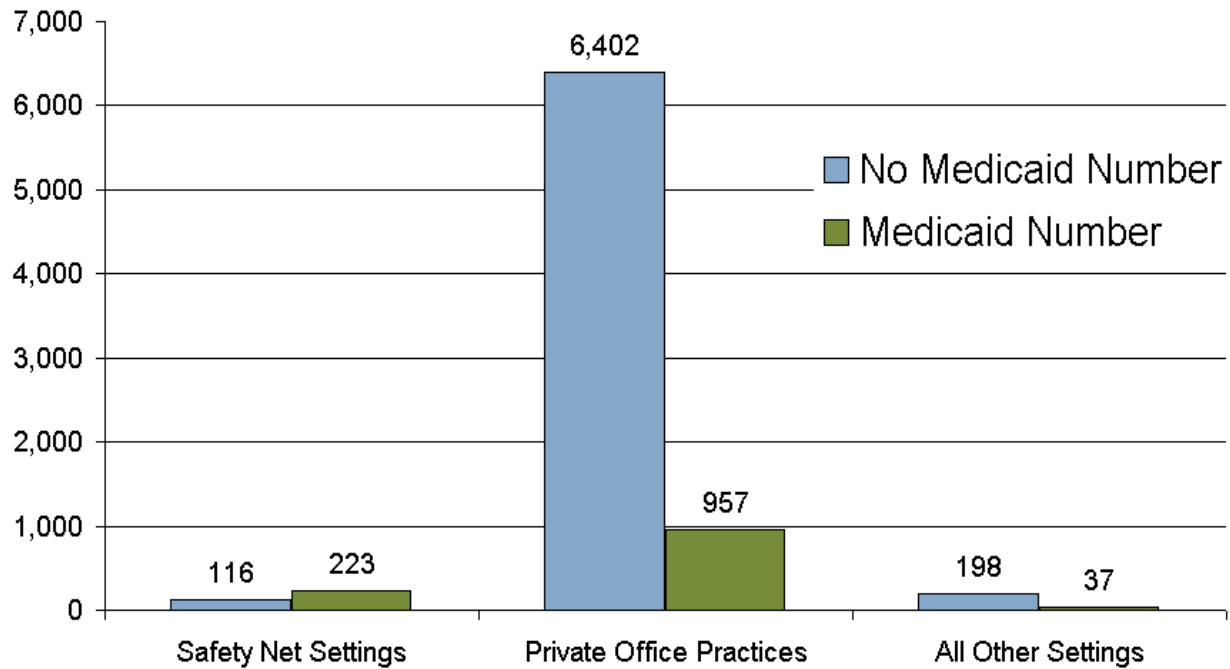
Access to Healthcare – Socioeconomic Barriers:

Workforce productivity, size, and geographic distribution are not the only factors that facilitate or hinder access to oral healthcare. Barriers in the form of poverty, language, culture, and special patient needs may serve to preclude services for persons in need of them. In the remainder of this section, these potential barriers are explored in tandem with measures taken to surmount them.

According to the 2008 Behavioral Risk Factor Surveillance System (BRFSS) Data Report, annual household income has a strong relationship to the percent of adults who visited a dentist in the past year. Among those adults living in households with annual incomes below \$25,000, about half saw a dentist in the past year. By contrast, nearly 80% of adults with household incomes above \$50,000 visited a dentist. Persons without other means may be forced to rely on public support or private charity to obtain needed services. In Florida, roughly a third of the population falls within 200% of the Federal Poverty Level. This works out to over six million people. A portion of these persons currently qualify for Medicaid, the largest public support program for healthcare. Participation of dentists in Medicaid is an important indicator of the extent to which poverty hinders access to services.

Figure 6.2 displays the number of respondents practicing in Florida who have Medicaid provider numbers, by practice setting types. More than 1,200 (15.3%) respondents reported having a Medicaid provider number. Among 7,359 respondents who practice in private office settings, 957 (13%) had a Medicaid provider number. In contrast, approximately 66% of respondents who practice in safety net settings reported having a Medicaid provider number. Although safety net respondents represent less than five percent of all respondents practicing in Florida, they account for more than 18% of all respondents with a Medicaid provider number (n = 1,226).

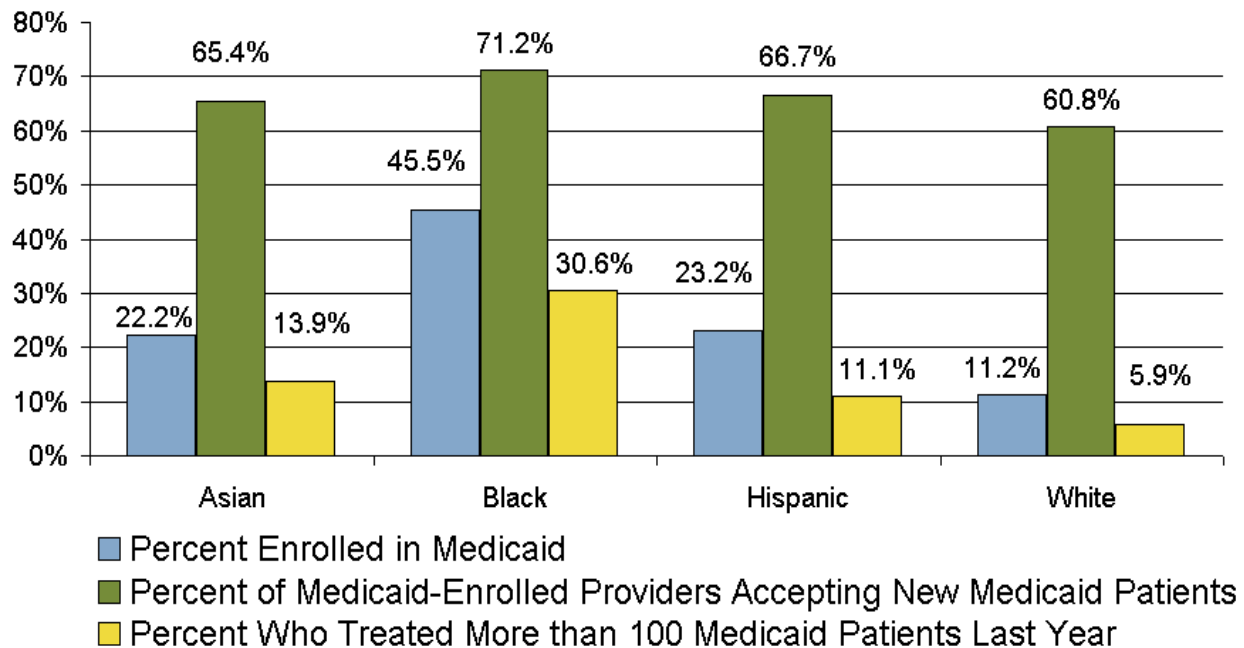
Figure 6.2. Respondents Practicing in Florida with Medicaid Provider Numbers, by Practice Setting Types



Source: Workforce Dental Survey, 2009-10

Among respondents practicing in Florida, Medicaid participation varies by race/ethnicity (Fig. 6.3). Compared to white respondents, black respondents are almost four times as likely to report having a Medicaid provider number (45.5% versus 11.2%). Black respondents also surpass the percent of Hispanic respondents who have a Medicaid provider number by nearly two to one. Among Medicaid participants, black respondents most frequently report accepting new Medicaid patients and treating more than 100 Medicaid patients in the past year. Nearly a third (30.6%) of black respondents reported this patient volume, compared to 13.9% of Asian respondents, 11.1% of Hispanic respondents, and 5.9% of white respondents. Among the race/ethnic groups in Figure 6.3, white respondents rank lowest in all three summarized measures of Medicaid participation: percent enrolled in Medicaid, percent of Medicaid enrolled providers accepting new Medicaid patients, and percent who treated more than 100 Medicaid patients last year.

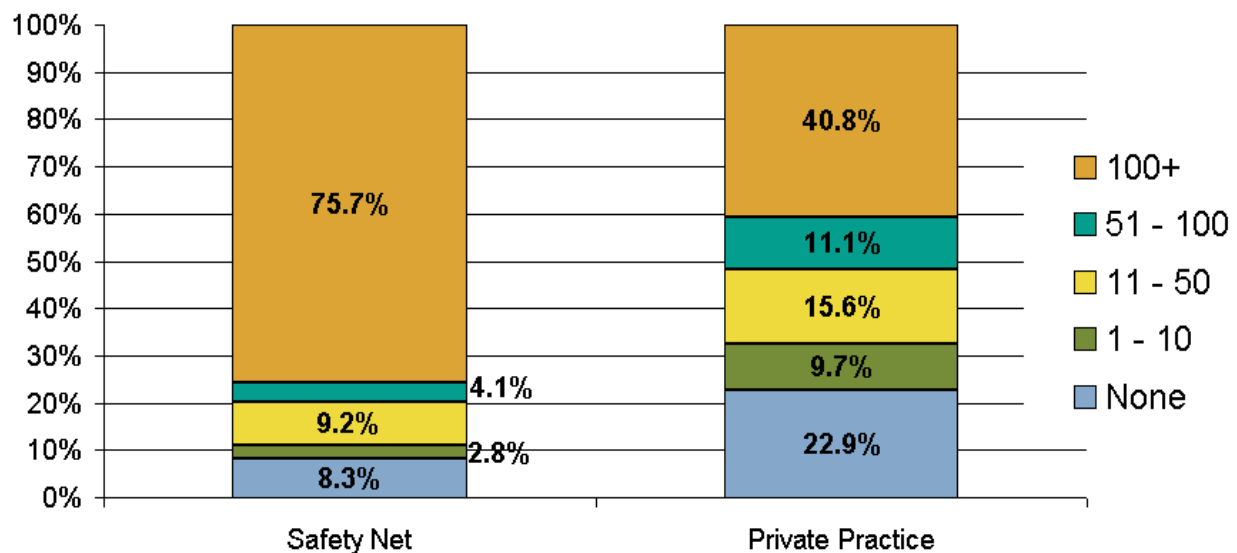
Figure 6.3. Medicaid Participation among Respondents Practicing in Florida, by Race\Ethnicity



Source: Workforce Dental Survey, 2009-10

Having a Medicaid provider number does not imply that services are actually provided to Medicaid patients. Among survey respondents reporting a Medicaid provider number, over 20% indicated that they had not treated any Medicaid patients in the past year. Productivity in treating Medicaid patients varied considerably between respondents in private practices versus those in safety net settings (Fig 6.4). Among survey respondents reporting a Medicaid provider number, more than three-fourths of safety net practitioners treated over 100 Medicaid patients in the past year, compared to about 41% of respondents in private practice.

Figure 6.4. Distribution of Medicaid Patients Treated in the Last Year among Respondents with a Medicaid Number, by Practice Setting Type

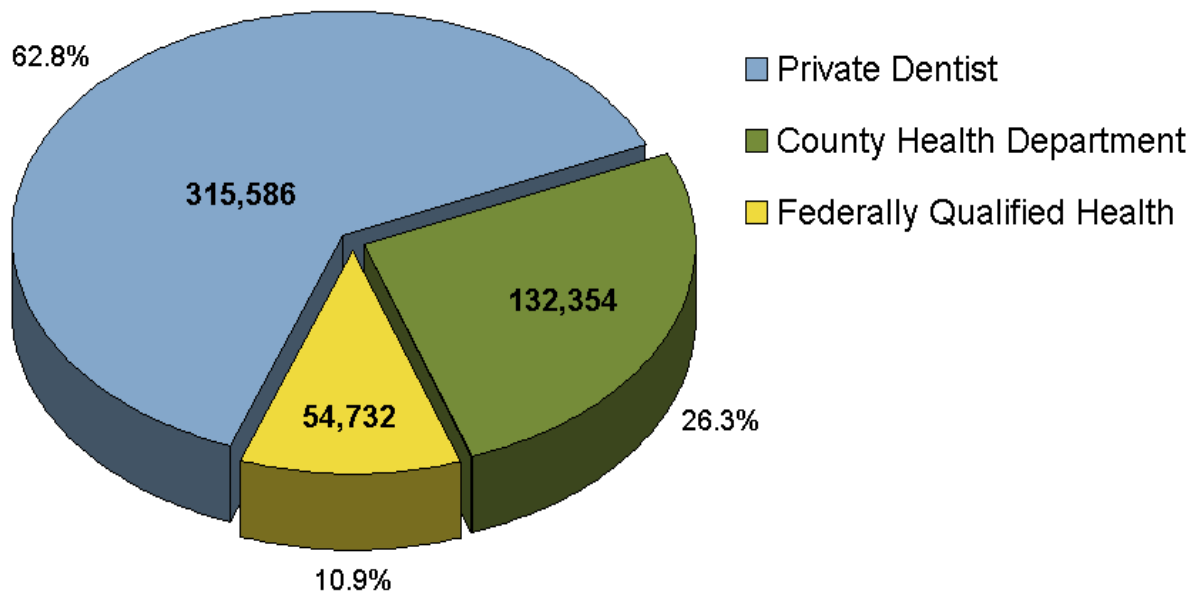


Source: Workforce Dental Survey, 2009-10

Another difference appears in the acceptance of new Medicaid patients. While 13.7% of respondents with a Medicaid provider number practicing in a safety net setting report that they are not currently accepting new Medicaid patients, 40.3% among comparable respondents in private practice report the same (data not shown).

Figure 6.5 provides the number and distribution of Medicaid patients receiving dental services in fiscal year 2009-2010 under fee-for-service arrangements, by provider type. Private dentists treated 315,586 patients, 62.8% of the total. County health departments treated 132,354 patients (26.3%) while federally qualified health centers treated 54,732 (10.9%). The high number of patients served by private dentists is attributable to the predominant number of these providers.

Figure 6.5. Medicaid Fee-for-Service Dental Patients during Fiscal Year 2009-10, by Provider Type



Source: Medicaid Decision-Support System as of September 23, 2010

* Percentages follow the order of the legend in a clockwise direction.

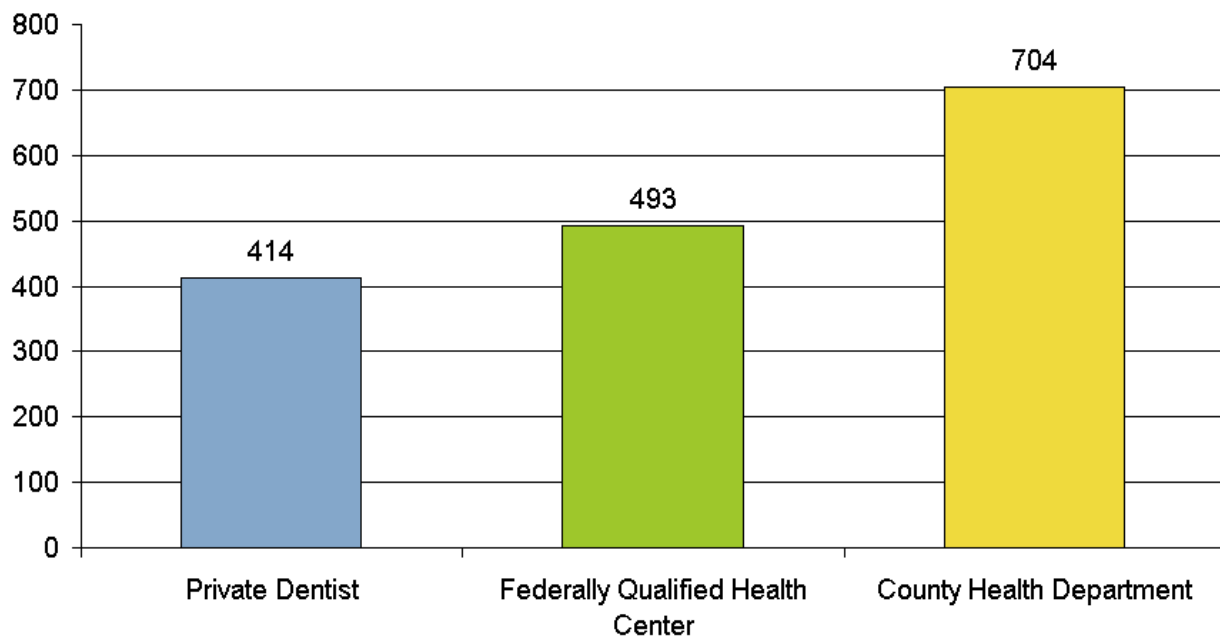
With respect to the average number of Medicaid patients treated per dentist under a fee-for-service plan during the past year, private dentists fall below the safety net dentists (Fig 6.6).¹ Dentists in county health departments surpassed the dentists in the other settings by a considerable margin: 704 patients versus 493 for federally qualified health centers and 414 for private dentists.

According to information in the Florida Medicaid Management Information System, a total of 445,941 patients received dental services through Medicaid during fiscal year 2009-10. This number may not include all applicable patients because of incomplete reporting of services provided under Medicaid managed

¹ Technically, county health departments are reimbursed for Medicaid services according to an average encounter rate calculated to cover the cost of providing all medical and dental services.

care. During the same fiscal year, a total of 2.1 million children (persons under 21) were eligible for Medicaid services in Florida. Under State Plan Medicaid, children are eligible for dental services, while adults are limited to emergency dental services and a few other services. Comparison of the total number of persons receiving dental services with the population of eligible children reveals that only about 21% of eligible children received services. This figure would be lower if adjusted to remove the adults in the recipient count. The disparity between the total number of persons receiving services and the number of children eligible for services reveals a large population potentially underserved with respect to dental care. Moreover, the relatively small number of dentists who are enrolled as Medicaid providers and who currently accept new Medicaid patients suggests that current treatment levels may have limited potential for growth under current practice constraints. With the expansion of eligibility for Medicaid in 2014 mandated in the 2010 health insurance reforms passed by Congress, the disparity between the number of eligible persons and the number of providers accepting Medicaid will likely worsen.

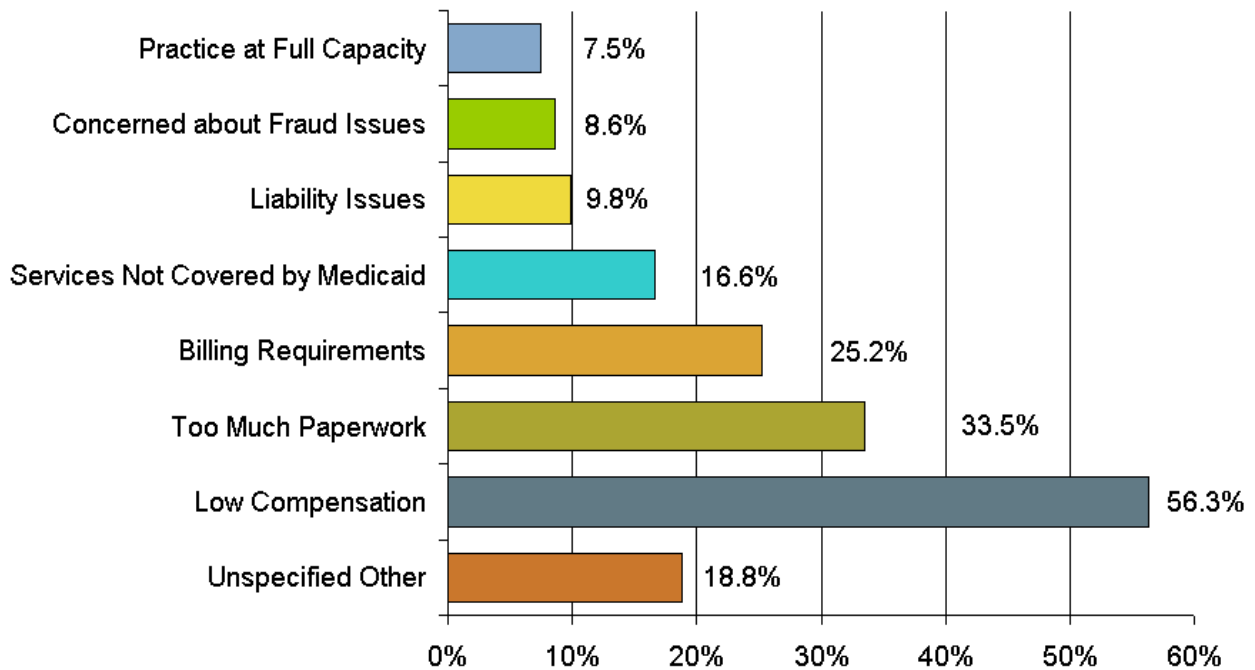
Figure 6.6. Average Number of Medicaid Dental Patients during Fiscal Year 2009-10 per Treating Dentist, by Provider Type



Source: Medicaid Decision-Support System as of September 23, 2010

Extending Medicaid dental services to a broader segment of eligible persons rests primarily on increasing the number of dentists in private practice who will accept Medicaid and new Medicaid patients. Reasons why respondents in private practice do not accept Medicaid are presented in Figure 6.7. Respondents were able to select more than one reason. The only reason cited by more than half of the respondents (56.3%) is low compensation. Excessive paperwork and burdensome billing requirements were cited by 33.5% and 25.2% of respondents, respectively. Nearly 17% of respondents cited exclusion of specialty or adult primary-practice services. Broader voluntary participation in Medicaid among dentists in private practice may require raising reimbursement rates to acceptable levels and streamlining administrative processes associated with provider enrollment and billing.

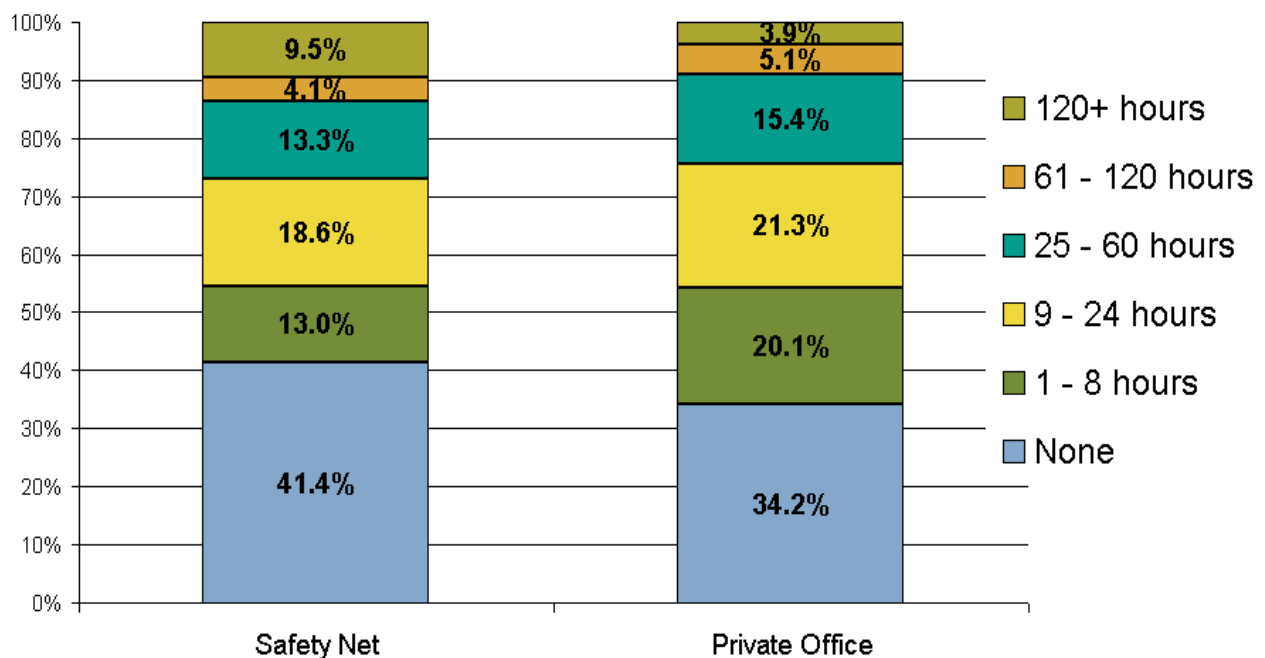
Figure 6.7. Reasons Respondents in Private Practice Do Not Accept Medicaid



Source: Workforce Dental Survey, 2009-10

Medicaid is not the only means by which persons with lower incomes may receive dental care. Volunteer services provided by dentists are available on a limited basis. Nearly 65% of respondents reported offering volunteer services. Figure 6.8 displays the distribution of hours of volunteer work performed in the past two years, by practice type. Dentists in a safety net setting are less likely to provide volunteer services than dentists in private practice, 58.6% versus 65.8%. Nevertheless, the percent of dentists in both settings who offered zero to eight hours of volunteer service in the last two years is virtually identical in both practice settings (54%). Less than a quarter of respondents (23.1%) donated dental equipment or money to pay for dental services in the last year, with a higher percentage of dentists in private practice donating (23.4%) than dentists in a safety net practice (16.3%).

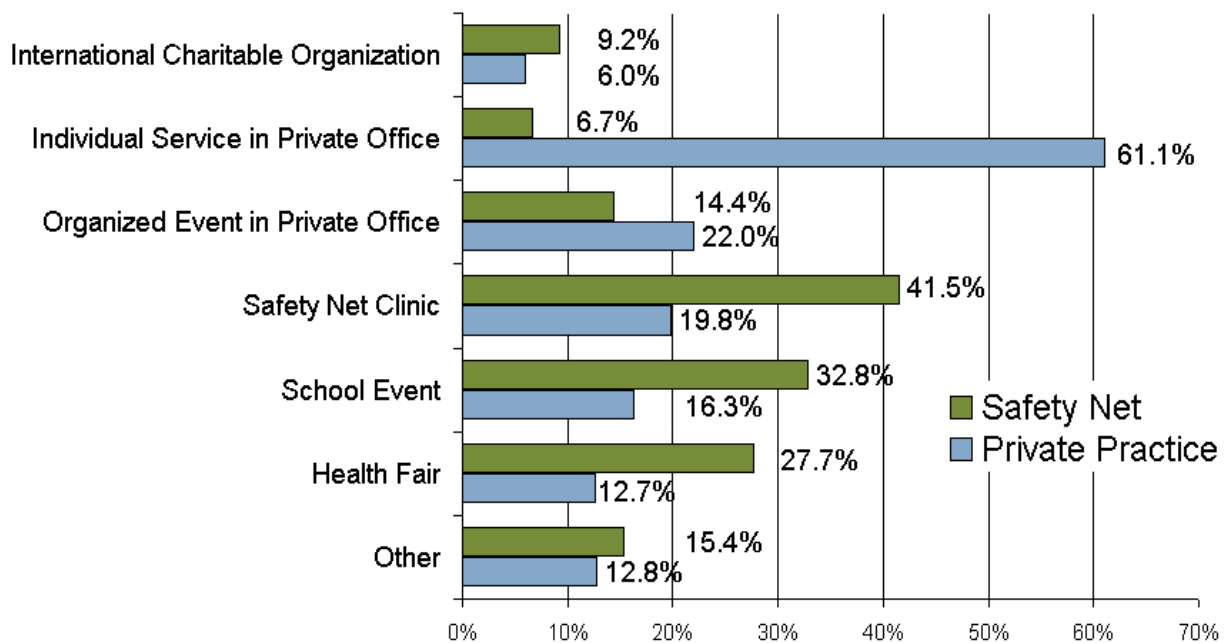
Figure 6.8. Amount of Volunteer Dental Service Provided in the Last Two Years, by Practice Type



Source: Workforce Dental Survey, 2009-10

Dentists in private practice most typically perform volunteer work as an individual initiative in their own offices (Fig 6.9). If the work is part of an organized event (such as Give Kids a Smile Day), it is still performed most typically in their own offices. Dentists in safety net practices, by contrast, tend to participate more frequently in outside events such as health fairs, school events, or international charity. Though volunteer services may help many individuals who might otherwise not receive oral healthcare, the number of participating dentists and the scope of their activity suggest that volunteer services reach only a small percentage of impoverished Floridians.

Figure 6.9. Settings for the Provision of Volunteer Services, by Practice Type

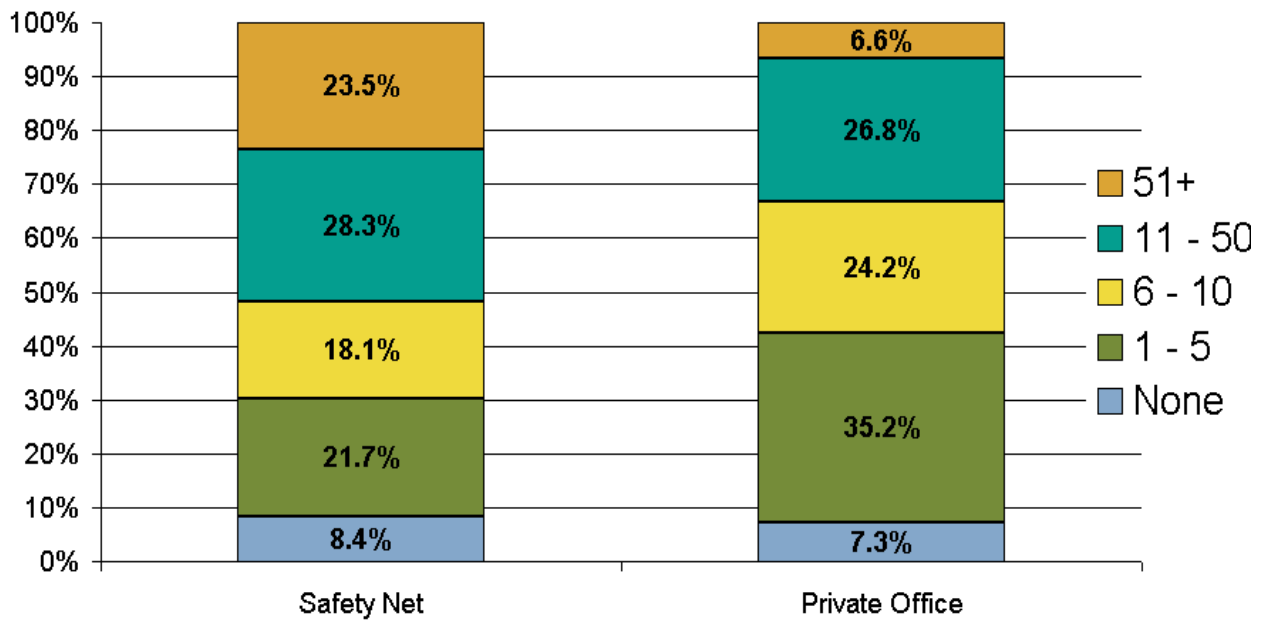


Source: Workforce Dental Survey, 2009-10

The last potential barrier to oral healthcare considered in this section involves care for persons with special needs. Such needs may stem from physical disabilities, developmental disabilities, or mental impairments. Physical disabilities include impairments of vision or hearing, impairments of mobility, and certain severe illnesses. Developmental disabilities include mental retardation, cerebral palsy, autism, spina bifida, and Prader-Willi syndrome. Mental impairments include learning disorders, metabolic disorders, Alzheimer’s, dementia, and mental illnesses such as depression and schizophrenia. The examples are not intended to be exhaustive. However, it is clear that “special needs” do not have a single set of specific barriers to oral healthcare.

Figure 6.10 presents the percentage distribution of treated special needs patients, according to safety net or private practice status. A larger percentage of respondents in private practice treated 1–10 special needs patients in the past year than did respondents in a safety net setting (59.4% versus 39.8%). By contrast, safety net respondents more frequently treated larger numbers (e.g. 100 or more) of special needs patients than private practice respondents (16% versus 3.3%). Nearly a quarter of safety net dentists (23.5%) routinely treated an average of more that one special needs patient per week during the past year. Among respondents practicing in Florida who treated at least one special needs patient within the past year, safety net dentists treated an average of 40 special needs patients whereas private office dentists treated an average of 21.

Figure 6.10. Number of Special Needs Patients Treated in the Past Year, by Practice Type



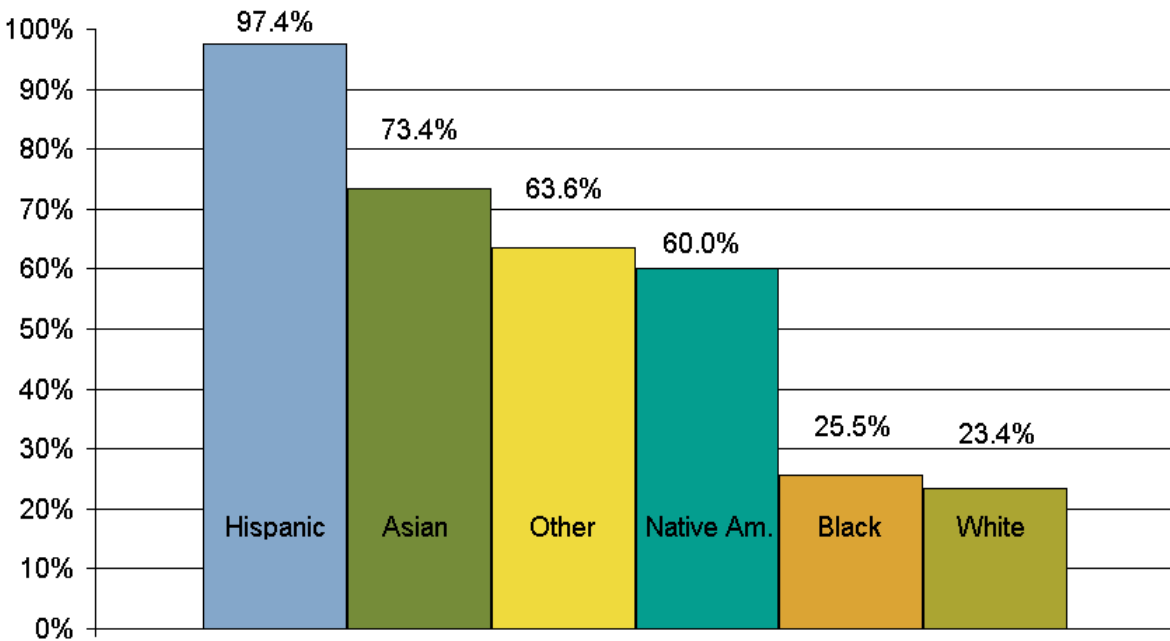
Source: Workforce Dental Survey, 2009-10

In raw numbers, respondents practicing in Florida treated just below 159,000 special needs patients in the past year, at maximum. Given the preponderance of respondents practicing in private offices, these dentists accounted for more than 87% of this total. Evaluating the number of special needs patients receiving treatment is difficult because the number of persons in the population who have special needs is not readily available. For that reason, aggregate comparison of served versus unserved persons with special needs will not be further pursued here.

In all, assessment of special needs as a potential barrier to oral healthcare confronts a number of difficulties. The heterogeneity of conditions comprised by special needs potentially implies a corresponding heterogeneity of accommodations that would facilitate access to care. Specific mapping of conditions and accommodations needs to be developed. With such mapping, measurement of the extent to which accommodations are present can be undertaken. Accommodations potentially include physical modifications of service sites, alternate service hours, use of specific equipment or procedures, and specialized training for dentists. Facilitating access to oral healthcare for persons with special needs remains a topic for further investigation.

Though less tangible than poverty as a barrier to healthcare, language or cultural differences may impede seeking or optimizing available healthcare opportunities. The percentage of respondents practicing in Florida who speak a foreign language is lowest among whites (23%) and highest among Hispanics (97%) (Figure 6.11). Although the majority of Hispanic respondents speak a non-English language, they are the least likely to speak more than one foreign language. Foreign language proficiency is also high among Asian, Native American, and “Other” respondents, with 60% or more in each group bi- or multilingual.

Figure 6.11. Percent of Respondents with Non-English Language Speaking Ability by Race\Ethnicity



Source: Workforce Dental Survey, 2009-10

Table 6.1 identifies the foreign languages spoken by respondents practicing in Florida who reported speaking a language other than English. The table provides the number and percentage of these respondents aggregated by language spoken and race/ethnicity. For each race/ethnicity group, the most frequently spoken language is highlighted in yellow, and the second most frequent is highlighted in blue. Percentages in the table sum to more than 100% as the result of multiple language skills beyond English among some respondents.

Spanish is the most frequently spoken language for all race/ethnicity groups except Asians and a residual “other” group. Spanish and French are the only two languages spoken by all race/ethnicity groups. All of the Hispanic respondents having reported speaking a non-English language reported speaking Spanish. Among Asian respondents, Spanish was the fourth most frequently spoken language, following an “other” category, Vietnamese, and Chinese.

Table 6.1. Selected Non-English Languages Spoken by Respondents Practicing in Florida, by Race/Ethnicity

Language	Asian		Black		Hispanic		Native Am.		White		Other	
	#	%	#	%	#	%	#	%	#	%	#	%
Spanish	39	11.3%	42	71.2%	1,387	100.0%	4	66.7%	744	59.4%	40	28.8%
Other	155	44.8%	7	11.9%	6	0.4%	0	0.0%	197	15.7%	69	49.6%
French	10	2.9%	20	33.9%	32	2.3%	2	33.3%	196	15.7%	15	10.8%
German	1	0.3%	0	0.0%	10	0.7%	1	16.7%	122	9.7%	3	2.2%
Arabic	2	0.6%	0	0.0%	1	0.1%	0	0.0%	80	6.4%	32	23.0%
Italian	0	0.0%	0	0.0%	32	2.3%	1	16.7%	69	5.5%	6	4.3%
Portuguese	2	0.6%	0	0.0%	46	3.3%	0	0.0%	44	3.5%	9	6.5%
Vietnamese	91	26.3%	0	0.0%	0	0.0%	0	0.0%	1	0.1%	0	0.0%
Hebrew	0	0.0%	0	0.0%	10	0.7%	1	16.7%	70	5.6%	2	1.4%
Russian	0	0.0%	0	0.0%	0	0.0%	0	0.0%	80	6.4%	0	0.0%
Chinese	44	12.7%	0	0.0%	0	0.0%	1	16.7%	4	0.3%	1	0.7%
Polish	1	0.3%	1	1.7%	1	0.1%	0	0.0%	32	2.6%	0	0.0%
Korean	28	8.1%	0	0.0%	0	0.0%	0	0.0%	3	0.2%	0	0.0%
Tagalog	22	6.4%	0	0.0%	0	0.0%	0	0.0%	4	0.3%	1	0.7%
Creole	0	0.0%	14	23.7%	2	0.1%	0	0.0%	5	0.4%	4	2.9%
Japanese	6	1.7%	0	0.0%	3	0.2%	0	0.0%	4	0.3%	2	1.4%

The population of Florida comprises a number of ethnic and nationality minorities, the largest of which is Hispanic. Hispanics in Florida total more than four million, slightly less than 22% of the state’s population. Nearly 70% of Florida’s Hispanics live in five counties: Miami-Dade (38.7%), Broward (10.6%), Orange (7.4%), Hillsborough (7.0%), and Palm Beach (5.7%). These counties—particularly Miami-Dade—contain large Hispanic communities where Spanish

rather than English is the language of daily communication. The availability of a Spanish-speaking dentist may facilitate access to care.

Table 6.2 summarizes information on Hispanic residents and dentists for the five counties with the largest concentrations of Hispanic Floridians. The table shows that Broward County has an especially low number of Hispanic residents per Hispanic dentist and that Miami-Dade and Palm Beach Counties also have numbers that fall below the statewide median for residents per dentist (2,382). The ratios in Hillsborough and Orange Counties exceed the statewide median. The higher ratios may reflect less availability of care from a Spanish speaking dentist in these counties.

Table 6.2. The Hispanic Population and Hispanic Dentists in Florida Counties Having the Greatest Number of Hispanics

County	Hispanic Population	Active Hispanic Dentists	Hispanic Residents per Hispanic Dentist
Miami-Dade	1,571,910	783	2,008
Broward	429,882	281	1,530
Orange	299,518	90	3,328
Hillsborough	282,979	96	2,948
Palm Beach	230,695	104	2,218

Source: Workforce Dental Survey, 2009-10; Florida Legislature, Office of Economic and Demographic Research; Florida Department of Health, Medical Quality Assurance Licensure File

Responses to the workforce survey of dentists indicate that nearly all Hispanic respondents speak Spanish. Thus, in counties with low ratios of Hispanic residents to Hispanic dentists, there is ready availability of Spanish-speaking dentists. The fact that the two Florida counties having the largest number of Hispanics (Miami-Dade and Broward) also have the largest number of Hispanic dentists shows a fit between the respective rankings favorable for the availability of care.

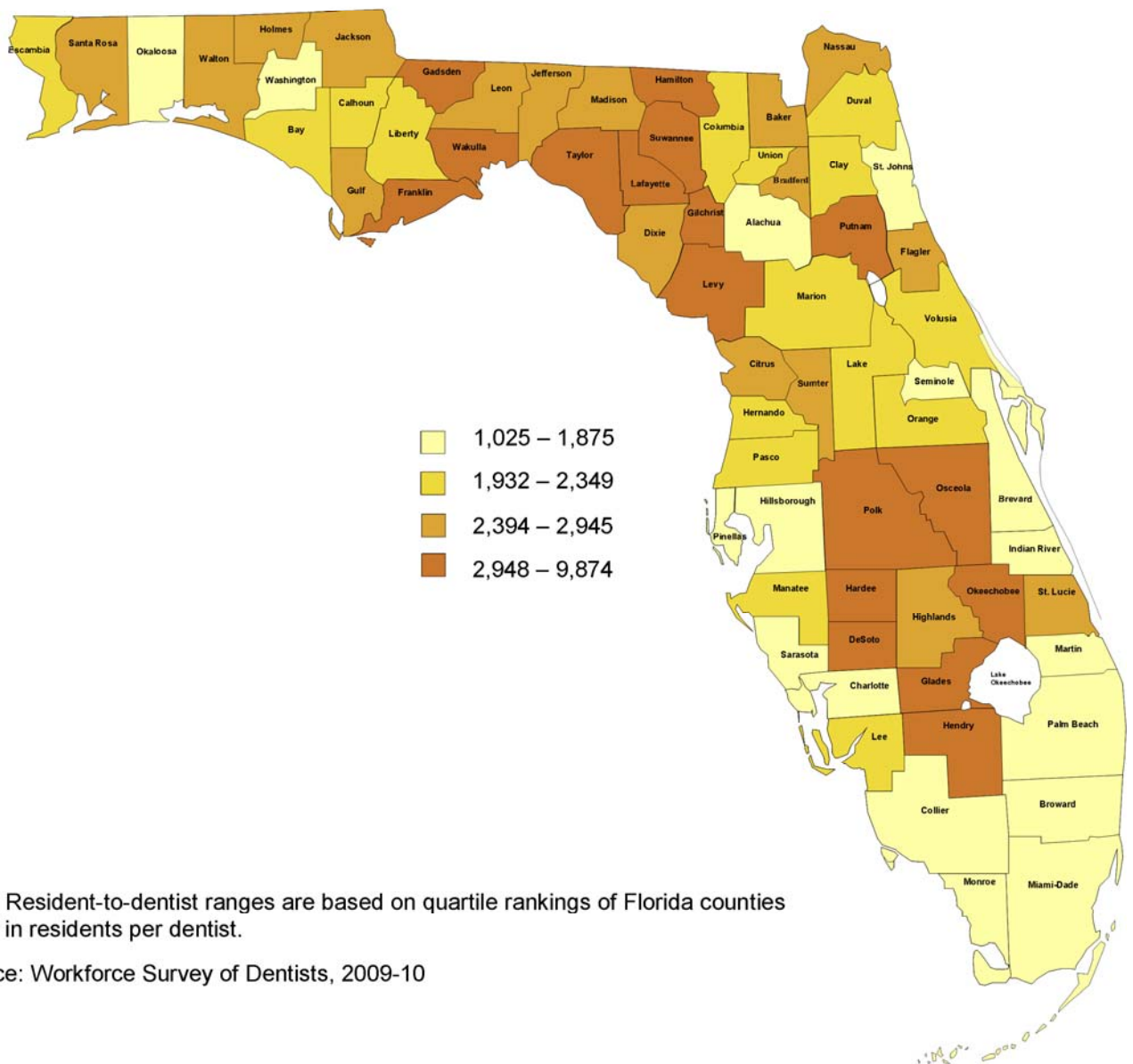
SECTION 6a: Dentists Practicing in Florida – Access to Healthcare by County

Summary: Florida’s dentists are disproportionately located in the more populous areas of the state, particularly the coastal counties of southern Florida.

Geographic proximity to a provider is an important factor in the accessibility of dental care. The next two figures provide county-level information pertaining to the supply of dentists in Florida’s counties.

Figure 6a.1 illustrates the geographic distribution of resident-to-dentist ratios. Each ratio range represents about 25% of Florida's 67 counties. Overall, the coastal counties of south Florida have the best availability of dentists (lower resident-to-dentist ratios), and the interior counties of south Florida, along with many central Panhandle counties, have the least availability (higher resident-to-dentist ratios). Because no standard or optimal ratio for care exists, the county resident-to-dentist ratios cannot be further characterized as sufficient or insufficient.

Figure 6a.1. Florida Counties by Resident-to-Dentist Ranges



Note: Resident-to-dentist ranges are based on quartile rankings of Florida counties in residents per dentist.

Source: Workforce Survey of Dentists, 2009-10

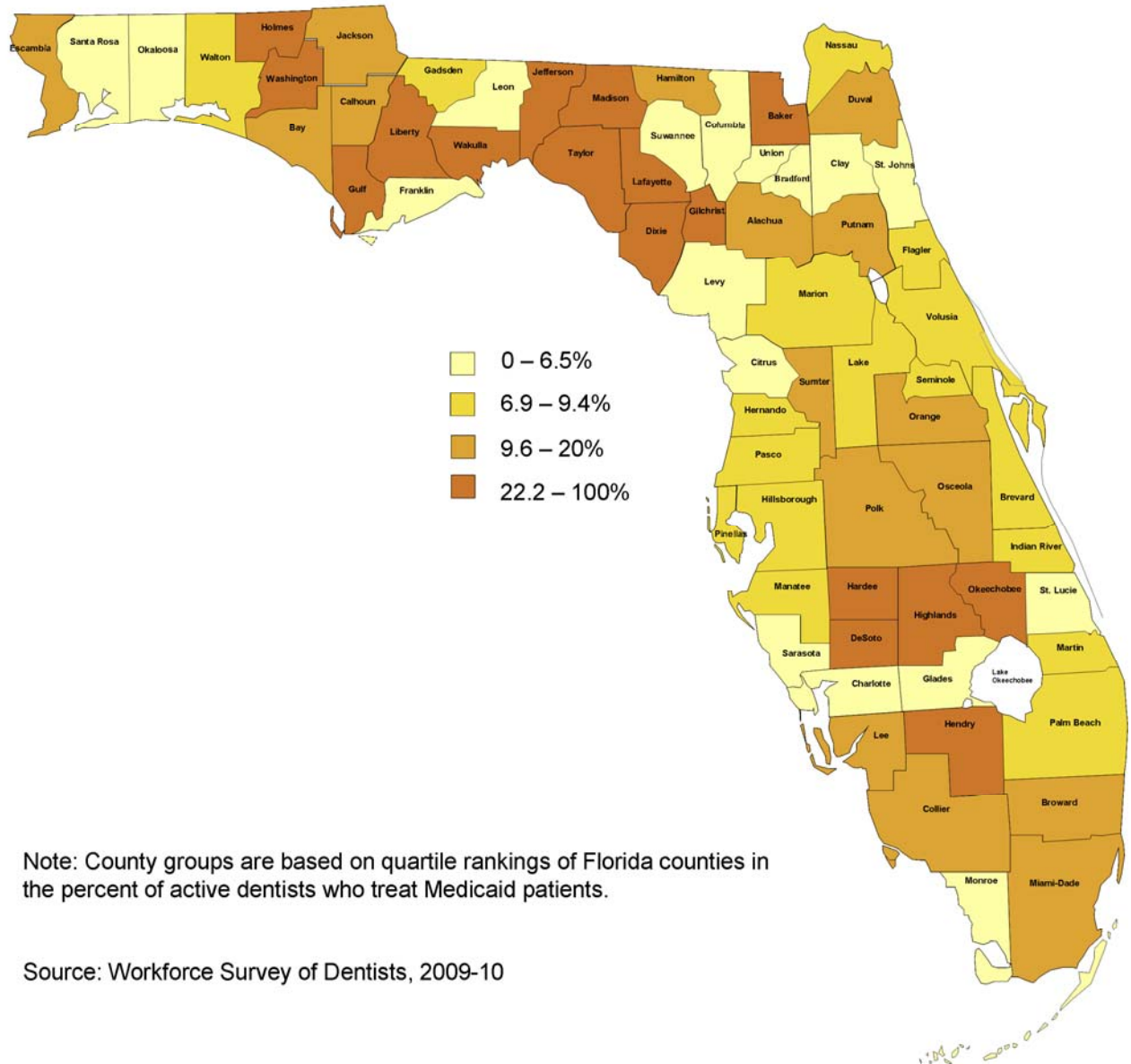
Note: Non-respondents to the workforce survey are not shown in the map.

Among all counties, the median number of residents per dentist is 2,394. The northern counties have the most variability, with both the highest and lowest ratios of residents to dentists. Lafayette County, with nearly 9,900 residents per dentist, has the highest ratio in the state, while Alachua County, with 1,025 residents per dentist, has the lowest. Counties south of Orange and Pasco, by contrast, exhibit a more distinct pattern of resident-to-dentist ratios. Most of the southern coastal counties have ratios less than 2,000 residents per dentist, below the statewide median ratio, and the best availability of dentists. The eight interior counties all have ratios above the statewide median, though only about 12% of the area's population lives in the interior counties. Of the 17 counties with the least availability of dentists, two (Polk and Osceola) account for 64% of the entire population. Counties with the least availability are typically sparsely populated rural counties.

Participation in Medicaid by dentists practicing in Florida varies by county. Figure 6a.2 shows the estimated participation rates grouped into four ranges, each representing about 25% of Florida's counties. Counties with few practicing dentists are subject to an exaggerated impact from even minor changes in Medicaid participation. Because of the small number of practicing dentists, one dentist's participation or lack of participation in Medicaid may significantly change a county's participation rate. Among counties with more than 95 active dentists, several have very low Medicaid participation rates: Clay (5.2%), St. Lucie (4.0%), Okaloosa (4.8%), St. Johns (2.8%), Leon (4.5%), and Sarasota (3.5%). Of these, Sarasota County falls within the top ten Florida counties for the number of active dentists.

It is critical to bear in mind that comparison of counties with regard to their population-to-dentist ratios only shows relative standings among the counties. Such standings do not establish whether an area is underserved with respect to the needs of its residents. At best, population counts serve as highly inexact proxies for measures of dental service needs. Other factors unrelated to population size, including income and education levels of a county's residents, may increase or diminish demand for dental services.

Figure 6a.2. Estimated Percent of Active Dentists Who Treat Medicaid Patients, by County Groups



Note: County groups are based on quartile rankings of Florida counties in the percent of active dentists who treat Medicaid patients.

Source: Workforce Survey of Dentists, 2009-10

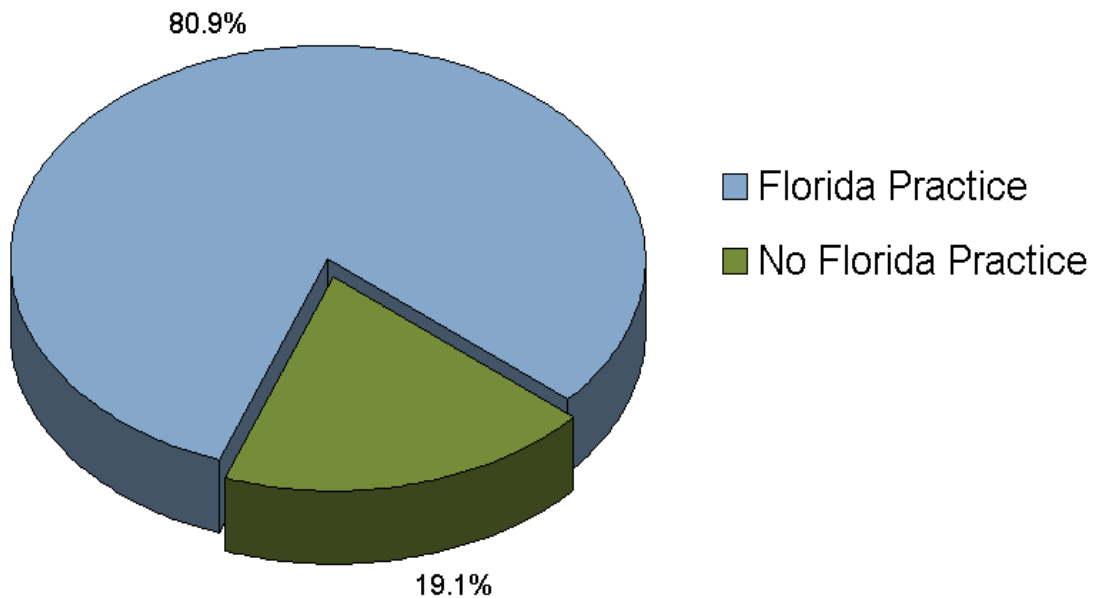
Note: Non-respondents to the workforce survey are not shown in the map.

SECTION 7: Dentists Not Practicing in Florida – Profile

Summary: Compared to respondents practicing in Florida, respondents not practicing in the state are more likely to have an out-of-state address and a dental degree from another state; more likely to be white, and less likely to be Hispanic; are slightly older; and have a greater likelihood of practicing dentistry more than 20 years.

As shown in Figure 7.1, nearly one fifth (19.1% or 1,912) of survey respondents with an active Florida license currently do not practice in the state.

Figure 7.1. Florida Dental Practice Among Survey Respondents with an Active Florida License



Note: Information was not provided by 303 respondents.

Source: Workforce Dental Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Table 7.1 summarizes key differences between respondents who practice in Florida and those who do not. Almost 76% of respondents who do not practice in Florida reside in another state. Almost 95% of respondents with a Florida address practice in Florida, compared to only 4% with an out-of-state address. The correlation between residency in the state and practice is high ($r = .82$). The second most pronounced difference shown in the table is the percent of each group licensed to practice in another state: 78.4% among respondents who do not practice in Florida compared to 23.0% among those who do.

Non-practicing respondents are more likely to have an out-of-state dental degree, with a slightly greater likelihood of having a degree from New York. They are also more likely to be white, and less likely to be Hispanic; are slightly older, on average; and have a greater likelihood of practicing dentistry more than 20 years.

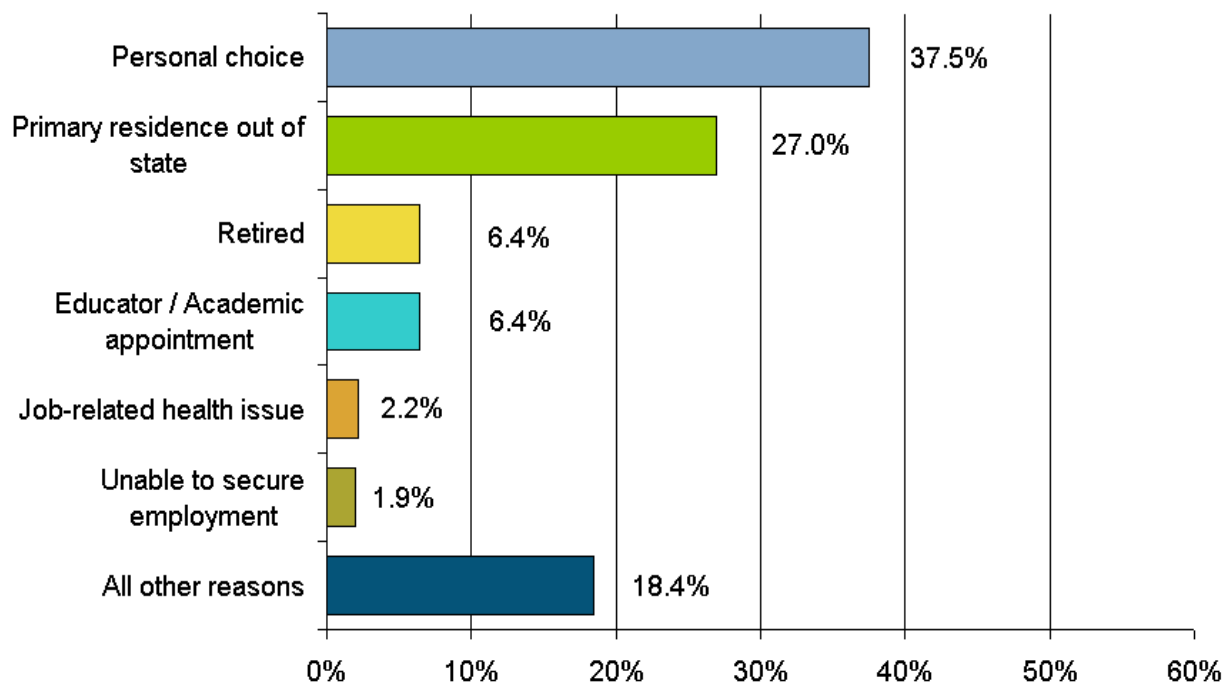
Table 7.1. Profiles of Respondents with an Active Florida License by Florida Practice Status

Characteristics	Practices in Florida	Does not Practice in Florida
Average age	49.3 (Range of 25-88 years)	50.7 (Range of 22-83 years)
% White	69.60%	79.20%
% Hispanic	18.30%	9.10%
% Currently resides out of state	0.80%	75.50%
% Licensed in another state	23.00%	78.40%
% Received dental degree from UF	24.30%	13.80%
% Practiced dentistry > 20 years	49.70%	56.80%

Source: Workforce Dental Survey 2009-10 and DOH Licensure Data

Figure 7.2 illustrates the distribution of the primary reason for not practicing in Florida reported by survey respondents with an active Florida license. Personal choice was cited most often, followed by out-of-state residence. Together, these reasons represent almost two-thirds (64.5%) of all reasons given by respondents. Appointment as an educator and retirement were each offered by 6.4% of respondents, followed by some infrequent reasons. Other unspecified reasons and reasons with less than one percent of respondents were combined into an “all other reasons” category (18.4%).

Figure 7.2. Main Reason Why Florida-Licensed Respondents Do Not Practice Dentistry in Florida



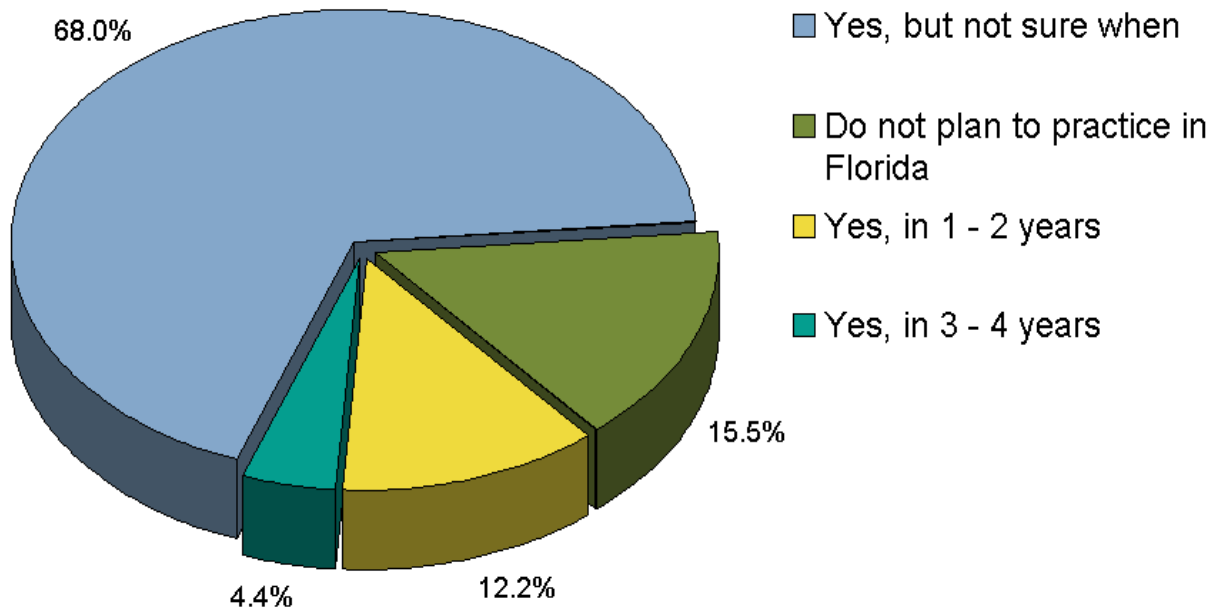
Source: Workforce Dental Survey, 2009-10

SECTION 8: Dentists Not Practicing in Florida – Future Plans

Summary: Almost 85% of respondents not currently practicing in Florida have plans for future practice in the state.

As shown in Figure 8.1, the majority of respondents with an active Florida license who do not currently practice in the state report that they intend to practice at some point in the future. Only 15.5% indicate no such future plans. Among those with reported plans for future practice, 80.4% have no definite time frame for that practice, 14.4% plan to practice in one to two years, and 5.2% plan to practice in three to four years. Respondents intending future Florida practice are much more likely to currently live out of state compared to respondents without plans for future practice, 84.1% versus 60.4%. This suggests that plans for future practice are typically linked to plans for location or re-location to the state made by dentists currently living outside Florida.

Figure 8.1. Future Plans to Practice in Florida among Respondents Not Currently Practicing in the State



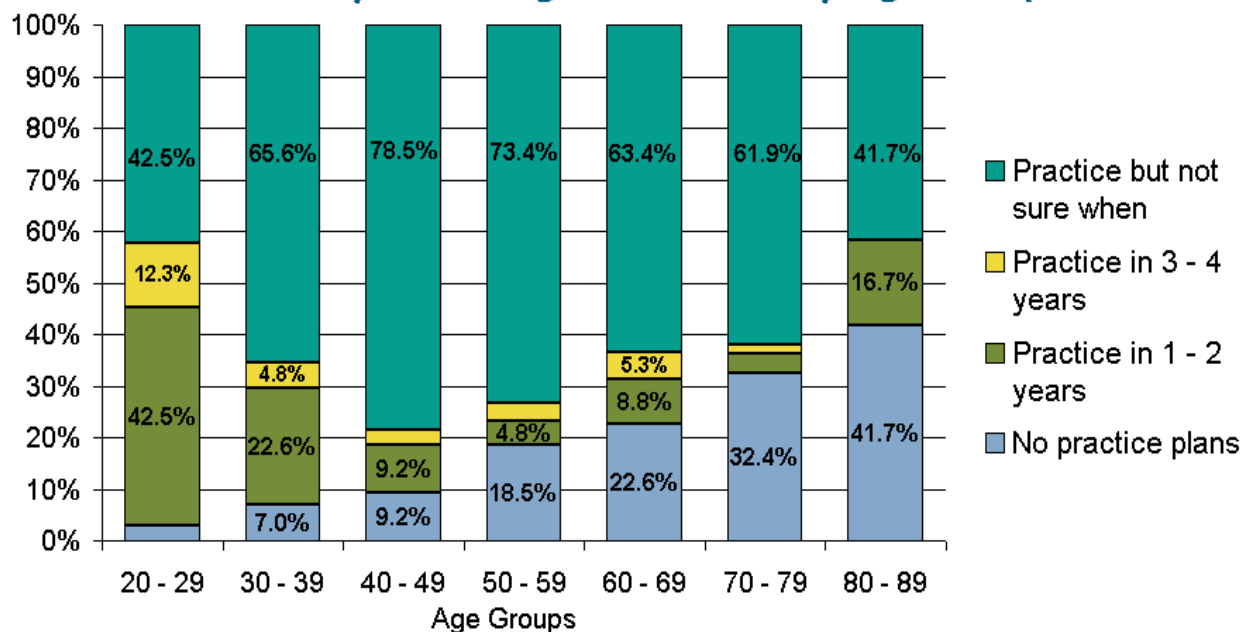
Note: 303 respondents not practicing in Florida did not report future practice plans.

Source: Dental Workforce Survey, 2009-10

* Percentages follow the order of the legend in a clockwise direction.

Plans for future practice in Florida are related to the respondent's age (Figure 8.2). The percentage of respondents with no anticipation of future Florida practice increases for each age group, rising from 2.8% of respondents aged 20 – 29 to 41.7% of respondents aged 80 – 89. Respondents aged 20 – 29 have by far the highest percentage reporting a definite time frame for future Florida practice, with 42.5% indicating practice in one to two years and 12.3% indicating three to four years. Respondents aged 30 – 39 have the second highest percentage reporting a definite time frame for future Florida practice (27.4%), though the percentage is much smaller than that for respondents aged 20 – 29. Respondents aged 40 – 49 have the largest percentage reporting an indefinite time frame for future Florida practice (78.5%). This may suggest a peak period for uncertainties surrounding career options, particularly in comparison with younger colleagues.

Figure 8.2. Future Plans to Practice in Florida among Respondents with an Active Florida License Not Currently Practicing in the State, by Age Group



Note: Labels for values less than 4% are not shown.

Source: Dental Workforce Survey, 2009-10

APPENDIX A
2009-2010 Dentist Workforce Survey Instrument

Dental Workforce Survey for Dentists

Governor Charlie Crist, State Surgeon General Ana Viamonte Ros and the Florida Legislature recognize the importance of assessing Florida's current and future dental workforce. Your responses, which constitute a public record, will be instrumental in shaping Florida's healthcare policies. This survey is voluntary and will be maintained by the Department of Health. Your time and effort in completing the questions below is appreciated.

License Number _____

1. Do you hold a dental license in any other state(s)?
 - Yes. (__ Drop down list of states _____)
 - No.
2. Please indicate all of the dental school(s) or program(s) you attended and from which you received your dental degree(s).
 - Nova Southeastern University College of Dental Medicine
 - University of Florida College of Dentistry
 - Out of state dental school
 - Foreign dental school or program

2a. if you are an out of state dental school graduate - Please indicate the state where you received your dental education

- State __ (Drop Down List of States) _____

2b. if you are a foreign trained provider, please indicate the country where you attained your dental degree other than the United States

- Argentina
- Australia
- Brazil
- Canada
- China
- Columbia
- Cuba
- Egypt
- England
- France
- Germany
- Haiti
- India
- Ireland
- Israel
- Italy

- Japan
- Korea
- Mexico
- Nigeria
- Philippines
- Poland
- Portugal
- Russia
- Saudi Arabia
- Scotland
- South Africa
- Spain
- Ukraine
- Vietnam
- Other

3. How many years have you been in the active practice of dentistry?
 - 0 – 1.
 - 2 – 5.
 - 6 – 10.
 - 11 – 15.
 - 16 – 20.
 - Greater than 20.
4. Do you practice dentistry at any time during the year in Florida?
 - Yes. If yes, proceed to question 5.
 - No. If no, please answer the following:
 - 4a. the main reason you have a Florida license, but don't practice dentistry is (choose only one)
 - Educator/academic appointment
 - Retired
 - Malpractice Insurance Rates
 - Liability Exposure
 - Medicare/Medicaid Reimbursement Rates
 - Private Health Plan Reimbursement Rates
 - Maintain primary residence out of state
 - Unable to secure employment
 - Personal choice
 - Job related health issue
 - Other
 - 4b. Do you currently live in Florida?
 - Yes.
 - No.

4c. if you do not currently practice dentistry in Florida, do you plan to practice dentistry in Florida in the future?

- Yes, in 1-2 years
- Yes, in 3-4 years
- Yes, but I am not sure when
- I do not plan to practice dentistry in Florida

If you DO NOT practice dentistry or otherwise work as a dentist in Florida, you are now finished with the survey. Thank you.

5. How many months did you practice in Florida in the last 12 months?
 - 1-2 Months.
 - 3-4 Months.
 - 5-6 Months.
 - 7-8 Months.
 - 9-10 Months.
 - 11-12 Months
6. Approximately how many hours do you practice in an average week?
 - 0 – 10.
 - 11 – 20.
 - 21 – 30.
 - 31 – 40.
 - Greater than 40.
7. How many patients on average do you see per week?
 - 1 – 25.
 - 26 – 50
 - 51 – 75
 - 76 – 100
 - Greater than 100
8. Please use the drop down box to indicate the type of practice. (Check all that apply).
 - General practice.
 - Dental Public Health.
 - Endodontics.
 - Oral and Maxillofacial Pathology.
 - Oral and Maxillofacial Radiology.
 - Oral and Maxillofacial Surgery.
 - Orthodontics and Dentofacial Orthopedics.
 - Pediatric Dentistry.
 - Periodontics.
 - Prosthodontics.

9. Please use the drop down box to indicate which type of anesthesia or sedation services your practice offers. (Check all that apply).
- None.
 - Nitrous Oxide Inhalation Analgesia.
 - General Anesthesia.
 - Conscious Sedation.
 - Pediatric Conscious Sedation.
10. Which description best describes your primary practice setting?
- Office Practice-Solo Practice.
 - Office Practice-Group Practice-Single Specialty.
 - Office Practice-Group Practice-Multi Specialty.
 - County Health Department.
 - Community Health Center.
 - Federally Qualified Health Center.
 - State Correctional Facility Clinic.
 - Other State Government Clinical Setting.
 - Military Facility Clinic.
 - VA clinic.
 - Academic Institution.
 - Other
11. Do you have any academic appointments?
- Yes. If you answered yes, please answer 11a. below.
 - No.
- 11a. what specific “academic appointments” do you currently hold?
Please check all that apply
- Tenured full-time faculty.
 - Non-tenured full-time faculty.
 - Adjunct or part-time faculty.
 - Clinical faculty.
 - Administrative faculty.
12. Which best describes your practice arrangement?
- Owner (sole or co-owner).
 - Employee.
 - Independent Contractor.
 - Other
- 12a. if you are an employee or independent contractor, do you work for more than one employer or in more than one practice setting?
- Yes.
 - No.

13. How many years have you been in your current primary practice setting and/or position?
- 0 – 1.
 - 2 – 5.
 - 6 – 10.
 - 11 – 15.
 - 16 – 20.
 - Greater than 20.
14. Do you practice in the same county as which you live?
- Yes, some of the time.
 - Yes, all of the time.
 - No.
15. In what Florida County (ies) do you practice dentistry? (You may select up to 5 counties - See pp. 6-7 for county codes) Please indicate the number of hours dedicated to each location.

Numerical Code	County Name	0-10 Hrs Per Week	11-20 Hrs Per Week	21-30 Hrs Per Week	31-40 Hrs Per Week	41-50 Hrs Per Week	More than 50 Hrs Per Week

16. Are you currently accepting new patients?
- Yes.
 - No.
17. Do you have a Medicaid number?
- Yes.
 - No.
18. Approximately how many Medicaid patients did you see in the last year?
- None.
 - 1 – 10.
 - 11 - 20.
 - 21 – 50.
 - 51 – 100.
 - Greater than 100.
19. Are you currently accepting new Medicaid patients?
- Yes.
 - No. If no, please answer the following:

20a. if no, which of the following reasons might best explain why you are not accepting new Medicaid patients? (Check all that apply)

 - Low compensation
 - Billing requirements
 - Too much paperwork
 - Practice is at full capacity
 - Concerned about fraud issues
 - Concerned about liability issues
 - Specialty or adult primary practice services are not covered by Medicaid.
 - Other

20. How many hours of volunteer dental service did you provide in the last two years (most recent biennial license period)?
- None
 - 1-8 hours
 - 9-16 hours
 - 17-24 hours
 - 25-30 hours
 - 31-60 hours
 - 61-120 hours
 - Greater than 120 hours
21. Where did you provide volunteer dental services in the past year? Check all that apply.
- I did not provide any volunteer dental services
 - In private office, on my own
 - In private office, as part of an organized event (e.g. Give Kids a Smile Day, etc.)
 - At a safety net clinic (e.g. County Health Department, Community Health Center, FQHC, etc.)
 - As part of a health fair
 - As part of a school event
 - International charitable organization
 - Other
22. Did you donate any dental equipment or money to pay for dental services in the last year?
- Yes.
 - No.
23. Do you plan to leave the profession in the next 5 years?
- Yes. If yes, please answer 23a and 23b. below.
 - No
- 23a. If yes, the main reason for retiring (Check only one):
- Age
 - Health
 - Time to retire
 - Compensation
 - Family
 - Liability Exposure
 - Malpractice Rates
 - Reimbursement Rates
 - Administrative issues
 - Job related health issue
 - Other
- 23b. if yes, do you plan to maintain a limited license for volunteering?
- yes
 - no

24. Approximately how many patients with special healthcare needs (physically or mentally disabled) did you see in the last year?

- None.
- 1 – 5.
- 6 - 10.
- 11 – 20.
- 21 – 50
- 51 – 100.
- Greater than 100.

25. Do you speak any other languages besides English?

- Yes. If yes, please answer 26a below.
- No.

25a. what foreign languages do you speak?

- Spanish
- Portuguese
- French
- German
- Italian
- Russian
- Polish
- Creole
- Chinese
- Japanese
- Korean
- Vietnamese
- Tagalog
- Arabic
- Hebrew
- Other

County Names and Numeric Codes (Reference for question # 16)

11 ALACHUA
12 BAKER
13 BAY
14 BRADFORD
15 BREVARD
16 BROWARD
17 CALHOUN
18 CHARLOTTE
19 CITRUS
20 CLAY
21 COLLIER
22 COLUMBIA
23 DADE
24 DESOTO
25 DIXIE

26 DUVAL
27 ESCAMBIA
28 FLAGLER
29 FRANKLIN
30 GADSDEN
31 GILCHRIST
32 GLADES
33 GULF
34 HAMILTON
35 HARDEE
36 HENDRY
37 HERNANDO
38 HIGHLANDS
39 HILLSBOROUGH
40 HOLMES
41 INDIAN RIVER
42 JACKSON
43 JEFFERSON
44 LAFAYETTE
45 LAKE
46 LEE
47 LEON
48 LEVY
49 LIBERTY
50 MADISON
51 MANATEE
52 MARION
53 MARTIN
54 MONROE
55 NASSAU
56 OKALOOSA
57 OKEECHOBEE
58 ORANGE
59 OSCEOLA
60 PALM BEACH
61 PASCO
62 PINELLAS
63 POLK
64 PUTNAM
65 ST.JOHNS
66 ST.LUCIE
67 SANTA ROSA
68 SARASOTA
69 SEMINOLE
70 SUMTER
71 SUWANNEE

72 TAYLOR
73 UNION
74 VOLUSIA
75 WAKULLA
76 WALTON
77 WASHINGTON
78 UNKNOWN
79 OUT OF STATE
80 FOREIGN

APPENDIX B: Detailed Methods

Florida statute and administrative rules require renewal of dental licenses biennially by the end of February of even-numbered years. The most recent renewal period ended on February 28, 2010. The Florida Department of Health (DOH) prepared and administered separate workforce surveys of dentists and dental hygienists to coincide with the license renewal process. As part of their on-line renewal, dentists and hygienists were asked and encouraged to complete a survey. Those renewing by paper form had the option to download a survey, complete and submit it with their renewal paperwork. Approximately 10 percent of dentists and six percent of hygienists opted for license renewal by paper. Their survey responses were added to responses made on-line. In this way, the survey reached virtually all of Florida's active dentists and dental hygienists. The only group not exposed to a survey were dentists and hygienists initially licensed within 120 days of February 28, 2010. A total of 74 dentists and 82 hygienists fall into this group.

The surveys were designed to obtain information unavailable elsewhere concerning Florida's dental workforce to better inform and shape public healthcare policy and plan for future workforce needs. Analysis of responses is guided by those objectives. To supplement information obtained from the survey, additional information from the Florida Legislature's Office of Economic and Demographic Research, the 2008 Florida Behavioral Risk Factor Surveillance System Report, the Medicaid Management Information System, and the Florida Department of Health, Division of Medical Quality Assurance was used in the analysis.

Because any workforce count is inevitably date specific, the reference date for this report is June 23, 2010. Licensure information was "frozen" on that date for use in identifying dentists with active licenses. In contrast to licensure information, practice status as summarized in this report is not tied to a single, specific reference date. Information concerning practice status was obtained from the workforce survey, which was completed over a period of months beginning in October 2009 and ending in June 2010 (for late renewals). Changes in practice status occurring between survey completion and the report reference date would not be reflected in the data. Thus, counts or estimates of dentists actively practicing or not practicing in Florida are approximate with respect to the report's reference date.

A total of 10,578 dentists responded to the survey, representing an unadjusted response rate of 92.5 percent of the 11,441 dentists renewing a license. These numbers include late renewals in the period between March 1 and June 23, 2010. While the unadjusted response rate is not uninformative, further editing of the data helps to concentrate the analysis on the primary topic of the survey: dentists who are currently practicing in Florida.

Given that practicing dentists are a subset of dentists with active licenses, licensure information maintained by DOH helps to screen respondents by identifying dentists who are ineligible to practice. Table B.1 illustrates this use. Summarized in the table is the license status of survey respondents as of June 23, 2010. Only the first three rows in the table represent categories eligible for active practice in Florida, but these comprise nearly 98 percent of the respondents. The remainder are dentists with a license status that has changed since the survey (e.g., because of death) or those with renewal of non-active licenses (e.g., inactive licenses, which also are subject to renewal requirements). For purposes of analysis, respondents with non-active licenses are of limited interest, and they will be considered separately. The 10,311 survey respondents with an active license represent 89 percent of all Florida dentists with active licenses as of June 23, 2010. A total of 1,272 dentists with an active Florida license did not respond to the survey. However, demographic and address information on non-respondents is available and was used in the analysis.

Table B.1. License Status of Dentists Responding to the Workforce Survey of Dentists

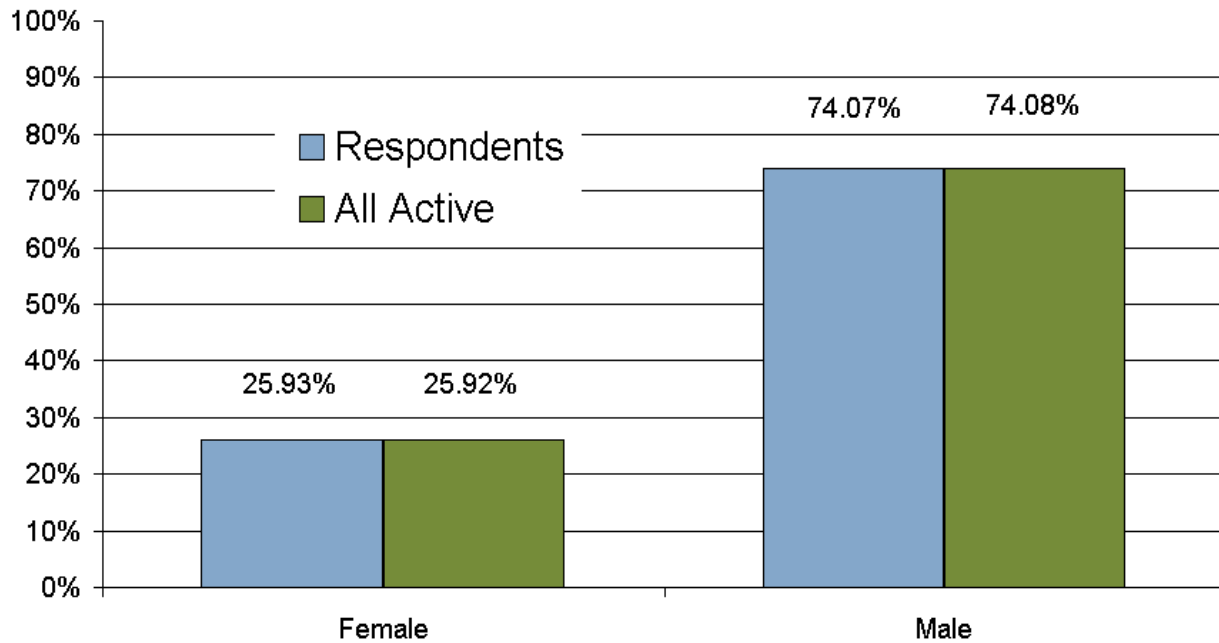
License Status as of June 23, 2010	Respondents	
Active - Clear	10,229	96.70%
Active - Obligations	73	0.70%
Active - Probation	9	0.10%
Inactive - Clear	102	1.00%
Military Active	74	0.70%
Retired	55	0.50%
Active - Delinquent	12	0.10%
Null and Void	5	0.00%
Active - Voluntary Withdrawal	5	0.00%
Deceased - Closed	4	0.00%
Inactive - Delinquent	3	0.00%
Active - Suspended	2	0.00%
Disciplinary - Relinquished	1	0.00%
Revoked	1	0.00%
Voluntary - Relinquished	1	0.00%
Active - Emergency Suspense	1	0.00%
Inactive - Obligations	1	0.00%
Total	10,578	100.00%

Source: Division of Medical Quality Assurance Licensure File, DOH Workforce Dental Survey, 2009-10

At 89 percent of all dentists with an active Florida license, survey respondents constitute a large, albeit non-random, sample of active-license Florida dentists. The size of the sample serves to mitigate potential biases associated with non-random selection. Moreover, available data allow comparison of the sample with the entire active-license population in key demographic characteristics: gender, race/ethnicity, and age. Such comparison can further support the representative nature of the sample.

Figure B.1 displays the aggregate gender composition of the sample and the population, revealing their virtual equivalence. Males consistently outnumber females about three to one.

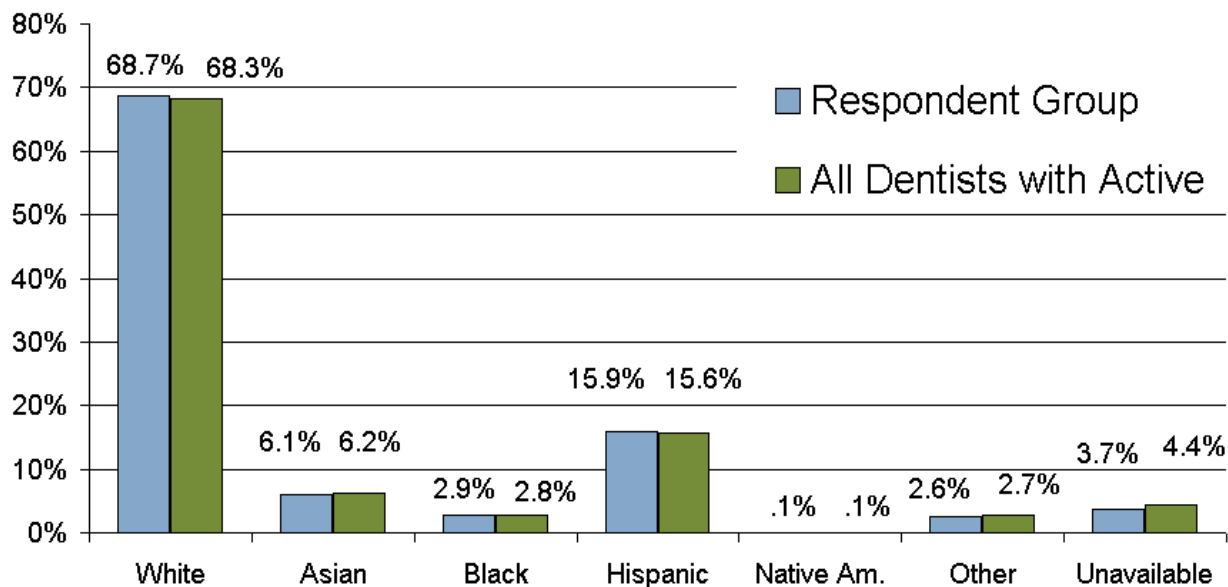
Figure B.1. Gender Distribution: Survey Respondents versus All Dentists with Active Florida Licenses*



*Survey respondents and all dentists with active licenses as of June 23, 2010
 Source: Workforce Dental Survey, 2009-10

Figure B.2 illustrates the distribution of survey respondents and all dentists with an active Florida license by race/ethnicity. As with gender, a pattern of near equivalence holds. In both groups, slightly more than two-thirds are white. Hispanics follow with nearly 16 percent, and Asians are third with just over six percent. Combined, whites, Hispanics, and Asians constitute more than 90 percent of survey respondents and of all dentists with an active Florida license.

Figure B.2. Distribution by Race\Ethnicity: Survey Respondents versus All Dentists with Active Florida Licenses*

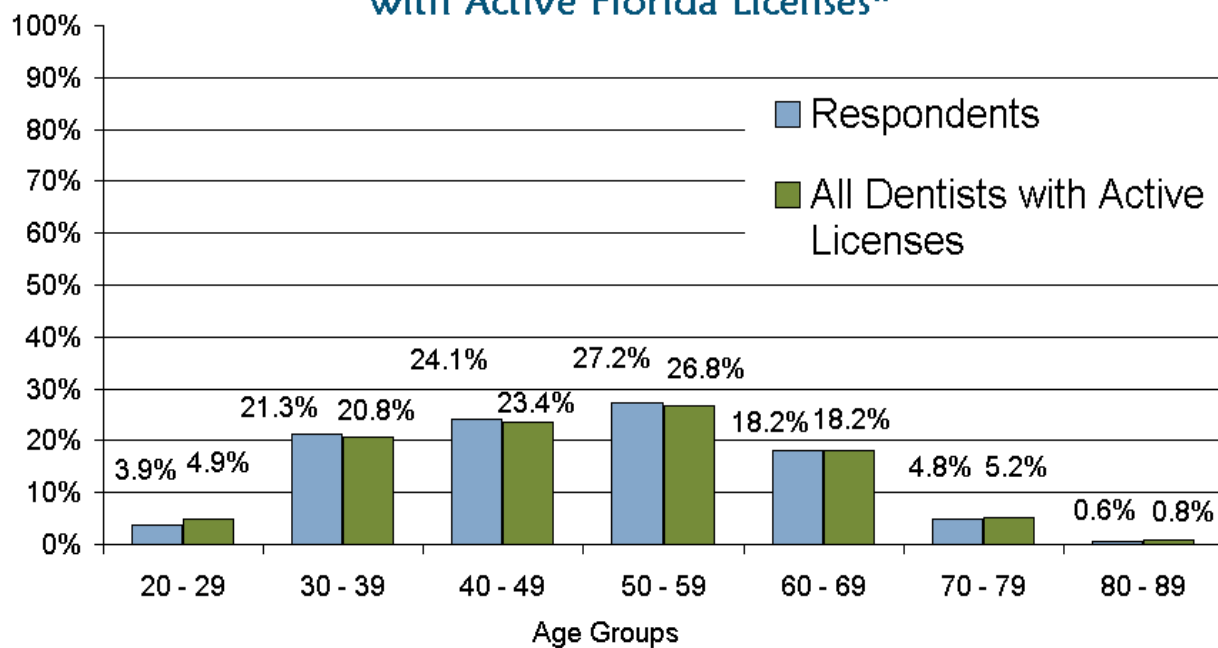


*Survey respondents and all dentists with active licenses as of June 23, 2010

Source: Workforce Dental Survey, 2009-10

Figure B.3 illustrates the age-group composition of survey respondents and all dentists with an active Florida license. For age groups 30 years and over, relative distributions of survey respondents and all active-license dentists reflect differences of less than one percentage point. The age group 20 – 29 shows the greatest difference, with the percentage of all active-license dentists exceeding the comparable percentage of respondents by one percentage point, 4.9 percent to 3.9 percent.

Figure B.3. Distribution by Age Groups: Survey Respondents versus All Dentists with Active Florida Licenses*

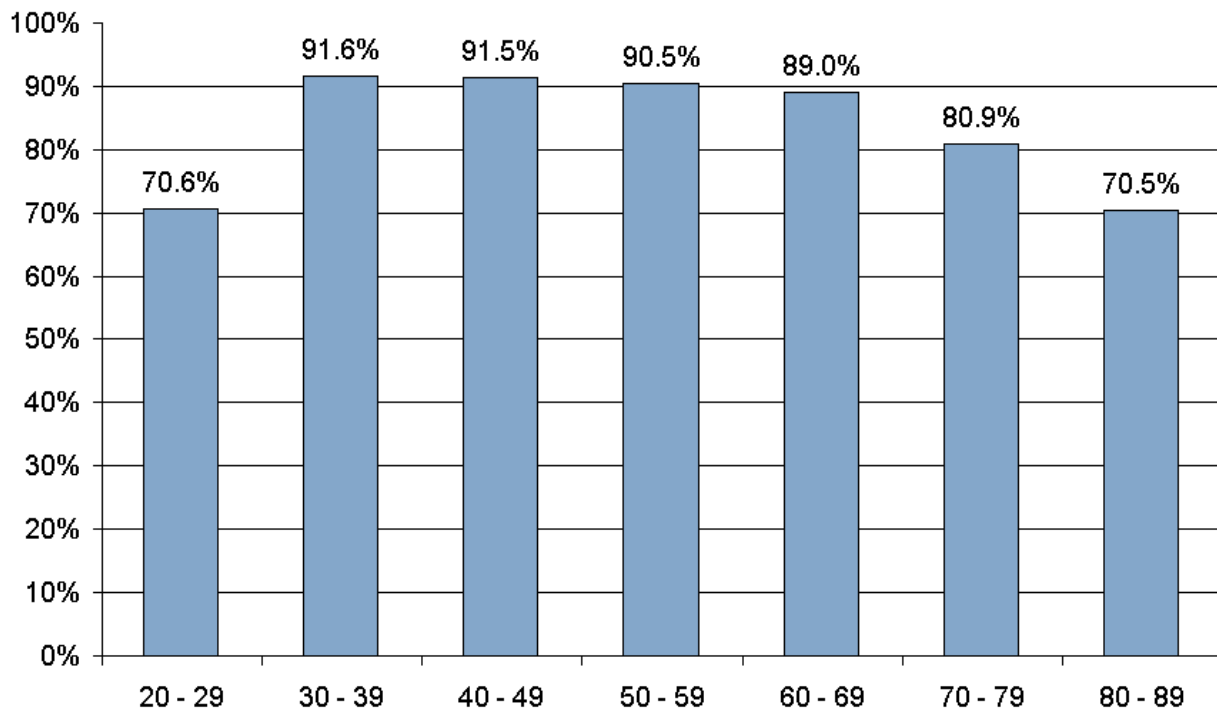


*Survey respondents and all dentists with active licenses as of June 23, 2010

Source: Workforce Dental Survey, 2009-10

Figure B.4 illustrates survey response rates by age group, explaining why the percentage of all active-license dentists exceeds the comparable percentage of respondents by one percentage point. Age groups 30 – 39, 40 – 49, 50 – 59, and 60 – 69 years have response rates close to the aggregate response rate of 89 percent. These groups represent more than 90 percent of respondents. Age groups 20 – 29, 70 – 79, and 80 – 89 years have response rates below average. The lower response among the youngest of these groups may reflect the absence from the survey of dentists licensed within 120 days of February 28, 2010. Under sampling of certain age groups may have some small bearing on generalizations regarding the wider population. Overall, however, the demographic profile of survey respondents conforms closely to that of all dentists with an active Florida license.

Figure B.4. Rate of Survey Response by Age Group*

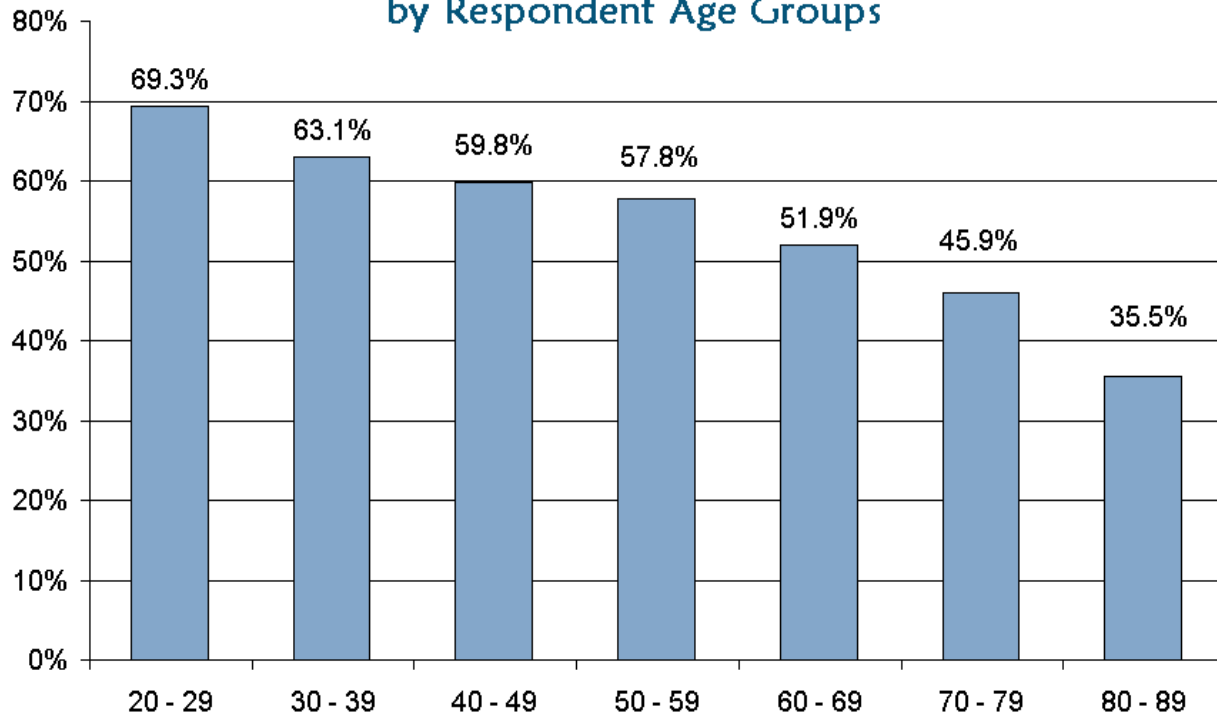


*Respondents and all dentists with an active Florida license as of June 23, 2010

Source: Workforce Dental Survey, 2009-10

The survey's high response rate does not imply a high completion rate: Among respondents, 58.1 percent completed all required questions, while 49.1 percent did not respond to one or more required items. The actual number of required questions varied by respondent based on answers to certain "branch" questions. Patterns of full completion reflect differences in gender, age, and race/ethnicity of respondents. Females completed all required questions at a slightly higher rate than males, 59.2 percent versus 57.7 percent. Hispanics had the lowest rate of completion (56 percent) among the race/ethnic groups. By age group, a steady decline in completeness of response is evident, as illustrated in Figure B.5. The youngest respondents had a rate of full completion almost twice that of the oldest.

Figure B.5. Rate of Full Survey Completion by Respondent Age Groups



Source: Dental Workforce Survey, 2009-10

Among respondents with unanswered questions, more than three-quarters (78.9 percent) neglected to answer only one or two questions. Fewer than eight percent failed to answer five or more items. Although the rate of partial incompleteness is high among respondents, the extent of incompleteness per respondent is not high. This fact should mitigate potential sampling bias associated with incomplete survey response.

Appendix C: FLORIDA ORAL HEALTHCARE WORKFORCE INITIATIVES AND DOCUMENTS

The 2009-10 Workforce Survey of Dentists follows a number of other initiatives focused on oral healthcare. A brief summary of these initiatives provides some background for the survey.

1. Department of Health Oral Healthcare Workforce Ad Hoc Advisory Committee

The Oral Healthcare Workforce Ad Hoc Advisory Committee was convened in 2008 to evaluate and strategically address the complex range of oral health workforce concerns. These include issues surrounding public policy, professional practice, supply and demand of services, current and projected education and training, and regulatory questions. The committee's final recommendations were published in a report in February of 2009.

2. Health Practitioner Oral Healthcare Workforce Ad Hoc Committee Report: Executive Summary

Florida, with the fourth largest population in the United States, has a diverse population residing in 67 disparate counties. This diversity of population and counties creates challenges in access to healthcare. While there have been considerable improvements in oral health in the state over the last 30 years, the State Surgeon General realizes that many persons in Florida, especially the disadvantaged, are not receiving basic dental care. While there are many factors that contribute to this lack of care, the inadequate availability or access to dental providers throughout the State is a major concern. Oral health is essential to general health and well-being. The lack of basic oral healthcare for all people in Florida contributes to the number of people experiencing poor general health. In response to this issue, the State Surgeon General established the Florida Health Practitioner Oral Healthcare Workforce Ad Hoc Committee (Committee) to act as the advisory body for the State oral healthcare workforce initiative. The Committee was comprised of multiple governmental and nongovernmental stakeholders. The mission of the Committee was to evaluate and address the complex range of oral health workforce concerns that impact Florida's ability to recruit or retain available practicing dental providers (dentists, dental hygienists, and dental assistants), especially for Florida's disadvantaged and underserved populations. Through a series of meetings spanning 10 months, the Committee actively reviewed, assessed, and recommended strategies. Staff and invited guests provided the Committee members with information about workforce and workforce trends in Florida and around the country through reviews of the literature, presentations on select topics, and descriptions of best practices from other states. From this information, the Committee proposed and reviewed an extensive list of strategies. Over the course of meetings, the Committee engaged in vigorous discussion and acted in a spirit of cooperation in an effort to find

solutions that will best meet the state's current and future dental workforce needs. The Committee agreed on the following observations:

- **Education and prevention** are crucial to improving the oral health of all people in Florida.
- **New models for the delivery of dental healthcare services** may be necessary to provide access to dental care for certain disadvantaged population groups in Florida.
- **Safety net providers** such as County Health Department (CHD) and Community Health Center (CHC) dental services are essential to providing dental care to underserved and disadvantaged populations.
- **There is a need for adequate and appropriate training** as a requirement for any provider, program, or new model of dental care delivery in the state of Florida.
- **Most underserved populations** (e.g. low-income children, individuals with special healthcare needs, seniors) require dental services provided by general dentists who receive additional training and experience in working with special populations as opposed to specialty dentists with post graduate specialty degrees.
- **Reliable qualitative and quantitative data** can provide clear insight about workforce options that may address access issues. Data on Florida workforce, dental needs, and disadvantaged populations is incomplete and should be improved.

The Committee recognizes that no one strategy will solve all of the workforce issues. Consequently, the following strategies are all of equal importance and should be considered as such. After review and deliberation of multiple strategies, the Committee proposes the following recommendations grouped in five broad categories in no particular order of importance. These strategies are the beginning steps toward improving access to quality dental healthcare services for all persons in Florida.

Public Oral Health Education and Prevention Services

- Expand community-based oral health prevention services.
- Expand oral health education and preventive programs in schools.

Third Party Payer Issues

- Reduce Medicaid administrative burdens for providers.
- Increase Medicaid reimbursement rates.
- Reduce Medicaid administrative burdens for patients.

Recruitments/Incentives to attract Providers to Public Health Dental Positions

- Examine the compensation and improve the work environment for state-employed dental providers in public health delivery systems such as county health departments (CHDs), Community Health Centers (CHCs), and Federally Qualified Health Centers (FQHCs).
- Fund the loan forgiveness program, reestablishing the Florida State Health Service Corps and increase utilization of the National Health Service Corps.
- Strengthen the local, regional, or statewide coordinated volunteer workforce.
- Provide technical assistance to communities wishing to recruit dental providers through the construction or equipping of dental office space in exchange for provision of dental services in their community.

Legal/Policy Approaches to Expand Workforce or Services

- Expand duties and reduce supervision levels for allied dental providers who practice in health access settings.

Training of Providers

- Provide dental school extern or residency opportunities in safety net programs.
- Establish short-term training programs in pediatric dentistry.

The Committee recognizes that implementing these strategies is not without challenges; many will require policy changes and/or new funding sources. Despite known and as yet unknown barriers to their implementation, the Committee believes these strategies have the greatest potential to affect the dental workforce in Florida and ultimately expand the availability of dental care to Florida's most vulnerable populations. The Committee offers these observations and recommendations to provide guidance to policymakers, professional organizations, advocates, and the public as they consider how to address implementation of strategies that can positively affect Florida's dental workforce challenges.

3. Florida Oral Health Workforce Workgroup supported by a Health Resource Services Administration (HRSA) Grant

This workforce initiative built upon the recommendations of the State Oral Health Improvement Plan (SOHIP) and the Surgeon General's Ad Hoc Oral Healthcare Workforce Committee Report. Drawing upon the Department of Health's and SOHIP's existing partnerships, collaborations, and experiences, a statewide oral health workforce workgroup was convened in the fall of 2008. The workgroup was charged with initiating a statewide oral health needs assessment and developing a realistic strategic plan that will act as a blueprint to improve the

State's oral health workforce and service delivery infrastructure. Their report was made available in January of 2010.

Goal 1: Increase Education and Preventive Efforts

Recommendations:

- Develop oral health messaging utilizing traditional and non-traditional media
- Increase community water fluoridation
- Increase the provision of fluoride treatments to children – fluoride mouthrinse and fluoride varnish
- Increase the provision of dental sealants to age-appropriate children

Goal 2: Improve Data Collection

Recommendations:

- Produce a periodic statewide needs assessment
- Conduct dentist and dental hygienist workforce surveys
- Develop and implement a statewide oral health surveillance system
- Initiate targeted surveys of at-risk populations
- Develop dental provider recruitment and retention surveys – Medicaid providers County Health Department (CHD) providers, etc.
- Survey families who are eligible for the KidCare, Medicaid, and other government funded programs to assess perceptions and utilization issues of those programs

Goal 3: Increase Provider Participation in the Medicaid Program

Recommendations:

- Determine the feasibility of an increase in reimbursement rates
- Reevaluate and suggest recommendations for the Medicaid reform initiative
- Eliminate administrative barriers and improve administrative processes
- Improve the knowledge base of providers about Medicaid policies and procedures

Goal 4: Increase Utilization of Allied Dental Staff

Recommendations:

- Reduce supervision levels of dental assistants in health access settings
- Reduce supervision levels of dental hygienists in health access settings
- Explore the creation of a restorative dental assistant for health access settings

Goal 5: Integrate Oral Health Education and Prevention into General Health and Medical Programs

Recommendations:

- Include oral health education, screenings and prevention in programs that serve children and parents

- Include oral health education, screenings and prevention in school health programs
- Include oral health coverage in healthcare reform
- Promote the concept of the dental home
- Integrate oral health education, screenings, and prevention into nursing homes and long term care (LTC) facility health programs
- Integrate oral health curriculum into medical education programs
- Integrate oral health education, prevention and awareness into other Florida Department of Health programs such as Chronic Disease and Tobacco and other programs that include health components such as Head Start and the Department of Education

Goal 6: Increase Training Opportunities for Providers

Recommendations:

- Develop models to train dental providers in the care of very young children
- Continue oral health preventive training for licensed medical providers
- Develop externships/residencies for dental, dental hygiene, and dental assisting students in CHD and Community Health Center (CHC) facilities
- Provide anesthesia/sedation training to CHD and CHC dentists at Florida dental schools
- Provide incentives to providers to receive training in the treatment of the needs of “special” populations (e.g. children, the elderly, individuals with special healthcare needs)

Goal 7: Improve the State Oral Health Infrastructure

Recommendations:

- Increase funding, staffing, awareness, and visibility of the Florida Department of Health’s Public Health Dental Program to establish it as a state leader and authority on oral health
- Continue to expand the membership and geographic coverage of the Oral Health Florida Coalition
- Increase and improve the oral health safety net
- Develop centers of excellence for special needs populations
- Consider increasing the use of mobile dental units/vans in rural areas or for other isolated populations
- Investigate the use of new technology such as teledentistry, health information technology and electronic dental records to improve access to care in rural areas or for other isolated populations
- Continue the Oral Health Workforce Workgroup

Goal 8: Increase Efforts to Recruit Practitioners to Provide Care to Disadvantaged Populations

Recommendations:

- Implement the Florida Health Services Corps (section 381.0302 F.S.) by funding the loan forgiveness program

- Market the National Health Services Corps and other public health opportunities
- Improve minority recruitment
- Market the health access license and limited license to out of state licensed providers
- Develop incentives to increase volunteerism
- Review sovereign immunity policies to determine potential mechanisms to increase the delivery of volunteer services
- Consider requiring a year of providing dental care in an underserved area as a condition for all applicants wishing to take the Florida dental and dental hygiene licensing examination and gaining a Florida dental license
- Establish local and statewide dental referral networks for defined populations
- Make dental, dental hygiene and dental assisting students aware of public health and public health practice opportunities and make working in public health dental programs more appealing through marketing and partnerships

4. Florida Oral Health Workforce Statewide Needs Assessment

This assessment provided a statewide analysis of Florida’s oral health workforce relative to traditionally underserved populations. Additionally, the assessment served to evaluate access to dental care among low-income children in Florida’s Medicaid and SCHIP programs, including children with special healthcare needs (CSHCN), and to identify the child and family characteristics that are associated with better access. The key findings are as follows:

- The workforce-to-population ratio is lowest in rural counties and low-income counties with less variation based on the racial and ethnic composition of the population.
- Counties in the lowest quartile of workforce-to-population ratios typically had at least one type of safety net provider.
- A substantial proportion of publicly insured children are not receiving recommended preventive dental care.
- The youngest publicly insured children, those ages 0–4 years, are significantly less likely than older children to have a dental visit.
- KidCare enrollees with significant acute or chronic conditions (versus healthy), those whose parents had a high school education or greater (versus no high school degree), and those who had a primary care provider medical visit (versus no visit) were more likely to have a dental visit.
- Although the workforce-to-population ratio is lowest in rural counties, we did not find lower rates of dental utilization among KidCare enrollees in rural areas compared to urban areas.

These findings are consistent with other state and national analyses of the oral health workforce distribution and dental utilization of publicly insured children. Additional data collection and analyses are recommended to better understand the reasons for use and non-use of dental care services among vulnerable and disadvantaged populations, the barriers that they face in accessing care, and the challenges and barriers to recruiting and retaining providers to serve these populations.