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Kansas Department of Health and Environment
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A Comparison of Primary Care Dentist Trends 2000 and 2010

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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans. Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

A Comparison of Primary Care Dentist Trends, 2000 and 2010

Introduction

Kansas' primary care dentist shortage is well documented [1, 2, 3]. The Bureau of Epidemiology and Public Health Informatics (BEPHI), in coordination with the Bureau of Local and Rural Health (BLRH), recently released the "*Kansas Primary Care Dentist FTE Report by County, 2010*" [4]. This biennial update of dental FTEs (full-time equivalents) was prepared in accordance with guidelines set forth by the Code of Federal Regulations [5] used for health professional shortage area (HPSA) designation. Utilizing the "*Kansas Primary Care Dentist FTE Report by County, 2000*" [6], trends can be identified tracking the Kansas primary care dentist supply between 2000 and 2010. This comparison is highlighted below.

Methodology

License renewal data provided by the Kansas Dental Board from 2000 and 2010 submitted for the fourth quarter of the calendar year upon which the respective Primary Care Dentist FTE reports [4, 6] were based was used for preparation of the present report. Both datasets contain information provided by primary care general and pediatric dentists on their license renewal forms. This data includes their number of hours worked per week and their practice locations [7]. FTEs were adjusted for hours and age as required by federal health professional shortage regulations*. Practice hours were limited to a maximum of 40 hours per dentist for all sites. Adjusted census data for 1999 [8] and 2009 [9], with group quarters population subtracted from the Kansas total population, were used for calculation of persons per hours adjusted and age adjusted FTE dentist counts for 2000 and 2010†.

Figures and tables summarized below represent the indicated value per site, not per dentist. This is not the same as per dental office, since three dentists, for example, sharing a single office are counted as three sites, and a single dentist with two offices is counted as two sites. By definition, hours reported by dentists for activities other than direct patient care (e.g., teaching, administration, research, and other) are not included in primary care dentist calculations of FTEs, since primary care's focus is direct patient care [10].

*****NOTE: Full-time Equivalent. One FTE is based on a 40 hour work week. In cases where a dentist=s total practice hours for all work sites exceeds 40 hours per week, the value for total hours is set to 40 and the hours are distributed across all sites in proportion to the actual practice hours. Hours per week practiced at each location are used to allocate a dentist=s FTE to multiple locations.
Adjusted Full-time Equivalents. According to Federal Health Professional Shortage Area Guidelines, dentists= FTEs should be adjusted to reflect variations in productivity; one measure of dentist productivity is the number of auxiliaries employed by the dentist=s office. Since that type of information was not available, an alternative measure of productivity based on age and the following values was used to compute age-adjusted FTEs, i.e., under 55 years=1.2, 55 to 59=0.9, 50 to 64=0.8 and 65+ years = 0.6. Due to the weighting, some dentists under age 55 had age-adjusted FTEs greater than 1.0; however the theoretical maximum of 1.20 age-adjusted FTE was not exceeded [5].
†NOTE: Subtraction of group quarters population numbers for the 2000 report excludes all institutional group quarters and non-institutional group quarters Kansas population counts. Subtraction of group quarters population numbers for the 2010 report excludes all institutional group quarters and a smaller sub-set of non-institutional group quarters Kansas population counts per designation of medically underserved areas requirements by Health Resources and Service**s** Administration [5].

Results

Comparing primary care dental FTE 2000 reports with 2010 reports indicates that:

- Rural, Densely-settled rural, and Frontier peer group counties have lost population and primary care dentist FTEs. This has increased the number of persons per primary care dentist FTE over the last 10 year period.
- Semi-urban and Urban peer group counties have gained population and primary care dentist FTEs. This has reduced the number of persons per FTE primary care dentist over the same time period since the increase in dentist FTEs has not kept pace proportionally with the population increases (Figure 1).
- Kansas overall has gained in population and primary care dentist FTEs and the number of persons per FTE primary care dentist has declined somewhat.

Figure 1 Kansas Primary Care Dentist FTEs Adjusted by Hours and Age to Population Ratio, Kansas 2000 and 2010

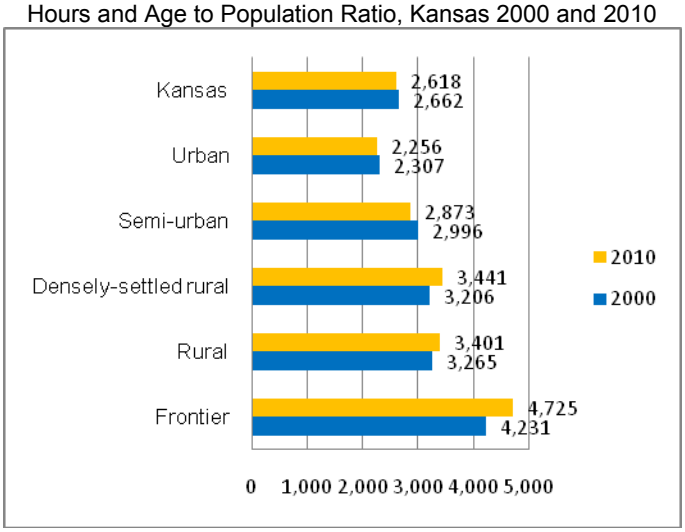


Table 1 provides a comparison of Kansas dentist service ratios for 2000 and 2010.

- The number of hours and age adjusted primary care FTE dentists increased by 82 between 2000 and 2010, from a total of 979 in 2000 to 1,061 in 2010 (Table 1).
- The Kansas Adjusted Population to Dentist FTE Ratio was 44 persons fewer per FTE in 2010 than 2000. That is, the number of people in the Kansas (adjusted population) divided by the number primary care FTE dentists (hours and age adjusted) fell from 2,662 in 2000 to 2,618 persons per hours and age-adjusted primary care FTE dentist in 2010[†]. This means fewer persons are served by each dentist.

The age of each dentist is calculated as of December 31, 2010.

Table 1 Age and Hours Adjusted Primary Care Dental FTEs by Peer Group Kansas 2000 [6] and 2010 [4]*

	Adjusted Population	FTE Adjusted by Hours and Age	Adjusted Population/FTE Adjusted by Hours and Age
Kansas			
2000	2,606,468	979.30	2,662
2010	2,778,506	1,061.34	2,618
Change	172,038	82	-44
Frontier			
2000	96,550	22.82	4,231
2010	85,804	18.16	4,725
Change	-10,746	-5	494
Frontier			
2000	96,550	22.82	4,231
2010	85,804	18.16	4,725
Change	-10,746	-5	494
Rural			
2000	280,944	86.04	3,265
2010	268,140	78.85	3,401
Change	-12,804	-7	136
Densely-settled rural			
2000	454,672	141.83	3,206
2010	450,535	130.93	3,441
Change	-4,137	-11	235
Semi-urban			
2000	407,034	135.86	2,996
2010	438,262	152.53	2,873
Change	31,228	17	-123
Urban			
2000	1,367,268	592.75	2,307
2010	1,535,765	680.88	2,256
Change	168,497	88	-51

*Peer groups include:
Frontier (less than 6 persons per square mile)
Rural (6 to 19.9 persons per square mile)
Densely-settled rural (20 to 39.9 persons per square mile)
Semi-urban (40 to 149.9 Persons per square mile)
Urban (150 or more persons per square mile)

Table 2 contains information on mean age of dentists and the practice hours-and-age-adjusted FTEs by Kansas peer groups for 2000 and 2010.

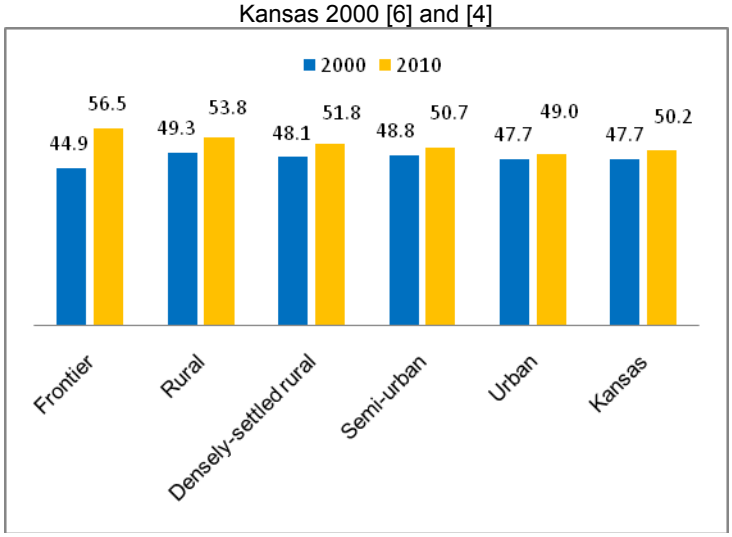
- The mean primary care dentist age has risen in all peer group counties and the state between 2000 and 2010.
- The 2010 data indicate a slight trend toward younger primary care dentists practicing in more urbanized peer group areas, while older primary care dentists trend slightly toward more rural settings. Frontier counties in 2010 had the highest mean age among the peer groups for primary care dentists. The age difference is the greatest for frontier counties between 2000 and 2010(Table 2 and Figure 2).

- Among more urbanized peer group primary care settings, dentists provide proportionally higher mean FTEs, while more rural peer group primary care setting dentists provide lower mean FTEs. This means that a slightly smaller average number of service hours are occurring in more rural settings, while a slightly larger average number of service hours are occurring in more urbanized settings. Mean peer group FTE distributions are similar between 2000 and 2010, while the state mean has increased somewhat.

Table 2 Mean Age and Hours-and-Age-Adjusted FTEs by Peer Group Kansas 2000 [6] and 2010 [4]

Pop Density Peer Group	2000 Mean Age	2010 Mean Age	Mean Age Diff	2000 Mean Hours/ Age-Adj. FTE	2010 Mean Hours/ Age-Adj. FTE
Kansas	47.7	50.2	2.5	0.84	0.85
Frontier	44.9	56.5	11.6	0.71	0.73
Rural	49.3	53.8	4.5	0.77	0.74
Densely-settled rural	48.1	51.8	3.7	0.85	0.82
Semi-urban	48.8	50.7	1.9	0.86	0.83
Urban	47.7	49.0	1.3	0.85	0.86

Figure 2 Mean Primary Care Dentist Age by Peer Group, Kansas 2000 [6] and [4]



Review of primary care distribution of dental services comparing 2000 with 2010 information contained in the more the detailed reports indicates that:

- In 2000, 26 Kansas counties were better served than the state average. This number decreased to 24 in 2010 (2,662 persons per primary care dentist in 2000 vs. 2,618 persons per primary care dentist in 2010).
- The number of Kansas counties with an above average of persons per primary care dental FTE decreased from 69 in 2000 to 67 in 20105 (had more persons per primary care dentist than the state average).
- The number of Kansas counties with less than one full primary care dentist FTE increased from 14 in 2000 to 17 counties in 2010 (Figures 3 and 4).
- The number of Kansas counties that have no primary care FTE dentist providing dental services in their county (zero FTEs) increased from 10 counties in 2000 to 14 counties in 2010 (Figures 3 and 4).

Figure 3. Distribution of Kansas Primary Care Dentist FTEs Adjusted by Hours and Age by County, 2000

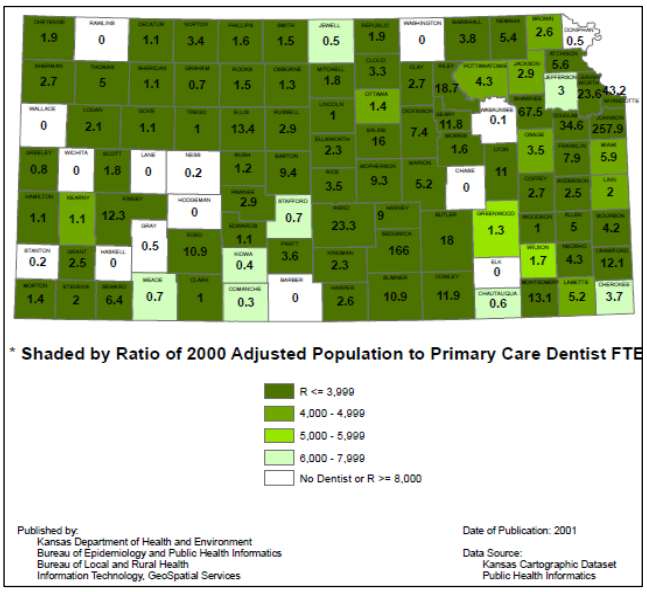
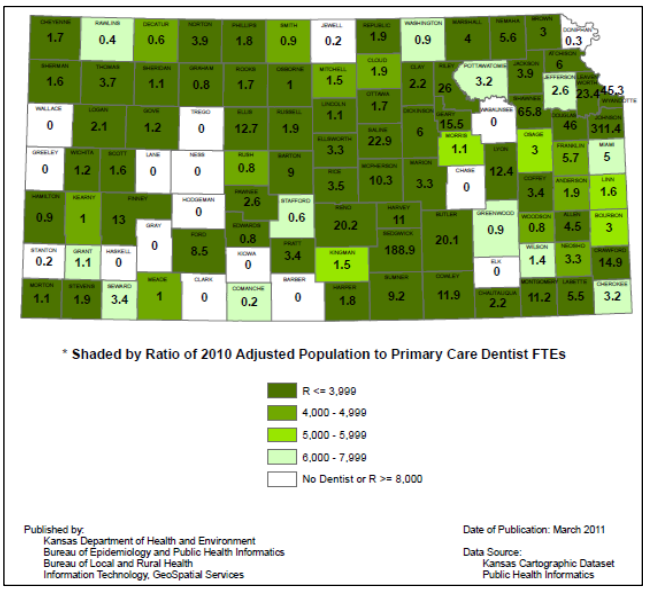


Figure 4. Distribution of Kansas Primary Care Dentist FTEs Adjusted by Hours and Age by County, 2010 †



Conclusion

Kansas dentist service ratios have changed between 2000 and 2010.

- The number of hours-and-age-adjusted primary care FTE dentists in Kansas increased by 82 between 2000 and 2010 (Table 1).
- The adjusted population number per primary care dentist FTE in Kansas improved by 44, meaning that in 2010 there was an average of 44 fewer persons per primary care dentist than in 2000 (Table 1).
- The average age of Kansas primary care dentists increased over the 10 year review period from 2000 to 2010 (Table 2).
- In 2010 in Kansas, the younger the primary care dentist, the more likely they were to be found practicing in more urbanized areas, while the reverse is seen in 2000 (Table 2).
- More urbanized Kansas service areas tend to receive higher average primary care FTE dental services (Table 2).

- The number of Kansas counties with less than one FTE increased as did the number of counties with no FTEs from 2000 to 2010 (Figures 1 and 2).

A comparison between the 2000 and 2010 Primary Care Dentist FTE Reports highlights a growing primary care dentist shortage, particularly in rural areas. In areas of the state where the population and dentist FTEs are declining, but dentist FTEs have a proportionally higher decline, the person to provider ratio climbs which may in term lead to less access to dental care. To assure that the dental needs of Kansans are met, attention must be focused on developing and implementing plans to address Kansas primary care dentist shortages.

For more information contact the Bureau of Epidemiology and Public Health Informatics at 785-296-5281 with report questions or for additional information.

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References

1. The Kansas Department of Health and Environment Bureau of Oral Health (2009). Kansas 2009 oral health workforce assessment.
2. The Kansas Department of Health and Environment Bureau of Local and Rural Health (2011). Primary care health professional underserved areas report, Kansas 2011.
3. The Kansas Health Institute News Service (2011). Kansas dentists propose plan to address state's dental shortage. Available from http://khi.org/news/2011/feb/03/kda-proposal. Accessed April 4, 2011.
4. The Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics (2011). Kansas primary care dentist FTE report by county 2010.
5. Code of Federal Regulations (1996), 42 CFR 2.1 Appendix B Part 5. Criteria for designation of areas having shortages of dental professionals.
6. The Kansas Department of Health and Environment, Bureau of Epidemiology and Public Health Informatics (2001), Kansas primary care dentist FTE report by county 2000.
7. Kansas State Dental Board Health Care Credentialing Data for Dentists, Quarter 4, 2000 and 2010.
8. Population Estimates Program, U.S. Bureau of the Census, 1999 and 2009.
9. Group Quarters Claritas 2009 Data provided in the on-line Health Resource and Services Administration Application Submission and Processing System.
10. Owen, D. (2002). Dental staffing in Kansas evaluated, Kansas Health Statistics Report, No.15, November 2002, p. 1 - 2.