



Issue Brief
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**Changes in
Urbanicity of Iowa
Dentists' Practice
Locations, 1997-2013**

Second Brief in a Series

Julie C. Reynolds, DDS, MS
Visiting Assistant Professor

Susan C. McKernan, DMD, MS, PhD
Assistant Professor

Raymond A. Kuthy, DDS, MPH
Professor

Background

In this brief we examine trends in practice location of Iowa's dentist workforce from 1997-2013. Numerous influences on practice location have been identified, including the age and sex of dental practitioners, size of the community where the dentist was born, race/ethnicity, and family factors.¹⁻⁴ Practice location is particularly important because it impacts geographic access to dental care for residents of rural areas, where shortages of health professionals are more common. As Iowa's dentist workforce ages, especially those practicing in rural areas, citizens will likely face decreased access to dental care in the coming decade.²

Approach

The Iowa Dentist Tracking System (IDTS) is the primary source of data for this issue brief series. The IDTS is part of the University of Iowa's Office of Statewide Clinical Education Programs, which tracks state workforce information for five health professions: physicians, pharmacists, dentists, physician assistants, and advanced practice nurses. The dentist tracking system was established in 1997. Since then, all dentists actively practicing in Iowa have been contacted every six months to update information regarding individual and practice characteristics.⁵ In this series, the term "active dentist" refers to those who are currently practicing in the state. We only include private practice dentists in this issue brief because the aim is to examine the fluidity of practice location over time.

We used the United States Department of Agriculture's 2013 Rural-Urban Continuum Code (RUCC) system to classify counties as urban or rural. RUCCs are determined by population size and adjacency to a metro area. Codes 1-3 represent metro (or urban) counties and 4-9 represent non-metro (or rural) counties.⁶

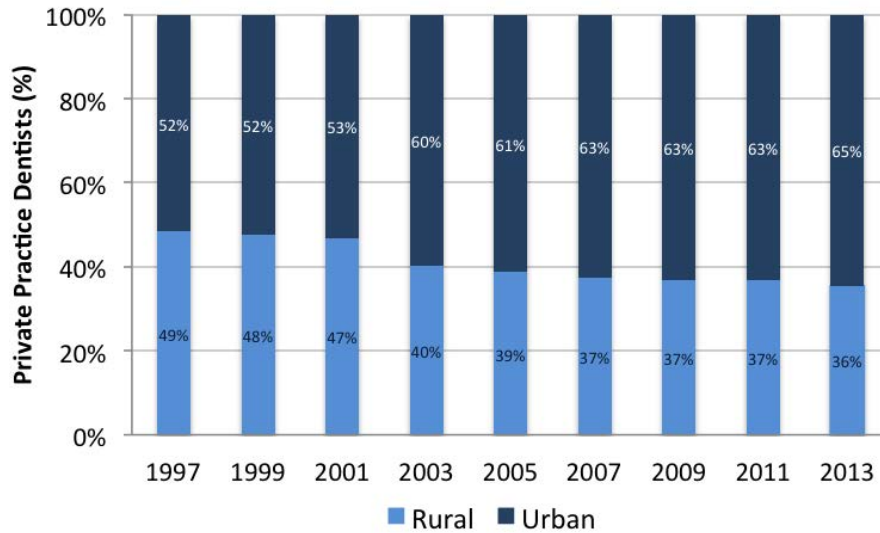
Results

Decline in Dentists Practicing in Rural Areas

From 1997 through 2013, the proportion of dentists working in rural counties decreased steadily from 49% (n = 658) to 36% (n = 516) (Exhibit 1). The decline in rural practice has been a concern since the 1960s when an aging rural dentist workforce fueled workforce studies and recruitment programs.⁷ As more dentists approach retirement age, the problem of rural access to dental care will likely continue to grow in the coming decades.⁸

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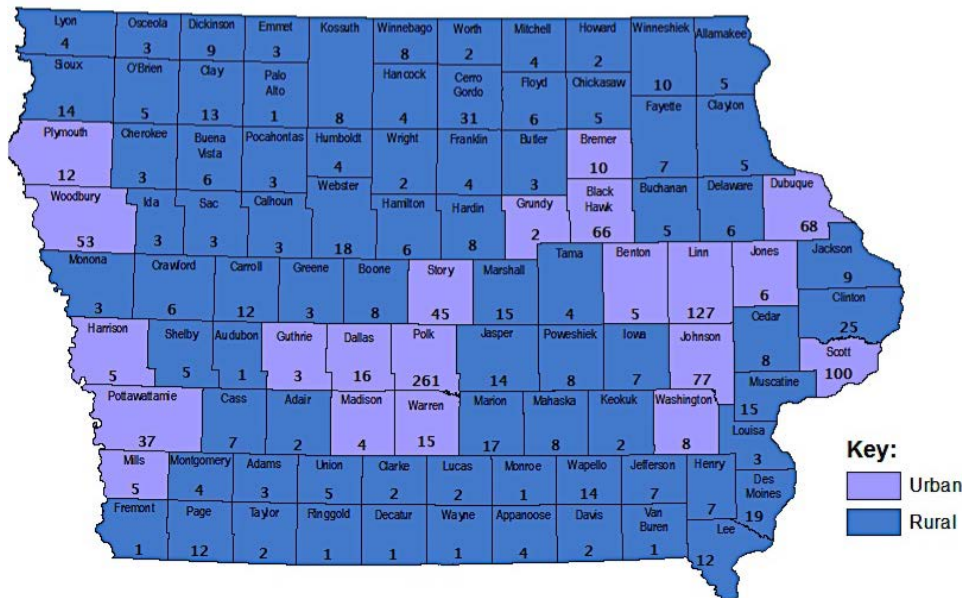
Exhibit 1. Practice location urbanicity of Iowa private practice dentists, 1997-2013



Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

Exhibit 2 shows the number of private practice dentists located in Iowa’s urban and rural counties in 2013. Over one third of private practice dentists (n=488) were concentrated in three metro counties: Polk, Linn, and Scott. The total population in these three counties comprises 27% of the population in the state of Iowa.

Exhibit 2. Number of private practice dentists working in urban and rural counties, 2013 (n=1,343)



Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

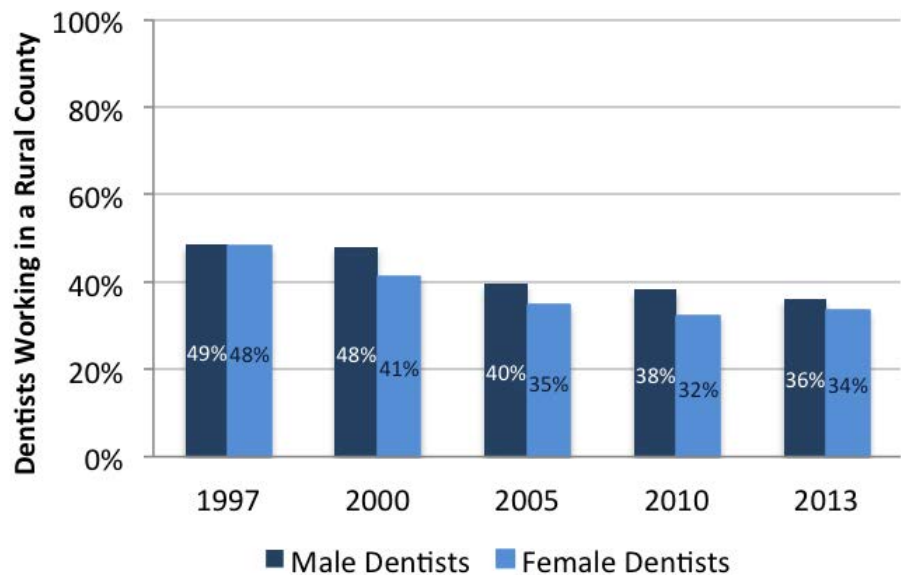
In 2013, over one third of Iowa’s private practice dentists were concentrated in three counties.

Dentist Characteristics Associated with Rural Practice Location

Gender

The proportions of male and female dentists working in rural counties experienced similar declines between 1997-2013 (Exhibit 3). In 2013, 36% of male dentists and 34% of female dentists practiced in rural counties. A consistently and slightly higher proportion of male dentists practiced in rural areas compared to the proportion of female dentists. This gender differential is consistent with previous studies on dentist workforce, which have also found that men are more likely than women to practice in rural areas.^{2,9,10} However, this difference appears to be diminishing over time in Iowa.

Exhibit 3. Private practice dentists working in rural counties, by sex, 1997-2013



Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

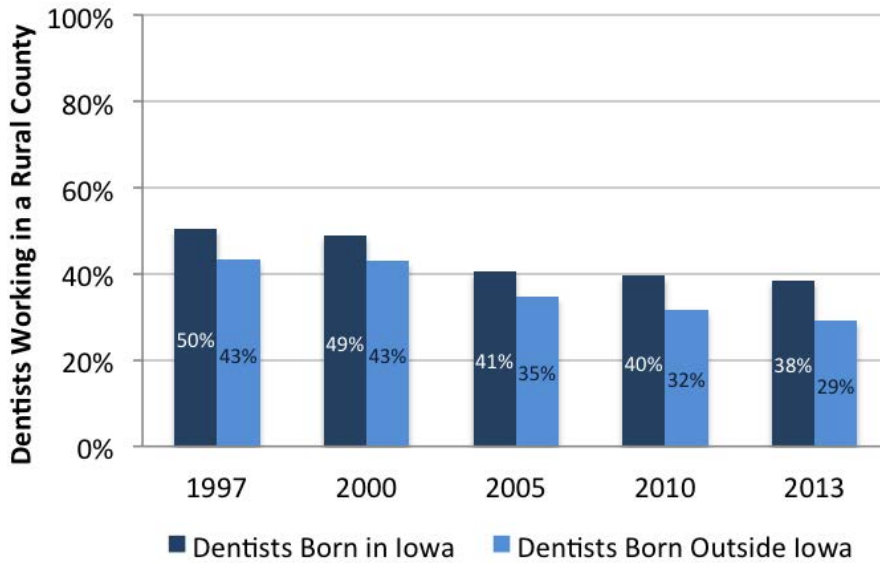
Dentists born in Iowa were consistently more likely to practice in rural counties compared to their counterparts born in other states.

Birth State

The decline in rural practice is consistent regardless of where dentists were born. The proportion of Iowa dentists who were born in Iowa, as well as the proportion of those born outside the state, showed similar declines in rural practice from 1997-2013 (Exhibit 4). However, dentists born in Iowa were consistently more likely to practice in rural counties compared to their counterparts born in other states; in 2013, 38% of Iowa-born dentists practiced in rural counties, whereas only 29% of dentists who were born in other states did.

Several studies across many health professions and geographic areas have found that individuals who grew up in rural areas are more likely to return to rural areas.^{9,11,12} The tendency for rural residents to practice in rural areas after completing their training has encouraged many medical and dental schools to recruit applicants originally from rural areas.^{13,14} While our data do not include information about dentists' hometowns, it is likely that a similar relationship exists for Iowa dentists as well.

Exhibit 4. Private practice dentists working in rural counties, by birth state, 1997-2013

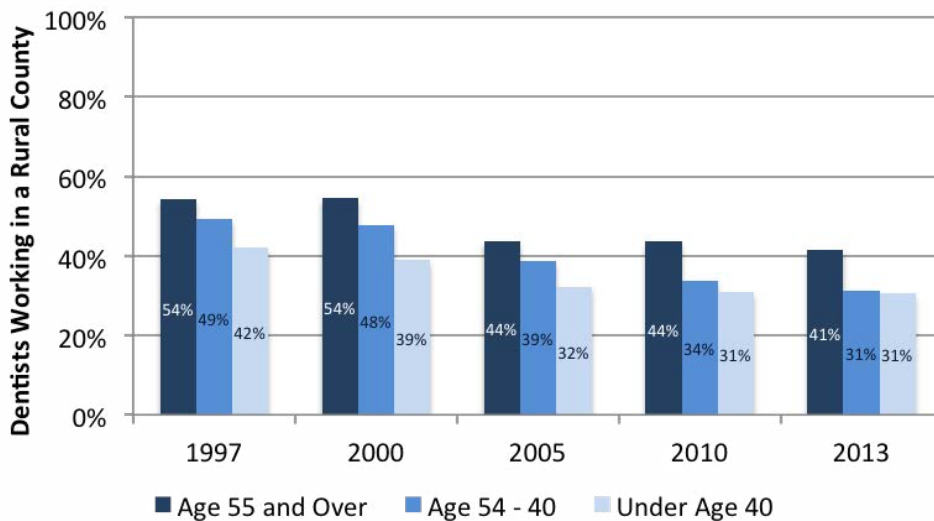


Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

Age and Graduation Year

Nationally, older dentists are more likely to practice in rural areas than younger dentists¹⁰ and the Iowa dentist workforce shows a similar trend.² From 1997-2013, private practice dentists over age 55 were consistently the most likely to practice in a rural county compared to their younger cohorts. In 2013, 41% of dentists age 55+ practiced in a rural county, whereas only 31% of younger dentists did (Exhibit 5). However, there was still an overall decline during that time period in the proportion of dentists of all age groups who practice in rural counties.

Exhibit 5. Private practice dentists working in rural counties, by age, 1997-2013

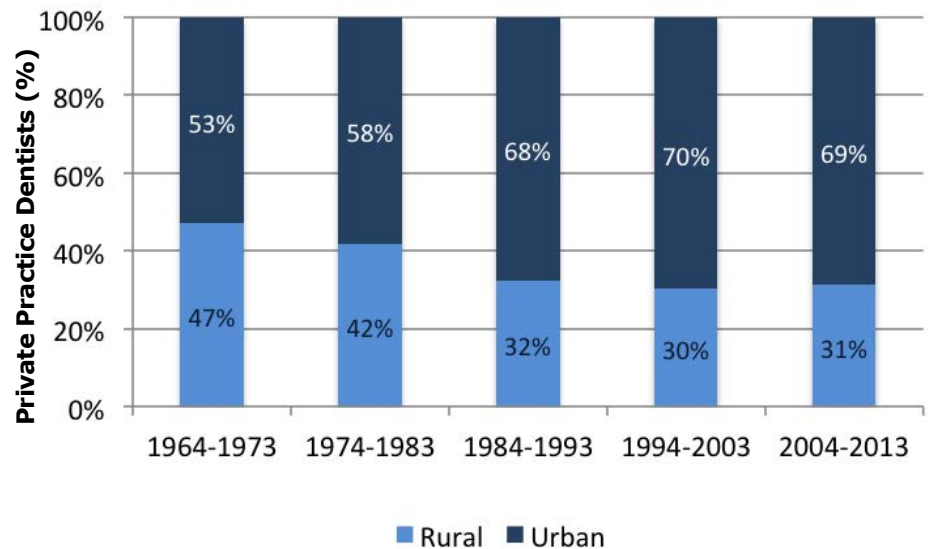


Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

From 1997-2013, private practice dentists over age 55 were consistently the most likely to practice in a rural county compared to their younger cohorts.

This trend is also apparent when we correlate the number of dentists choosing rural practice locations with their graduation year. In 2013, the most recent dental graduates were considerably less likely to practice in a rural county compared to dentists who graduated 30 to 40 years prior (Exhibit 6).

Exhibit 6. Location of Iowa private practice dentists by graduation year, 2013 (n=1434)



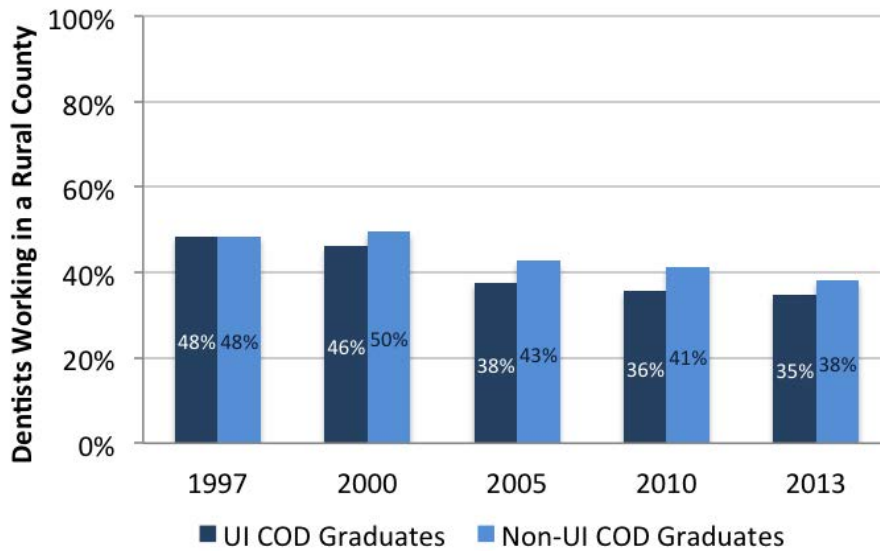
In 2013, the most recent dental graduates were considerably less likely to practice in a rural county compared to dentists who graduated 30 to 40 years prior.

Sources: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine; Registrar, University of Iowa College of Dentistry

Dental School Attended

The dental school that Iowa dentists attended is also related to practice in a rural county. From 2000-2013, private practice dentists who graduated from the University of Iowa College of Dentistry (UI COD) were slightly less likely to practice in a rural county when compared to those who did not attend the University of Iowa. In 2013, 35% of UI COD graduates and 38% of non-UI COD graduates practiced in rural counties (Exhibit 7). This trend has been previously documented for the state of Iowa², but few studies of other states have examined whether practice location is related to the dental school attended.

Exhibit 7. Private practice dentists working in Iowa rural counties, by dental school attended, 1997-2013



Source: Iowa Health Professions Tracking Center, Office of Statewide Clinical Education Programs, UI Carver College of Medicine.

Conclusions & Policy Implications

This brief examines 17 years of historical dentist workforce data to document trends in Iowa’s dentist workforce by specialty, age, sex, dental school attended, and birth state. These results show a decline in the proportion of Iowa’s private practice dentists who work in rural areas, which is consistent across gender, dental school attended, birth state, age, and graduation year. Fewer young dentists practicing in rural areas, combined with a large proportion of dentists nearing retirement age poses potential challenges to ensuring access to dental care for Iowa’s rural residents.

Author Information

Julie Reynolds is a visiting assistant professor, Susan McKernan is an assistant professor, and Raymond Kuthy is a professor at the University of Iowa College of Dentistry and the University of Iowa Public Policy Center.

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Endnotes

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