

# Office of Rural Health and Primary Care Health Care Workforce

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## Minnesota's Dentists 2008

*Dentists renew their Minnesota licenses annually with the Minnesota Board of Dentistry. Data in this report is gathered from that annual renewal process and from a voluntary survey conducted by the Office of Rural Health and Primary Care (ORHPC).*

### **Number of dentists**

According to the Minnesota Board of Dentistry, Minnesota had 3,909 licensed dentists at the end of 2008. The exact number of dentists working in Minnesota is not known. Some were retired or not working as dentists, and many lived or practiced in other states.

Based on survey responses and licensing data from the Minnesota Board of Dentistry, the Office of Rural Health and Primary Care estimates approximately 2,970 dentist were practicing at least part time at Minnesota practice sites in 2007-08. This estimate reflects survey respondents' answers about their employment status and place of work; comparable data is not available for other states. (For explanation of this estimate, see the methodological note at the end of this report). The ORHPC has been gathering licensure data since 2003, and the estimated number of practicing dentists in Minnesota has not changed significantly since then.

The most recent data permitting comparisons to other states is from the United States Health Workforce Profile (2006).<sup>1</sup> This study, which is based on undated data from the Kaiser Family Foundation, reported that Minnesota had 60.2 dentists per 100,000 population, only slightly above the national rate of 59.4. Minnesota had more dentists per capita than any of its neighboring states.

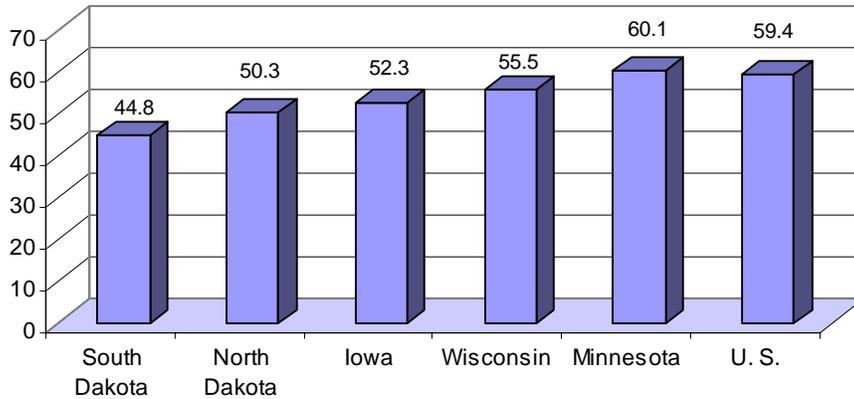
The ORHPC workforce surveys permits a more current estimate of dentists working at least part time at a practice site in Minnesota. Using the July 1, 2007, population estimate for Minnesota, the ORHPC estimate of 2,970 dentists equates to 57 active dentists per 100,000 people. The per capita number is lower than the 60 per 100,000 reported in the Health Profile, partly because the Health Profile used 2004 population estimates.

The following data is for dentists who work at least parttime at a primary practice site in Minnesota, according to the Office of Rural Health and Primary Care survey of dentists renewing licenses in 2007-08.



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**Dentists per 100,000 Population, 2006**

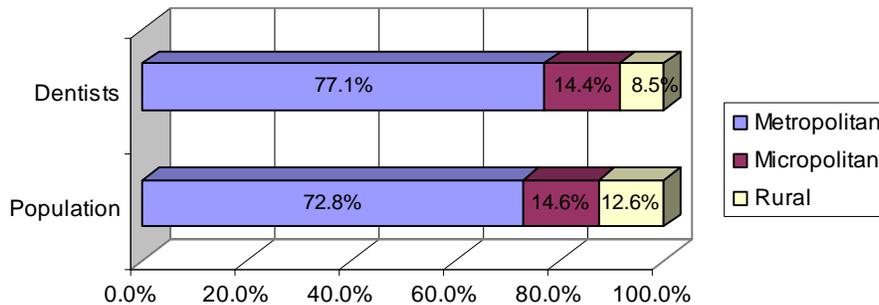


## Geographic Distribution, gender and age

### Geographic Distribution

- Dental practices are mostly located in metropolitan areas and small cities and regional centers.
- The 46 most rural counties have 13 percent of the state's population, but only nine percent of the state's practicing dentists.

**Geographic Distribution of Dentists Compared to Population**



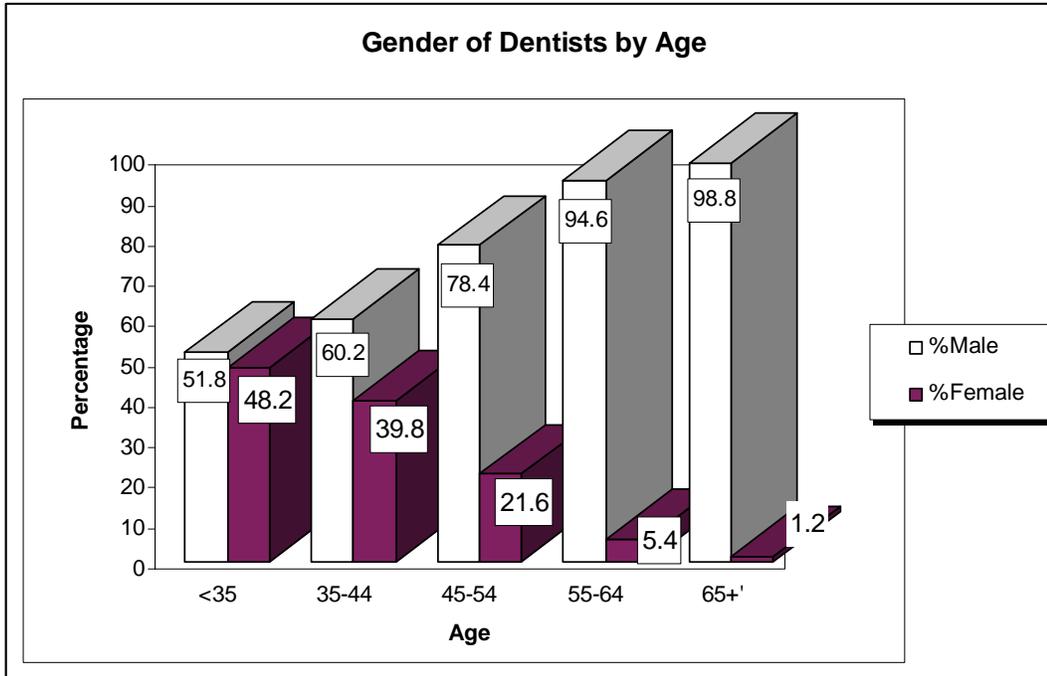
### Geographic Distribution of Active Minnesota Dentists

	2007 Population	% Population	% Dentists
Statewide	5,231,106	100.0%	100.0%
Metropolitan counties	3,810,396	72.8%	77.1%
Micropolitan counties	761,302	14.6%	14.4%
Rural counties	659,408	12.6%	8.5%

Portions of 38 counties, mostly in rural western and northern Minnesota, and large parts of Minneapolis and St. Paul, are designated dental health professional shortage areas (maps online at <http://www.health.state.mn.us/divs/orhpc/shortage/index.html>).

## Gender and age

- Twenty-one percent of all dentists are female. However, females account for 48 percent of dentists under age 35 and 40 percent of dentists 35 to 44 years old. This is the first time that the number of active female dentists under age 35 has approached 50 percent of all dentists in Minnesota.
- Nearly all dentists age 55 or older are males. The vast majority of retiring dentists over the next 5-10 years are male.
- Approximately 60 percent of female dentists are under age 45.



## Gender and location

- Females account for 23 percent of dentists in metropolitan counties, but only 14 percent of dentists in micropolitan and rural counties.
- Eighty-four percent of female dentists practice in metropolitan areas and only 6 percent practice in rural counties.

AGE	Respondents	% MALE	% FEMALE
<b>All dentists</b>	1,749	79.0%	21.0%
<b>Under 35</b>	197	51.8%	48.2%
<b>35-44</b>	314	60.2%	39.8%
<b>45-54</b>	536	78.4%	21.6%
<b>55-64</b>	534	94.6%	5.4%
<b>65 and older</b>	168	98.8%	1.2%
<b>Metropolitan</b>	1,346	77.1%	22.9%
<b>Micropolitan</b>	250	85.6%	14.4%
<b>Rural</b>	148	85.8%	14.2%

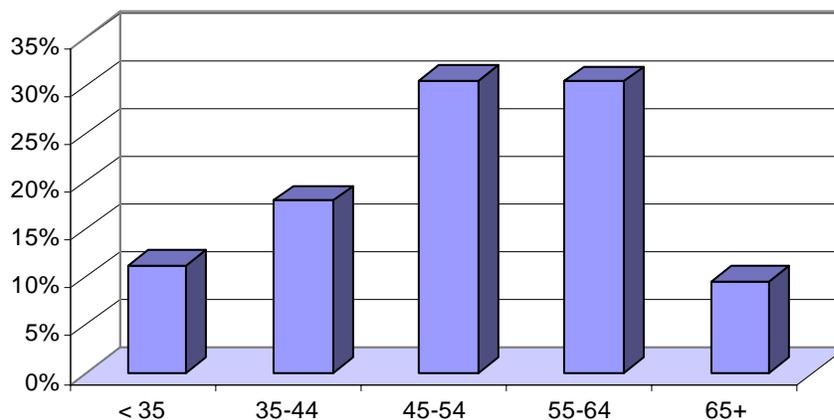
### Age of Dentists Active in Minnesota by Location

- Half of all dentists are 50 years old or older; 40 percent are 55 or older.
- Rural dentists are older than urban dentists. The greatest difference appears when the median age (51) of dentists in metropolitan area counties is compared to the median age (55) for the 46 rural counties.
- More than half of dentists in rural counties are 55 or older. Only 24 percent are under 45, compared to 30 percent of dentists in metropolitan areas.

### Age Distribution of Active Minnesota Dentists

Age Group	Statewide n = 1,749 respondents	Metropolitan n = 1,346 respondents	Micropolitan n = 250 respondents	Rural n = 148 respondents
Median age	52 yr.	51 yr.	52 yr.	55 yr.
Less than 35	11.3%	11.3%	11.2%	10.8%
35-44	18.0%	18.6%	16.8%	13.5%
45-54	30.6%	31.1%	32.8%	24.3%
55-64	30.5%	29.8%	28.0%	40.6%
65 and older	9.6%	9.2%	11.2%	10.8%
Total	100.0%	100.0%	100.0%	100.0%

Active Dentists by Age, 2008



### Race and ethnicity

Minnesota's dental workforce is mostly white.

- 93 percent of active dentists statewide are white. Asians, at 4 percent and mostly in metropolitan counties, account for the only significant number of minority dentists.
- Less than one percent of dentists identify themselves as of Hispanic or Latino origin.

### Active Minnesota Dentists by Race and Hispanic Origin

	Statewide	Metropolitan	Micropolitan	Rural
<b>White</b>	93%	92%	97%	93%
<b>American Indian</b>	*	*	*	2%
<b>Black/African-American</b>	1%	1%	*	*
<b>Asian/Pacific Islander</b>	4%	5%	2%	4%
<b>Other race</b>	1%	2%	*	2%
<b>Hispanic origin</b>	1%	1%	*	*

- less than .5 percent.

### Education

- Eighty percent of active Minnesota dentists received their dental training in Minnesota. The percentage of Minnesota-trained dentists is only slightly higher in rural than micropolitan or metropolitan areas.
- Eighty-two percent of active male dentists were trained in Minnesota, compared to 73 percent of female dentists.
- Younger dentists are more likely than older dentists to have received their dental education outside Minnesota. Eighty-six percent of active dentists 55 or older were trained in Minnesota, compared to only 72 percent of dentists under age 45.

	Percent educated in Minnesota
<b>All dentists</b>	79.9%
<b>Males</b>	81.8%
<b>Females</b>	73.1%
<b>&lt; 35 years old</b>	75.6%
<b>35-44 years</b>	70.3%
<b>45-54 years</b>	78.5%
<b>55-64 years</b>	86.4%
<b>65+ years</b>	87.3%
<b>Metropolitan counties</b>	79.0%
<b>Micropolitan counties</b>	82.6%
<b>Rural counties</b>	83.0%

### Career Longevity

- Nearly one-in-five (18 percent) active dentists plan to work another five years or less.
- Twenty-five percent of dentists aged 55-64 expect to work less than five more years. On the other hand, 40 percent in the same age bracket say they plan to work at least another 10 years.
- Seventeen percent of dentists under age 35 said they plan to work at most another five years. This figure may suggest a level of job dissatisfaction among young dentists or decisions to leave the workforce while raising children.
- Retirements are more imminent in rural areas, where 24 percent of active dentists aged 55-64 said they plan to continue working five or fewer years.

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**Plans to Continue Practicing in Minnesota, by Age Group and Geography**

	Plans to continue practicing in Minnesota		
	0-5 years	6-10 years	> 10 years
All dentists	18.1%	19.9%	62.1%
Males	20.2%	21.7%	58.1%
Females	9.9%	12.7%	77.3%
< 35 years old	17.4%	6.7%	75.9%
35-44 years	3.2%	5.8%	91.1%
45-54 years	4.2%	18.8%	77.1%
55-64 years	24.7%	35.6%	39.5%
65+ years	70.7%	14.6%	14.6%
Metropolitan counties	17.6%	20.2%	62.3%
Micropolitan counties	17.9%	19.4%	62.8%
Rural counties	23.9%	18.5%	57.5%

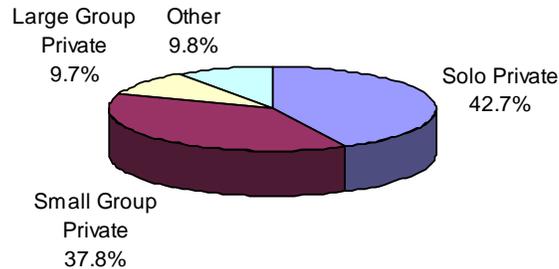
**Types of Practice**

- Ninety percent of Minnesota dentists work in private dental offices, with a somewhat larger share in group, as opposed to solo practices.
- Rural dentists are much more likely to be in solo private practices than dentists in metropolitan or micropolitan counties. Two-thirds (66 percent) of rural dentists are in solo practices, and only 28 percent in group practices.
- Only four in ten – 40 percent – of dentists in metropolitan counties are in solo practices.
- Males account for 87 percent of dentists in solo private practices.
- Forty-seven percent of male dentists are in solo private practices, compared to only 27 percent of females. Female dentists are significantly less likely than males to be in solo practices in all parts of the state – metropolitan, micropolitan and rural areas.

**Workplaces of Active Minnesota Dentists, 2007-08**

Type of Practice Site	Statewide	Metropolitan	Micropolitan	Rural
Total respondents	1,746	1,347	251	148
Solo private	42.7%	39.6%	46.0%	65.5%
Group private	47.5%	49.2%	52.0%	27.7%
Higher education	3.4%	4.1%	.8%	1.4%
School or community clinic	1.9%	2.0%	1.6%	2.0%
Hospital	.8%	.9%	-0-	1.4%
Institutional	.5%	.4%	1.2%	-0-
Long term care	.1	.1%	-0-	-0-
Staff model HMO	1.7%	2.0%	.8%	-0-
Other	1.4%	1.5%	.8%	1.4%

### Active Minnesota Dentists by Practice Type, 2008



### Gender of Active Minnesota Dentists by Type of Workplace. 2007-08

Type of Worksite	Respondents	% Male	% Female
All Sites	1,749	79.0%	21.0%
Solo private	745	86.8%	13.2%
Group private	828	73.8%	26.2%
Higher education	60	15.0%	85.0%

### Workplaces of Active Minnesota Dentists by gender, 2007-08

Type of Worksite	Males	Females
Respondents	1,378	367
Solo private	46.7%	27.0%
Group private	45.1%	59.4%
Higher education	3.7%	2.5%
School or community clinic	1.2%	4.6%
Hospital (acute care)	.7%	1.1%
Institutional	.5%	.5%
Long-term care facility	.1%	-0-
Staff model HMO	1.7%	1.6%
Other	.9%	3.3%

### Work Hours and Activities

- Two-thirds (67 percent) of dentists working in Minnesota report working 36 hours per week or less; the median hours worked in 2007 was 35.
- Fifty-eight percent work 21 to 36 hours.
- Female dentists work fewer hours than males. Twelve percent of females work 20 hours per week or less, compared to 7 percent of males; conversely, 35 percent of males work 37 hours or more, compared to only 28 percent of females.
- The difference between hours worked by males and females is not simply a function of the younger age of female dentists. Considering only dentists under age 40, ten percent of females work less

than 20 hours per week, compared to less than one percent of males. Only percent of females work more than 36 hours per week, compared to 44 percent of males.

### Hours Worked per Week by Active Minnesota Dentists, 2007-08

All Ages	All Dentists	Males	Females
Mean hours worked	33.9	34.3	32.2
Median hours worked	35.0	35.0	32.0
< 20 hours	8.5%	7.4%	13.3%
21-36 hours	58.5%	58.3%	59.7%
37-44 hours	26.8%	28.0%	22.2%
45 or more hours	6.2%	6.7%	5.8%
<b>Dentists under age 40</b>			
Mean hours worked	34.9	36.7	32.6
Median hours worked	36.0	36.0	34.5
< 20 hours	4.8%	.5%	10.4%
21-36 hours	58.7%	55.5%	62.7%
37-44 hours	31.2%	36.8%	24.1%
45 or more hours	5.4%	7.2%	3.0%

Most dentists devote most of their time to patient care. Dentists in large group practices report spending somewhat more time in patient care and less time in administrative activities than dentists in solo or small group private practices.

- Seventy-six percent of dentists active in Minnesota report spending at least 90 percent of their work time in patient care.
- Sixteen percent reported spending more than 10 percent of their time in administrative activities.
- Eighty-six percent of dentists in large group practices said they spent at least 90 percent of their time in patient care; they typically spend less time in administration than dentists in small group or solo practices.

### Percent of Time Devoted to Patient Care and Administration, Active Minnesota Dentists, 2007-08

% of time by ACTIVITY	All Dentists	Solo Private Practice	Small Group Private Practice (2-4 dentists)	Large Group Private Practice (5+ dentists)
<b>Patient Care</b>				
90% or more	76%	77%	81%	86%
50-89%	19%	22%	18%	12%
Less than 10%	4%	1%	1%	1%
<b>Administration</b>				
More than 10%	16%	18%	16%	8%
10%	20%	23%	20%	16%
Less than 10%	64%	59%	64%	76%

**Collaborative agreements with dental hygienists.** Minnesota law allows health care organizations or nonprofit organizations that serve uninsured or publicly insured patients to employ dental hygienists with at least 3,000 career practice hours (or 2,400 hours in the preceding 18 months) to perform certain procedures without a patient first being seen by a licensed dentist. The hygienist must work under a collaborative agreement with a supervising dentist.

These procedures include:

- oral health promotion and disease prevention education
- removal of deposits and stains from teeth surfaces
- application of topical preventive or prophylactic agents
- polishing and smoothing of restorations
- removal of marginal overhangs
- preliminary charting
- radiographs, and
- scaling and root planning.

The hygienist may also administer local anesthetics or nitrous oxide if specifically delegated by the dentist in the collaborative agreement.

In response to the question “Are you currently practicing under a written collaborative agreement with 1 or more Minnesota licensed dental hygienists provided for in M.S. § 150A.10, Subd. 1a?”, 6.5 percent of dentists working in Minnesota reported being involved in collaborative agreements with dental hygienists. If it could be assumed that those who did not answer the question are not involved in collaborative agreements, the overall percentage of dentists using agreements would be only five percent. However, significant numbers of dentists using collaborative agreements may not have answered the question.

**Supervision of restorative functions.** Licensed dental hygienists and registered dental assistants may also perform certain restorative procedures if authorized by a dentist and if a dentist is present in the clinic when the procedure is performed.

- placing, contouring and adjusting amalgam restorations,
- placing, contouring and adjusting glass ionomer,
- adapting and cementing stainless steel crowns, and
- placing, contouring and adjusting class I and class V supragingival composite restorations.

Of those dentists answering the question, 11 percent said dental hygienists or assistants were performing restorative functions under their supervision. However, only eight percent of all survey respondents answered “yes.” There is no conclusive evidence that collaborative agreements or delegated functions are utilized more in rural or urban areas.

**Participation of Active Minnesota Dentists in Collaborative Agreements, 2007-08**

N = 1,755 respondents	Collaborative Agreements	Restorative Functions
Yes	5%	8%
No	53%	66%
Don't Know	14%	-0-
No answer	29%	28%

**Methodological note for numbers of dentists**

Data is reported for three categories of counties.

**Metropolitan Statistical Area (MSA) counties<sup>ii</sup>** – 21 Minnesota counties included in seven metropolitan statistical areas (Minneapolis-St. Paul, St. Cloud, Rochester, Duluth-Superior, Fargo, Grand Forks and Lacrosse).

**Micropolitan counties<sup>iii</sup>** – 20 counties surrounding smaller urban centers of at least 10,000 people.

**Rural counties<sup>iv</sup>** – 46 counties outside MSAs and Micropolitan areas.

The counties constituting each of these categories are not geographically contiguous. ORHPC can provide data for other county groupings upon request.

Data reported here is from responses received from dentists renewing their licenses for between November 2006 and October 2008. Dentists renew licenses for two-year periods by birth month. A full-survey period is 24 months.

The Board of Dentistry received an estimated 3,648 license renewals in 2007 and 2008. This estimate is based on the number of active licenses in effect December 31, 2008, minus new initial licenses and license reinstatements during 2007 and 2008.

The Office of Rural Health and Primary Care received usable survey responses from 2,307 dentists renewing their licenses during the 24-month survey period, for a response rate of 63 percent.

At the time of license renewal, 1,755, or 76 percent, of the 2,307 respondents said they working at least part time at a primary practice site in Minnesota. Applied to 3,909 licensed dentists, this percentage produces an estimate that about 2,970 dentists were working at least part time in Minnesota at the end of 2008. If dentists actively working in Minnesota were more likely to respond to the survey than dentists not working or working outside Minnesota, the estimated number of active Minnesota dentists would be somewhat lower.

Using the July 1, 2008, resident population estimate for Minnesota (5,220,393), the estimated 2,970 active dentists equate to 57 active dentists per 100,000 people.

Because of different data sources and definitions, this estimate of 57 active dentists is not directly comparable to other reported data. The 2006 U.S. Health Workforce Profile reported that Minnesota had 3,069 practicing dentists, or 60 dentists per 100,000 people, compared to a national rate of 59.

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<sup>i</sup> The United States Health Workforce Profile (Rensselaer, New York: The New York Center for Health Workforce Studies, 2006).

<sup>ii</sup> Counties in metropolitan statistical areas: Anoka, Benton, Carlton, Carver, Chisago, Clay, Dakota, Dodge, Hennepin, Houston, Isanti, Olmsted, Polk, Ramsey, St. Louis, Scott, Sherburne, Stearns, Wabasha, Washington, and Wright.

<sup>iii</sup> Counties in micropolitan statistical areas: Beltrami, Blue Earth, Brown, Cass, Crow Wing, Douglas, Freeborn, Goodhue, Kandiyohi, Lyon, McLeod, Martin, Mower, Nicollet, Nobles, Otter Tail, Rice, Steele, Wilkin, and Winona.

<sup>iv</sup> Rural counties include all counties not named in notes 1 and 2.