

## **Evaluating dental access and utilization using geographical information systems (GIS)**

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Access and use of dental services by populations is to some extent dependent on the distribution of dentists. The literature however has not given much attention to this issue.

**Objective:** To study the distribution of dentists in Ohio as well as access and use of dental services by Ohioans using Geographical Information System (GIS).

**Methods:** A database from the Ohio Dental Board of dentists licensed in the state of Ohio was mapped at the zip code and county levels. Data from the 1998 Ohio Family Health Survey on use of dental services and unmet dental needs was also mapped using ArcView v3.2. These two sources of data were simultaneously displayed on maps.

**Results:** Results for this study come by way of maps. The distribution of dentists in Ohio was 69.4% in 12 metropolitan counties, 14% in 17 suburban counties, 9% in 30 rural non-Appalachian counties and 7.6% in 29 Appalachian counties. The results also showed that 54.8% of Ohioans living in metropolitan counties, 68.9% in suburban counties, 65.2% in rural non-Appalachian counties and 63.8% in rural Appalachian counties visited the dentist in the previous year. Unmet dental need was reported by 3.8% of respondents in metropolitan counties, 2.5% in suburban counties, 2.8% in rural non-Appalachian counties and 2.4% in rural Appalachian counties.

**Conclusions:** Obvious disparities exist in the distribution of dentists in Ohio as well as in the access and use of dental services by Ohioans.