

Characteristics of Dental-Related Hospital Admissions in Michigan, 2009-2010

Authors: Adrienne Nickles¹, MPH; Mathew J. Reeves², PhD; Sarah Lyon-Callo¹, MA, MS; Christine Farrell³, RDH, MPA

¹Michigan Department of Community Health, Chronic Disease Epidemiology Section,

²Michigan State University, College of Human Medicine, Department of Epidemiology,

³Michigan Department of Community Health, Child, Adolescent & Family Health Section

Background

- The Michigan Oral Health Surveillance System (MOHSS) was created in 2009
- The purpose of MOHSS is to systematically collect and organize data available for use in developing, implementing, and evaluating programs to improve the oral health of Michigan citizens.
- Issues:
 - Many gaps in surveillance capabilities
 - Limited access to clinical data

Background

KHN
KAISER HEALTH NEWS

EMAIL SIGN-UP RSS ABOUT US CONTACT

HOME | SUPREME COURT | HEALTH REFORM | STATES | MEDICARE | MEDICAID | MORE TOPICS | NEWS | BLOG | VIDEO

TOPICS:

- Aging
- Delivery of Care
- Health Costs
- Health Disparities
- Supreme Court
- Hospitals
- Women's Health
- Health IT
- Insurance
- Marketplace
- Medicare
- Medicaid
- Mental Health
- Politics

Preventable ER Dental Care In Florida Cost \$88M In 2010

TOPICS: STATES, HEALTH COSTS, MEDICAID, DELIVERY OF CARE

JUN 26, 2012

In Florida, preventable ER visits for dental care cost that state \$88 million, a new report said. In the meantime, California lawmakers sent the governor a bill for his approval that would give low-income children a new way to get dental care.

STATE JOURNAL

Report details oral health 'crisis,' cites ER visits due to dental pain

J Am Dent Assoc. 2002 Jun;133(6):715-24; quiz 768.

Dental visits to hospital emergency departments by adults receiving Medicaid: assessing their use.

Cohen LA, Manski RJ, Magder LS, Mullins CD.

Department of Oral Health Care Delivery, University of Maryland Dental School, Baltimore 21201, USA. lac001@dental.umaryland.edu

Abstract

BACKGROUND: Pain from toothaches represents a significant problem. People lacking access to private dental services may use hospital emergency departments, or EDs. In 1993, Maryland eliminated Medicaid reimbursement to dentists for adult emergency services.

METHODS: The authors used the change in Medicaid policy that eliminated dentist reimbursement to establish two study periods. Data tapes describing patients' use of EDs were obtained from the Maryland Medicaid Management Information System. A total of 3,639 people visited EDs for dental problems sometime during the four-year study period.

RESULTS: After controlling for age, race and sex, the authors found that the rate of ED claims was 12 percent higher in the postchange period than in the prechange period. Comparisons between periods show significant rate increases during the postchange period for men, whites, African-Americans and patients aged 21 through 44 years and 45 through 64 years.

CONCLUSIONS: The change in Medicaid policy that eliminated dentist reimbursement and participation in the program appears to have increased the use of EDs for the treatment of dental problems. **Practice Implications.** Many EDs lack dental services and are not capable of providing definitive treatment. When definitive treatment is not provided, this pattern of care may be repeated if patients are forced to return for treatment.

PMID: 12083647 [PubMed - indexed for MEDLINE] [Free full text](#)

Emergency room visits for dental pain

Dane County residents' ER visits for dental pain went up 67 percent from 2002 to 2010.

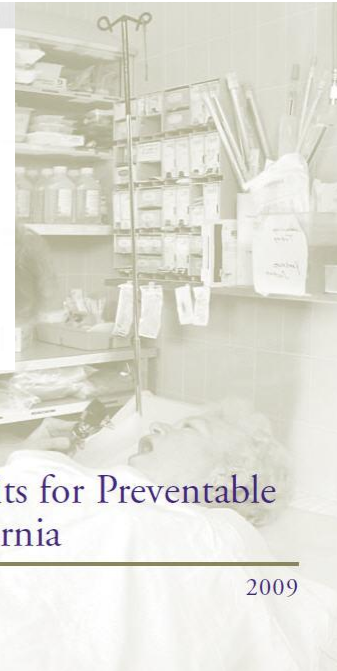


CALIFORNIA
HEALTHCARE
FOUNDATION

SNAPSHOT

Emergency Department Visits for Preventable Dental Conditions in California

2009



Oral Health in Michigan

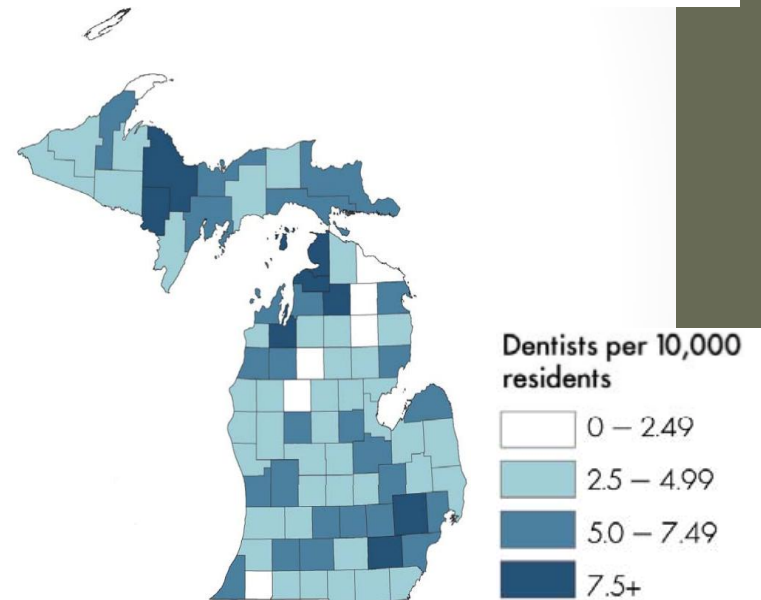
Children

- Approximately one in four third-grade children in Michigan (27.1%) have untreated dental disease.¹
- In 2010 only 32.4% of Medicaid eligible children in Michigan received a dental service, compared to 39.7% of children nationally.²

Adults³

- An estimated 13.8% of Michigan adults have six or more teeth missing due to tooth decay or gum disease.
- Approximately 72.5% of adults reported that they visited a dentist or dental clinic during the previous year.
- Half (49.9%) of adults with less than a high school education and 44.5% of adults with an annual income less than \$20,000 reported having visited the dentist in the past year.

Number of Licensed Dentists with a Current Michigan Address per 10,000 Population, by County, 2010



Bureau of Licensing & Health Professions, 2010

¹Michigan Count Your Smiles Report, 2010

²Michigan Dental Association, 2010

³Michigan Behavioral Risk Factor Survey, 2010

Background

- Untreated dental disease can significantly impact systemic health and may result in costly hospitalizations.
- Preventable dental conditions impose a costly and unnecessary strain on national and state budgets.
- The burden of dental-related hospital admissions in Michigan has not been reported previously.

Background

- A total of 50,658 hospital admissions were primarily attributed to dental/oral health-related conditions in 2008.
- 0.127% admissions in the US were primarily attributed to dental-related conditions.
- Total US hospitalization days were 174,496 days.
- Total US hospitalization charges were \$1.22 billion.

Source: Allareddy V, et. al, Hospitalizations primarily attributed to dental conditions in the United States in 2008. Oral Surg Oral Med Oral Pathol Oral Radiol. 2012 Sept;114(3):333-7.

Objectives

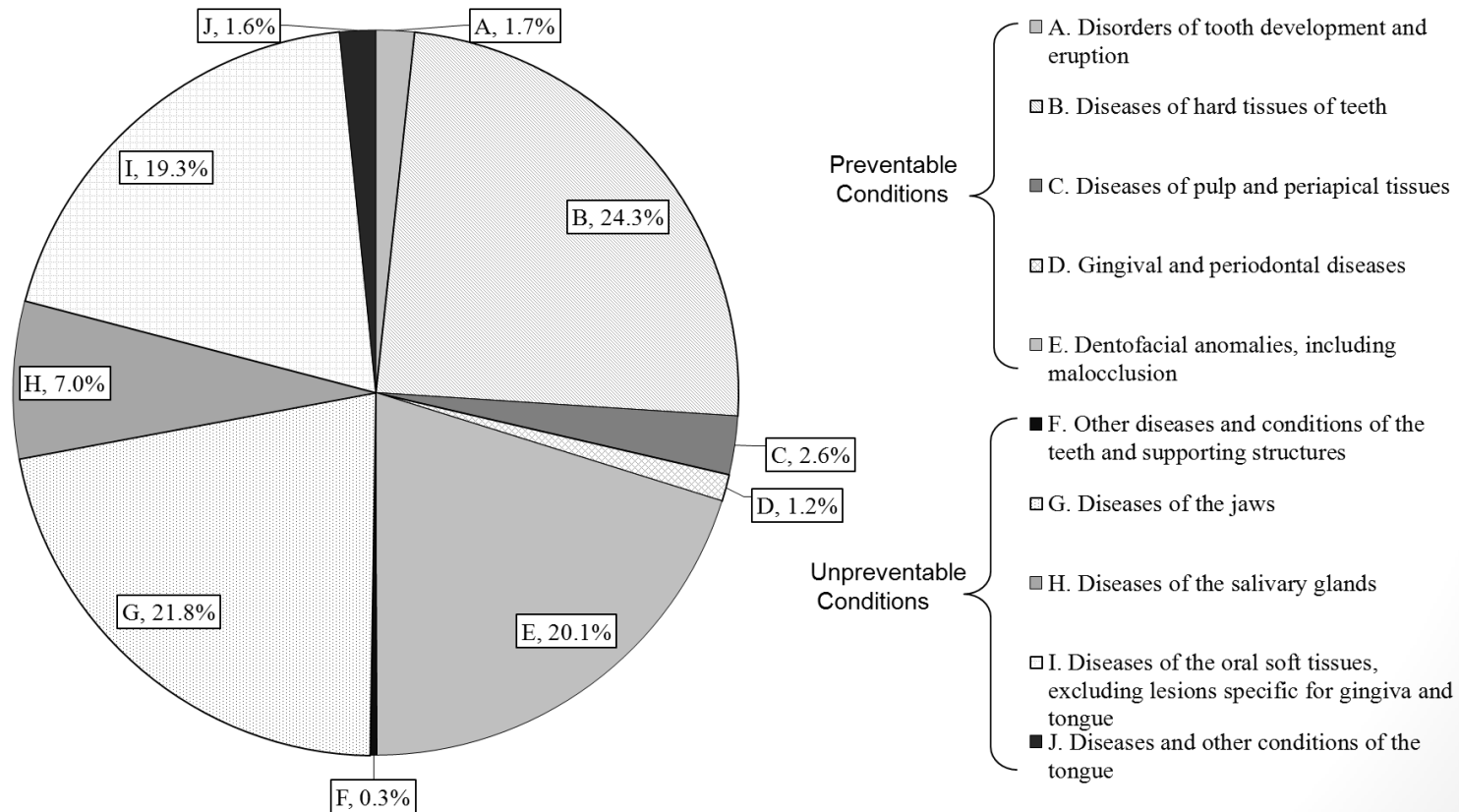
- Describe the prevalence and characteristics of non-traumatic dental-related hospitalizations and resulting charges in Michigan from 2009-2010
- Compare characteristics of preventable versus unpreventable dental admissions

Methods

- Hospital discharge data from the Michigan Inpatient Database were assessed to determine the prevalence, characteristics, and charges resulting from preventable non-traumatic dental-related hospitalizations in Michigan over a 2 year period.
- Primary diagnosis ICD-9-CM codes (520.0-529.9) were used to identify dental hospitalizations and were stratified into preventable (521.0-523.9, 525.0-525.9, 528.0-528.9) and unpreventable admissions.
- Multivariable logistic regression was used to determine independent factors associated with preventable versus unpreventable dental admissions.

Results

Figure 1. Distribution of Primary Diagnosis ICD-9 Codes Among All Dental-Related Hospitalizations, 2009-2010



Results

- On average, there were 1978 non-traumatic dental-related hospitalizations annually during the two year period accounting for 0.15% of all hospital admissions in Michigan.
- Half (56.4%) of hospitalizations occurred to people under 45 years old, 53.3% to women, and 73.8% to white people.
- Forty-five percent of hospitalizations were charged to government insurance while 8.8% were expected to pay out-of-pocket.
- Annual charges for dental-related hospitalizations were over \$25 million with over \$9 million in preventable hospitalizations.

Results: Table 1

Characteristics of Dental Admissions by Preventable vs. Unpreventable Condition, 2009-2010

		Preventable		Unpreventable		χ^2 , p-value
		%	N	%	N	
Age Group	0-17	48.9%	363	51.1%	379	43.0, < 0.0001
	18-44	50.9%	756	49.1%	730	
	45-64	54.9%	542	45.1%	446	
	65-84	46.3%	261	53.7%	303	
	≥85	29.3%	51	70.7%	123	
Sex	Male	57.0%	1053	43.0%	795	69.8, < 0.0001
	Female	43.7%	921	56.3%	1188	
Race	White	45.7%	1325	54.3%	1573	83.2, <0.0001
	Black	62.7%	579	37.3%	345	
	Other	58.1%	61	41.9%	44	
Insurance Type	Private Insurance	58.1%	1026	41.9%	740	330.0, <0.0001
	Government	35.2%	631	64.7%	1159	
	Self-pay	80.5%	277	19.5%	67	
Admitted From	Referral*	35.4%	727	64.6%	1327	342.3, <0.0001
	Transfer**	48.5%	32	51.5%	34	
	Emergency Room	66.6%	1024	33.4%	514	
Type of Admission	Emergency	62.2%	1330	34.8%	710	841.9, <0.0001
	Urgent	62.7%	462	37.3%	275	
	Elective	13.3%	149	86.7%	974	

* Includes physician, clinic/outpatient, and HMO referral

**Transfer from hospital, skilled nursing facility, another health care facility

Results: Table 2

Preventable vs. Unpreventable Dental Hospital Admissions, Crude and Adjusted Odds, Michigan, 2009-2010

		Crude		Adjusted	
		OR	95% CI	OR	95% CI
Age Group	0-17	Ref	---	---	---
	18-44	1.08	(0.91, 1.29)	0.71	(0.56, 0.91)
	45-64	1.27	(1.05, 1.54)	0.71	(0.56, 0.92)
	65-84	0.90	(0.72, 1.12)	0.32	(0.24, 0.43)
	≥85	0.43	(0.30, 0.62)	0.13	(0.08, 0.20)
Sex	Male	Ref	---	---	---
	Female	0.58	(0.52, 0.66)	0.64	(0.55, 0.76)
Race	White	Ref	---	---	---
	Black	1.99	(1.71, 2.32)	1.12	(0.92, 1.35)
	Other	1.65	(1.11, 2.44)	1.35	(0.83, 2.22)
Insurance Type	Government	Ref	---	---	---
	Private	0.39	(0.34, 0.45)	0.53	(0.43, 0.64)
	Self-pay	2.98	(2.25, 3.96)	1.67	(1.20, 2.34)
Admitted From	Referral	Ref	---	---	---
	Transfer	1.72	(1.05, 2.81)	1.26	(0.72, 2.21)
	Emergency Room	3.36	(3.16, 4.18)	1.15	(0.95, 1.40)
Type of Admission	Emergency	Ref	---	---	---
	Urgent	0.9	(0.75, 1.07)	1.01	(0.81, 1.25)
	Elective	0.08	(0.07, 0.10)	0.09	(0.07, 0.12)

*Adjusted by age group, sex, race, insurance type, place admitted from, and admission type

Conclusions

- There were approximately 1000 annual preventable dental-related hospitalizations in Michigan from 2009-2010.
- Over \$9 million in charges due to preventable dental admissions could be avoided by regular dental care and treatment.
- Efforts should focus on increased access to preventive dental care for groups with greater odds of preventable dental admissions.
- Future studies should focus on regional differences in the burden of preventable dental admissions in Michigan.

Primary ICD-9 Codes by Diagnosis Category

ICD-9 Code Range	Diagnosis Category
521.00-521.89	Disorders of tooth development and eruption
522.00-522.80	Diseases of hard tissues of teeth
523.00-523.90	Diseases of pulp and periapical tissues
525.20-525.90	Gingival and periodontal diseases
528.00-528.90	Dentofacial anomalies, including malocclusion
520.00-520.70	Other diseases and conditions of the teeth and supporting structures
524.00-524.90	Diseases of the jaws
526.00-526.90	Diseases of the salivary glands
527.00-527.90	Diseases of the oral soft tissues, excluding lesions specific for gingiva and tongue
529.00-529.80	Diseases and other conditions of the tongue