

# Geographic Distribution of Dental Patients with Intellectual and Developmental Disabilities



School of Dental Medicine

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## Introduction

Intellectual and Developmental Disabilities (IDD) have been described as health conditions associated with significant limitations in intellectual functioning, adaptive behavior and skills with an onset before adulthood. Barriers in access to and utilization of oral health services are reported among individuals with intellectual and developmental disabilities (IDD) and among individuals residing in rural areas.

## Objectives

The aim of this descriptive study was to assess geographic distribution of adults with IDD who received dental care at Tufts Dental Facilities (TDF) and compare their demographic and clinical status in geographical areas of Massachusetts.

## Materials and Methods

Cross-sectional descriptive study of clinical and demographic data.

Inclusion criteria:

- Adults aged  $\geq 20$  years
- Qualified for Services from MA DDS\*
- Comprehensive dental exam recorded in axiUm between April 1, 2009 and March 31, 2010 at TDF
- Residential Zip Code Recorded

Subjects were grouped by geographic classification (Table 1). Descriptive statistics were calculated, and data were analyzed with SPSS Version 21. Means calculated for # of teeth, # of restored teeth and # of filled teeth. Bivariate associations were assessed with chi square and P-values found significant at  $< 0.05$ . ESRI ArcMap Software was used to perform spatial analysis of the following variables: # of patients, average # of decayed teeth, and average # of restored teeth. This study was approved by Tufts Health Sciences Campus IRB.

**Table 1. Classification of Zip Codes**

Urban Zip Code
If Urban Area/Total Area $> 50\%$ (based on census urban areas)
Suburban Zip Code
If Urban Area/Total Area = $0.1 - 50\%$ Or If Cluster Area/Total Area $> 10\%$
Rural Zip Code
If Area for Both = 0 Or If Cluster Area/Total Area $< 10\%$

\*MA DDS: Massachusetts Department of Developmental Services

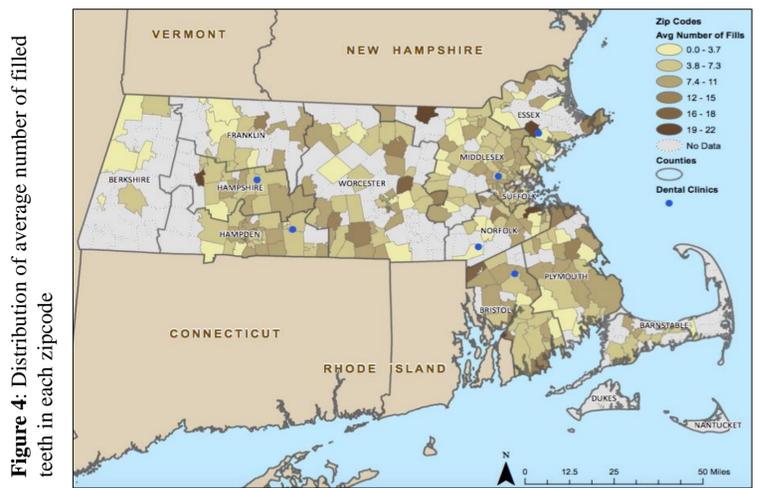
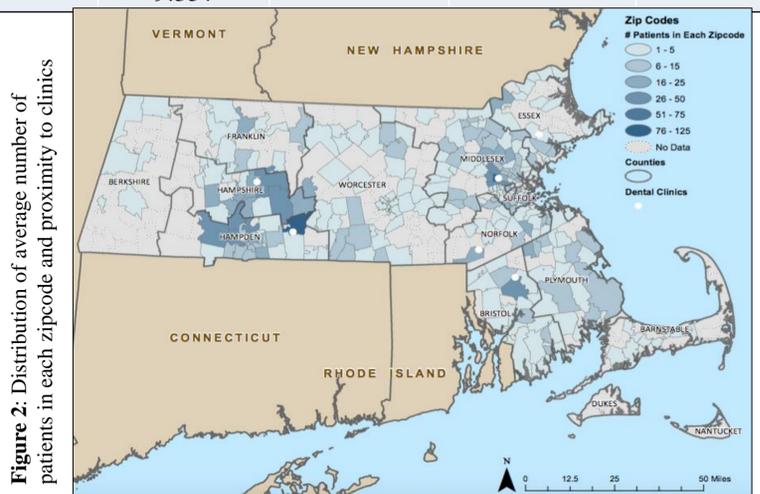
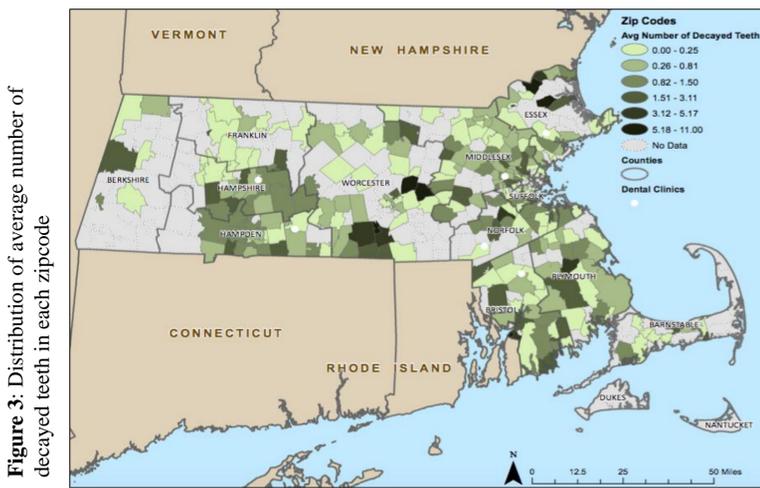
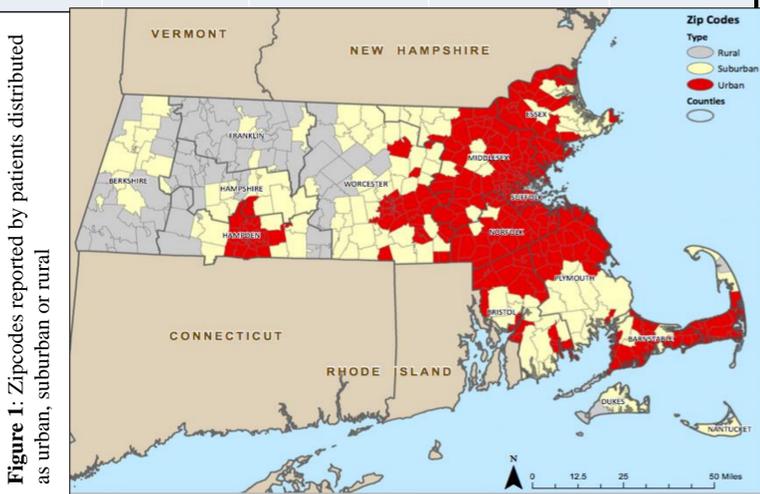
## Results

Of the 4,732 adults with IDD, 4,517 reported residential zip codes. Over half (58.0%) of the total zip codes in Massachusetts were represented by the data set.

**Table 2. Demographics and Descriptive Statistics**

	# (%)				Mean (SD)				
	Total Zipcode	Urban	Suburban	Rural	Total Zipcode	Urban	Suburban	Rural	
<b>Subjects</b>	4517	3372 (74.65)	1044 (23.11)	101 (2.24)	<b>Age (yrs)</b>	49.3 $\pm$ 14.28	49.41 $\pm$ 14.04	48.92 $\pm$ 15.13	47.35 $\pm$ 13.25
<b>Female</b>	1910 (42.3)	1423 (42.2)	457 (43.8)	31 (30.7)	<b># Teeth</b>	19.08 $\pm$ 9.35?	18.97 $\pm$ 9.44	19.22 $\pm$ 9.23	20.92 $\pm$ 8.33

**Figure 1 - 4: ESRI ArcMap Spatial Analysis**



## Conclusions

Among adults with IDD who reported residential zip codes in Massachusetts, more males were receiving care in rural areas and more females were receiving care in suburban areas than expected. Based on preliminary findings, strategies should be considered regarding assessment and provision of oral health services for Massachusetts individuals with IDD living in rural areas. Future directions might explore the impact that the current clinic locations have on patient distribution, access to dental care and untreated dental caries status. Spatial analysis revealed clinic locations and zip codes accessing care were predominantly urban and suburban.

## Acknowledgements

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