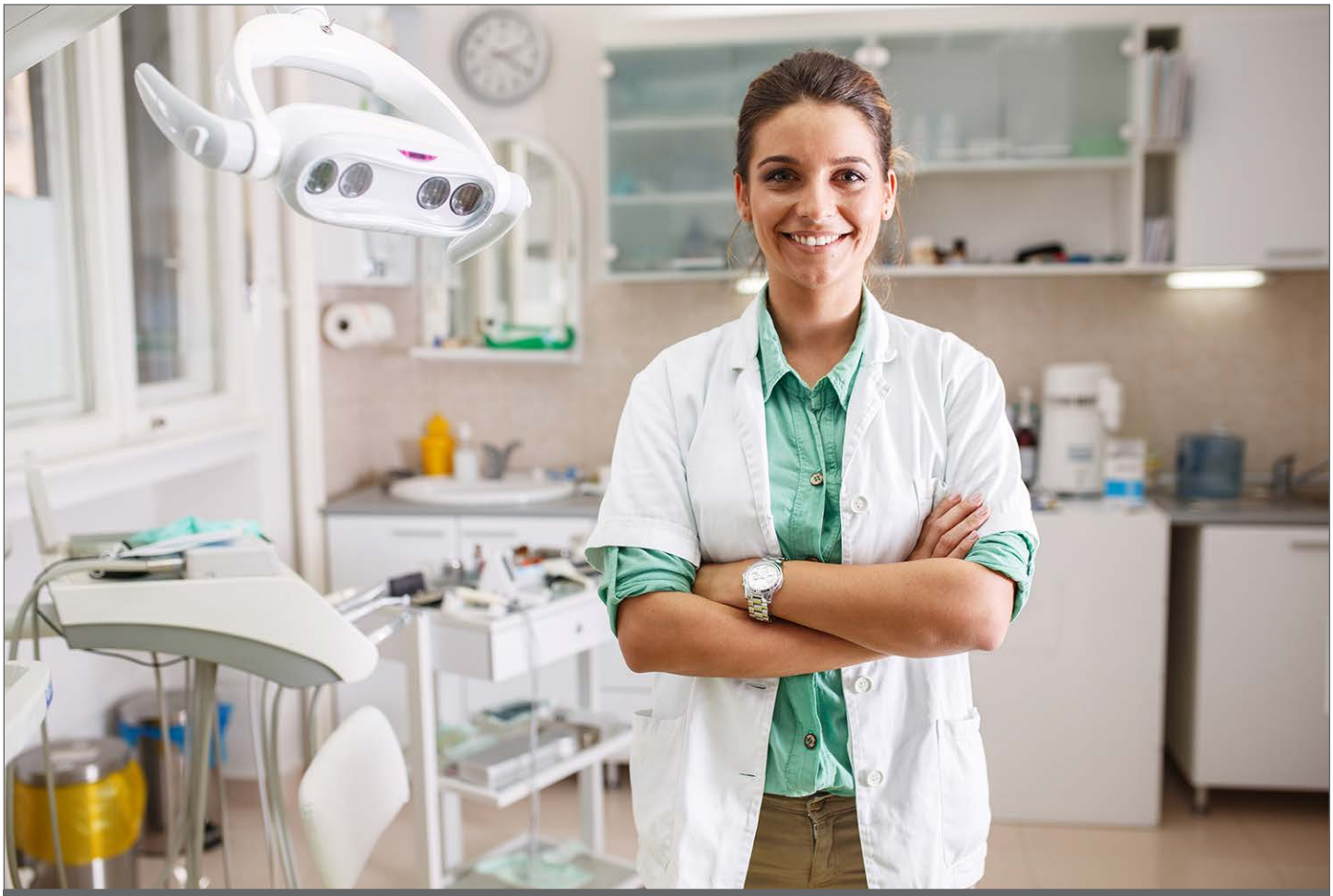
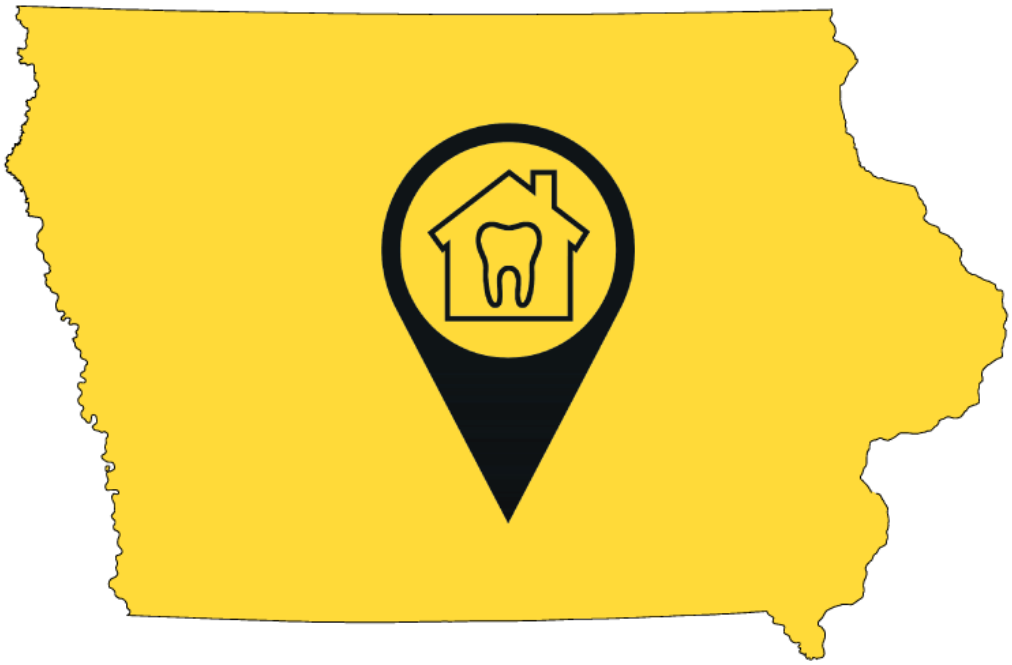
Chapter 2: Executive Summary and Operational Definitions



Iowa Dentist Workforce Atlas, 1997-2016: 20 Years of the Iowa Dentist Tracking System



Executive Summary.

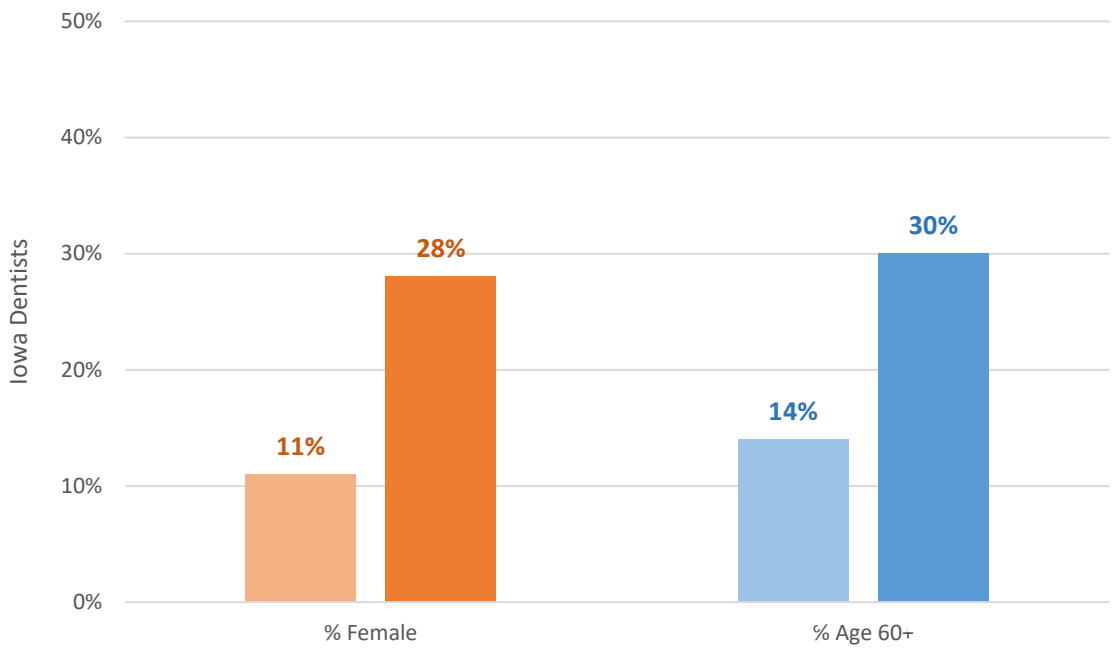
This report describes historical dentist workforce trends in the state of Iowa using data from the Iowa Dentist Tracking System (IDTS). The IDTS is a longitudinal workforce tracking system maintained by the University of Iowa Office of Statewide Clinical Education Programs, which also tracks 4 additional health professions in addition to dentists: physicians, pharmacists, physician assistants, and advance practice nurses. These tracking systems are unique in their comprehensiveness of data collection and maintenance, as well as their longevity. This atlas describes 20 years of historical dentist workforce trends since the inception of the IDTS in 1997.

Key findings from this report are included below, and include only dentists *actively practicing* in the state of Iowa:

The total number of dentists in Iowa increased only 7%, from 1,446 in 1997 to 1,530 in 2016. The statewide population-to-dentist ratio remained constant, from 1,974 Iowans per dentist in 1997 to 2,031 in 2016, demonstrating that the slight increase in total dentists mirrored statewide population trends during this time. The growth in dentist workforce (7%) is far less than the growth among other health professions in Iowa, including physicians (21%), pharmacists (20%), advanced practice nurses (189%), and physician assistants (84%).

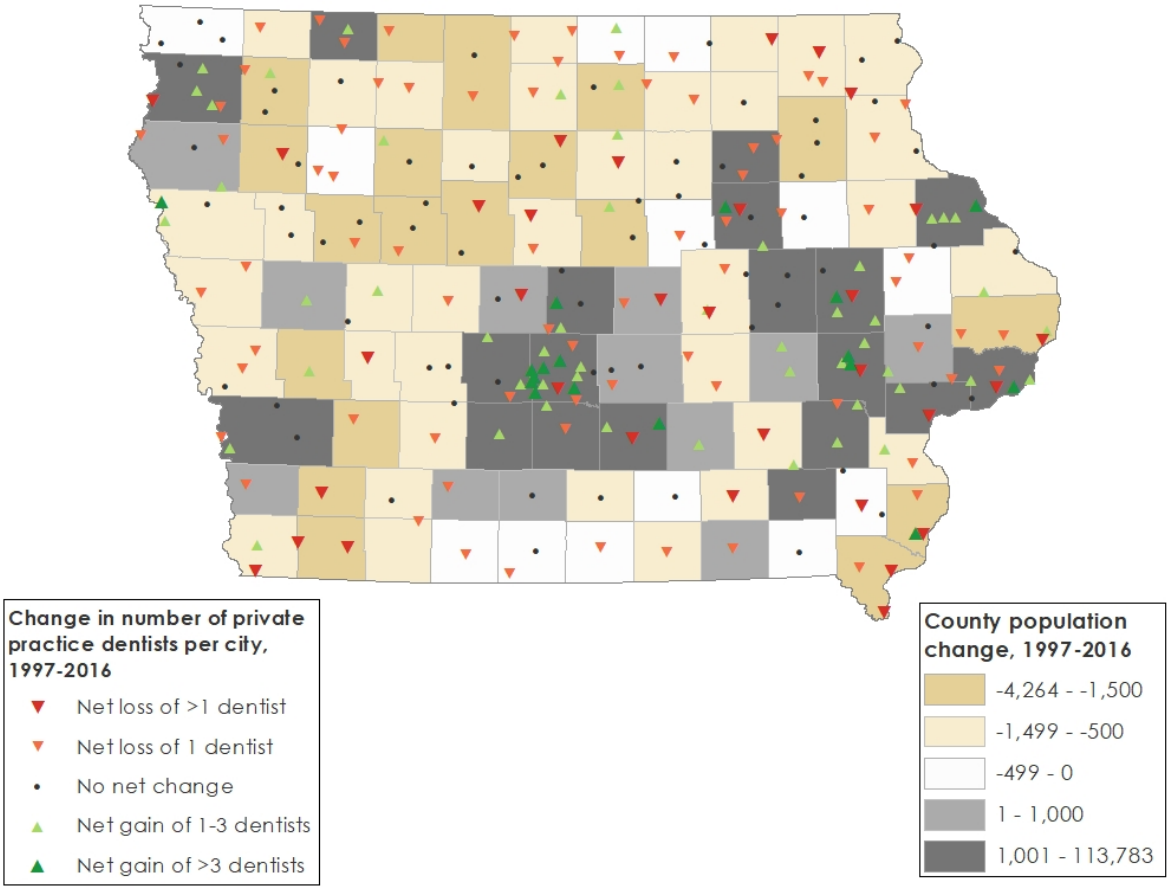
Annually since 1997, more than 9 in 10 Iowa dentists work in private practice, and 8 in 10 are general dentists. The proportion of dentists in private practice has remained constant from 93% in 1997 to 91% in 2016. The proportion of dentists who were in general practice also remained constant from 80% in 1997 to 79% in 2016.

A large male cohort of dentists is approaching retirement with concurrent increases in representation of women in the workforce. Similar to national trends, there was a substantial increase in female representation in the workforce, increasing from only 11% in 1997 to 28% in 2016. The share of dentists aged 60 and older who were predominantly male increased from 14% in 1997 to 30% in 2016.



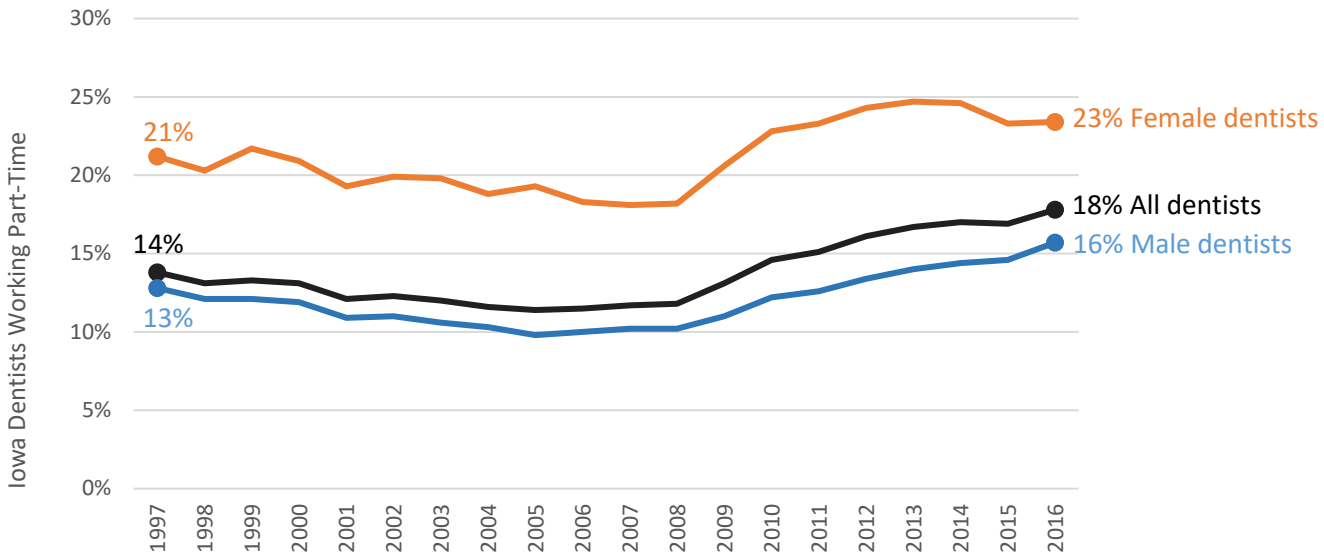
Three-quarters of Iowa dentists are University of Iowa graduates, and over 6 in 10 Iowa dentists were born in Iowa. Whereas the proportion of dentists who graduated from the University of Iowa College of Dentistry has remained stable at 74-75% since 1997, the proportion who were born in Iowa has decreased from 70% in 1997 to 63% in 2016.

A decline in rural dentist supply mirrors population shifts in rural areas of the state. There was a 16% decline in the number of dentists working in rural areas from 1997-2016, and among dentists entering the workforce during this time period, only 28% chose to work in a rural county.



Group practices are now the dominant arrangement for dental care delivery in Iowa. The proportion of private practice dentists working in solo practice declined from 59% in 1997 to 41% in 2016. As of 2008, group practice replaced solo practice as the dominant practice arrangement among Iowa dentists. This is, in part, a function of age, as younger dentists are considerably more likely to go into group practice than solo practice.

Almost 1 in 5 Iowa dentists worked part-time, or less than 32 hours per week, in 2016. This proportion decreased from 13% in 1997 to 11% in 2005 and has steadily increased to 18% in 2016. Female dentists were substantially more likely to practice part-time compared to male dentists throughout the time period; in 2016, 23% of female dentists worked part-time compared to 16% of male dentists.



Twenty-five counties in Iowa have experienced persistent dentist shortages over the past half century. Dentist shortages, as defined by HRSA, have a population-to-dentist ratio of more than 3,000:1. These counties are scattered throughout the state, with the predominant clusters in the south-central region.

The statewide population-to-dentist ratio remained stable at approximately 2,000:1 throughout the study period; however, overall trends mask a declining trend in workforce adequacy. Statewide population-to-dentist ratios that include only private practice, general dentists under age 60 who work full time have increased substantially from 3,266:1 to 4,590:1 during the study period, reflecting shifts in the age distribution and increases in part-time work.

Operational Definitions

Active dentist: an Iowa-licensed dentist who performs the function of a dentist within the state of Iowa. Thus, it does not include dentists who maintain an Iowa license but who practice elsewhere. Active dentists exclude graduate students, interns, and residents who are licensed but still completing their training.

Dental Health Professional Shortage Area (HPSA): a federal designation indicating that there is a shortage of dentists for a specified geographic region, usually a county. HPSAs may either be geographic, population group (i.e., low-income, lack of Medicaid providers), or a facility. The last category includes correctional facilities and Federally Qualified Health Centers (FQHC).

Dental specialist: a graduate from a dental school who has received additional training (2 or more years) in a Commission on Dental Accreditation-approved program in any of 9 American Dental Association-recognized specialties:[1] dental public health, endodontics, oral and maxillofacial pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics and dentofacial orthopedics, pediatric dentistry, periodontics, and prosthodontics.

General dentist: a graduate (DDS or DMD) from an accredited US dental school who has not participated in additional post-graduate training in a recognized dental specialty. General dentists also include dentists who have completed either an accredited general practice residency or an advanced education in general dentistry program. Likewise, operative dentistry, which is now recognized by the American Dental Association as an interest area in general dentistry, is considered a general dentist for this report.

Full-time: For this report, a full-time dentist is defined as any active dentist who works 32 or more hours per week, on average, in the field of dentistry. (In recent years the American Dental Association lowered its definition's parameters to apply to any dentist who works 30 or more hours per week.) Earlier Iowa studies (e.g., 1970s and 1980s) that were conducted by other researchers used 35 or more hours per week to define full-time employment.

Practice activity: In the Iowa Dentist Tracking System (IDTS), this refers to the dentist's primary activity. Categories include: private practice, dental school faculty, administration/other, state/federal employment, community health/local government, hospital staff dentist, veterans administration, and research.

Practice arrangement: In the IDTS, this is the organizational type of practice in which the dentist participates. Although there are many subcategories for group practice (e.g., 2 member partnership/association, 3-4 member group/single specialty, 3-4 member group/multi-specialty), for this report we have limited the arrangement types to the following categories: solo practice, group practice, hospital-sponsored practice, other (when the practice activity is dental school faculty), and corporate. Corporate is a newer category, making its IDTS debut in 2011.

Practice attrition (exit or outflow): when a dentist ceased to be an active dentist in Iowa. The most common forms of attrition are retirement and relocation to another state. Other reasons for attrition include death, advanced education, loss of license, and military service.

Practice entry (inflow): when a dentist initially practiced in Iowa.

[1] Dental anesthesiology became the 10th recognized specialty in 2019.

Private practice dentist: Includes dentists whose primary occupation involves patient interaction exclusive of dental school faculty, armed forces, hospital staff, and other federal, state, or local government employees.

Population-to-dentist ratio: The size of the population (for state or county) divided by the number of dentists in the same location (e.g., state or county). For instance, a county with 10,000 residents and 4 dentists would have a population-to-dentist ratio of 2,500:1. Oftentimes, this figure may be expressed as the dentists per XXX population. For the aforementioned example, this would be written as either 4 per 10,000 or 40 per 100,000 population.

Pull factor: Ratio that is calculated by dividing the county's trade area capture by its resident population. A ratio greater than 1 "suggests that the county's merchants are attracting shoppers from outside the county." Conversely, a ratio less than 1 "indicates that the county's retail sector cannot satisfy all of the retail needs of its own residents." The source of these county data is the Retail Trade Analysis Report Fiscal Year 2017, which was developed by Department of Economics, Iowa State University.

Rural-Urban Continuum Codes (RUCCs): The Rural-Urban Continuum Codes are a classification system used by the US Department of Agriculture and approved by the Office of Management and Budget (OMB) to "distinguish metropolitan counties by the population size of their metro area, and nonmetropolitan counties by degree of urbanization and adjacency to a metro area." Each county in the United States is assigned one of 9 codes, with 3 metro and 6 non-metro (rural) categories. See Table 6 for descriptions of each category.

Typology (county): The US Department of Agriculture classifies all U.S. counties "according to six mutually exclusive categories of economic dependence" including: farming, mining, manufacturing, federal/state government, recreation, and non-specialized. See page 163 for information about how each category was developed.