

Research Brief

Emergency Department Use for Dental Conditions Continues to Increase

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Key Messages

- *The number of emergency department (ED) visits for dental conditions in the United States continues to rise. In 2012, ED dental visits cost the U.S. health care system \$1.6 billion, with an average cost of \$749 per visit.*
- *Emergency department use for dental conditions has declined among young adults ages 19 to 25, has remained relatively flat among children and has increased for other age groups. The share of ED dental visit costs paid for by Medicaid has also increased.*
- *Looking forward, there are substantial opportunities to reduce ED visits for dental conditions through targeted referral programs and enhanced coverage for preventive dental services for adults through Medicaid.*

Introduction

Recent studies have documented an increase in emergency department (ED) visits due to dental conditions in the U.S.^{1,2,3} In an earlier research brief, we reported that the number of dental visits nearly doubled from 2000 to 2010.⁴ This increase was driven by a larger share of dental visits taking place in EDs rather than dental offices, especially among young adults 21 to 34 years old.⁵

Most dental ED visits are for non-traumatic dental conditions, and in most cases, patients receive prescriptions for pain or antibiotics for infections.^{6,7,8} Patients who present at an ED with a non-traumatic dental condition would be better served in a dental office setting due to the availability of definitive care and the likelihood of continuity of care.⁹ We estimate that up to 79 percent of dental ED visits could be diverted to community settings.¹⁰ An analysis in Maryland, for example, estimates that the state Medicaid program could save up to \$4 million each year through such diversion programs.¹¹

In this brief, we use newly released data to update our findings regarding trends in dental ED visits through 2012. We breakdown dental ED visits and charges by patient age and primary payer. Finally, we discuss the policy implications of our findings.

Data & Methods

For information regarding the number of ED visits and charges, we used the latest annual data from the Nationwide Emergency Department Sample (NEDS),¹² which was released in March 2015. The NEDS is the largest all-payer ED database publically available in the U.S., containing information on about 31 million ED visits at 950 community, non-rehabilitation hospitals. This sample represents 20 percent of all hospital-based EDs. The NEDS includes information on geography, hospitals, patients and the type of ED visits. The NEDS includes ED visits that may or may not have resulted in hospital admission.

We defined a dental ED visit based on ICD-9 primary diagnostic codes using two ICD-9 classification schemes. The first was Clinical Classification Software Category 136 – disorders of the teeth and jaw.¹³ The second was Ambulatory Care Sensitive dental conditions as defined by Dr. John Billings.¹⁴ Combining these two definitions, the following ICD-9 codes determined a dental ED visit in our analysis: 520.0 to 526.9, 528.0 to 528.9, 78492, V523, V534, V585 and V722.

We computed three measures of dental ED visits: (1) the number of dental ED visits per 1,000 population, (2) dental ED visits as a percentage of total ED visits and (3) dental ED visits as a percentage of total dental visits. Estimates of the non-institutionalized population in the U.S. were based on census and inter-census estimates of the U.S. residential population from the U.S. Census Bureau.¹⁵ Total dental visits were calculated as the sum of total dental office visits plus

total dental ED visits. Estimates of total dental office visits were based on the Medical Expenditure Panel Survey.¹⁶ We also computed the number of dental ED visits among children and adults covered by Medicaid per 1,000 population covered by Medicaid. Annual estimates of Medicaid enrollment were based on the Centers for Medicare & Medicaid Service's (CMS) Statistics Reference Booklet.¹⁷

We examined ED visits and charges for the following age groups, 0 to 18, 19 to 25, 26 to 34, 35 to 49, 50 to 64, and 65 and older. We compare dental care ED utilization among individuals 19 to 25 to other patients in different age brackets. Figures 3 and 4 are based on the age groups 0 to 20 and 21 to 64 respectively because CMS uses these age brackets when reporting Medicaid enrollment.

The expected primary payer variable in the NEDS includes the following categories: (1) Private health insurance – includes Blue Cross, commercial carriers, private health maintenance organizations (HMOs) and preferred provider organizations (PPOs), (2) Medicare – includes patients covered by fee-for-service and managed care Medicare, (3) Medicaid – includes patients covered by fee-for-service and managed care Medicaid, (4) Self-pay – charges to be paid by the patient or patient's family, which will not be reimbursed by a third party, (5) No charges/charity – visits for which no fee is charged and (6) Other – includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs. Since ED visits billed to the Children's Health Insurance Program (CHIP) may be classified as Medicaid, private insurance or other, it was not possible to present this information separately.¹⁸ We recognize there are potential shortcomings in the NEDS data related to the primary payer variable.¹⁹

Except for Table 1, our counts of dental ED visits include visits resulting in an inpatient admission.

However, ED visits that result in a hospital admission are different from other ED visits because they are likely to involve more severe conditions, and the expenses for these visits are often combined with inpatient expenses.²⁰ We follow this practice and exclude dental ED visits resulting in an inpatient admission from our analysis of dental ED visit charges in Table 1.

Results

The number of dental ED visits rose from 2.11 million per year in 2010 to 2.18 million in 2012. Figure 1 shows recent trends in the number of dental ED visits per 1,000 population, dental ED visits as a percentage of total ED visits and dental ED visits as a percentage of total dental visits. The number of dental ED visits per 1,000 population increased from 2010 to 2012. Dental ED visits as a share of total ED visits remained stable, indicating that dental and non-dental visits are trending in the same direction. Dental ED visits as a share of all dental visits increased, indicating that emergency rooms are increasingly being relied on as a source of dental care (see Figure 1).

The number of dental ED visits per 1,000 population by patient age are shown in Figure 2. From 2010 to 2012, young adults 19 to 25 were the only age group with a decline in the number of dental ED visits – from 16.60 per 1,000 population to 15.49. The decrease among this age group can be contrasted with the increase among young adults 26 to 34 from 17.37 to 17.66.

Figure 3 shows a breakdown of dental ED visits, and non-dental ED visits as a comparison, by primary payer for 2012. For dental ED visits, self-pay and Medicaid were the primary payers for 36.6 and 35.0 percent of visits respectively, followed by private insurance (15.4%). For non-dental ED visits, Medicaid and private insurance were the primary payers for 28.1

and 27.9 percent of visits respectively, followed by Medicare (21.9%) and self-pay (16.4%).

Figure 4 shows the percentage of dental ED visits by primary payer for children 0 to 20 years of age. The percentage of dental ED visits paid for by Medicaid rose from 48.2% in 2006 to 57.3% in 2012. While the actual number of dental ED visits paid for by Medicaid rose, it is important to note that the number of children covered by Medicaid grew much faster - from 28.5 million in 2006 to 35.4 million in 2012.²¹ The result was a decrease in the number of dental ED visits per 1,000 Medicaid-enrolled children from 5.2 to 4.9. The percentage of dental ED visits paid by self-pay decreased from 23.0% to 19.4% and the percentage of dental ED visits covered by private insurance decreased from 24.2% to 19.0%.²²

Among adults 21 to 64 years old, the percentage of dental ED visits paid for by Medicaid rose from 27.9% in 2006 to 32.4% in 2012 (see Figure 5). The number of adults covered by Medicaid also grew from 15.8 million to 20.0 million,²³ but unlike for children, this increase was proportionally less than the increase in dental ED visits paid for by Medicaid. The result was an increase in the number of dental ED visits per 1,000 Medicaid-enrolled adults from 25.8 in 2006 to 29.4 in 2012. The percentage of dental ED visits covered by private insurance among adults 21 to 64 fell from 21.7% to 15.0% and the percentage paid by self-pay increased somewhat from 39.8% to 40.6%.

Table 1 presents a breakdown of charges for treat and release dental ED visits by patient age and expected source of payment for 2012. Total charges for dental ED visits were \$1.6 billion and the average charge per visit was \$749. Medicaid accounts for \$520 million or about one-third of total dental ED charges. Although the average charge among elderly adults was almost twice as much as for younger age groups, elderly patients as a group accounted for only 4.5 percent of

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total charges. Children 0 to 18 years old accounted for 9.5 percent while adults 19 to 64 years old accounted for 86.0 percent.

The distribution of charges by expected source of payment also varied by patient age. Among children Medicaid accounted for 61.8 percent of charges, followed by private insurance (22.4%) and self-pay (12.3%). Among non-elderly adults, self-pay accounted for 39.4 percent of charges, followed by Medicaid (30.7%) and private insurance (17.8%). Among elderly adults, Medicare accounted for 85.6 percent of charges and private insurance accounted for 8.4 percent of charges.

Discussion

In an earlier research brief, we reported a steady increase in dental ED visits from 2000 to 2010, especially among young adults 21 to 34 years old.²⁴ We attributed the increase to a corresponding erosion of private and public dental benefits coverage among adults.²⁵ Except for a notable increase in private dental benefits coverage among adults 19 to 25, dental benefits coverage since 2010 has continued to decline among working-age adults.²⁶ We feel this is a major contributing factor to the continued increase in dental ED visits between 2010 and 2012. In 2012, on average, every 15 seconds someone visited a hospital emergency department for a dental condition.

Since September 2010, the Affordable Care Act (ACA) has allowed young adults to remain on their parents' private health insurance until age 26.²⁷ Although this policy does not apply directly to dental benefits, a recent study reported that relative to the pre-reform period, private dental benefits coverage among adults 19-25 increased in 2011 and 2012 as a result of the reform.²⁸ This dental benefits "spillover" effect also led to an increase in dental care utilization and a decrease in cost barriers to dental care among young adults. We

feel that this could be a major factor explaining the sharp decline in dental ED visits since 2010 for this age group.

Medicaid is accounting for a larger share of dental ED spending for both children and adults. However, it is important to note that Medicaid enrollment among children has increased significantly during our period of study.²⁹ As a result, the rate of dental ED visits per 1,000 Medicaid children has actually declined. Relatively comprehensive dental coverage for children covered by Medicaid is likely to have contributed significantly to the decrease in the rate of dental ED visits among Medicaid children.³⁰

For non-elderly adults, however, the rate of ED visits per 1,000 Medicaid enrollees has increased, meaning that Medicaid adults are increasingly relying on EDs for their dental care. Limited dental coverage for adults within many state Medicaid programs,³¹ the recent deterioration of this coverage the past decade,³² and the fact that Medicaid programs, on average, reimburse adult dental care less generously than children's dental care³³ helps to explain the divergence in dental ED use patterns between adults and children.

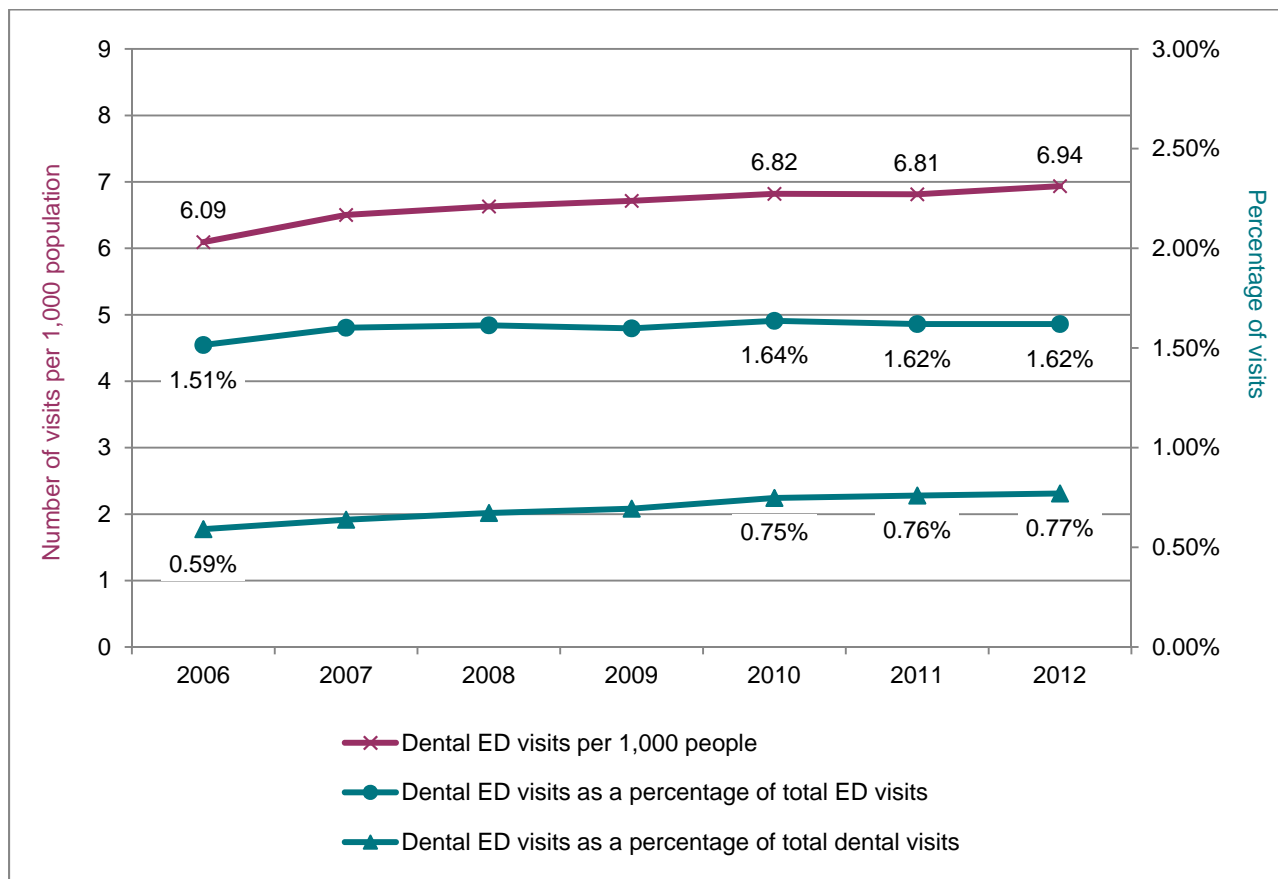
We estimate that if the \$520 million that is spent by Medicaid every year on dental ED visits was diverted to private dental practices, which deliver care much more cost effectively, it would pay for about 1 million dental visits per year.³⁴

Looking forward, since 70 percent of dental ED visits occur outside of normal business hours,³⁵ dental practices with expanded office hours have the potential to reduce ED use for dental conditions. For example, 24 Hour Dental Care in downtown Indianapolis is open around the clock and during a recent overnight shift saw 20 patients between the hours of 8:00 p.m. Monday and 5:00 a.m. Tuesday.³⁶ Hospitals can help to reduce the number of dental ED visits by developing

programs targeting patients who present at an ED with a dental complaint.^{37,38,39} For example, a program at a Virginia hospital was developed to divert ED patients with a dental complaint to a special urgent dental care clinic located in the hospital's oral and maxillofacial surgery clinic. Dental ED visits decreased more than 52 percent during the first year of the program.⁴⁰ Hospitals in the state of Washington also saved money and improved care by discouraging the overuse of emergency rooms.⁴¹ In addition, expanded dental

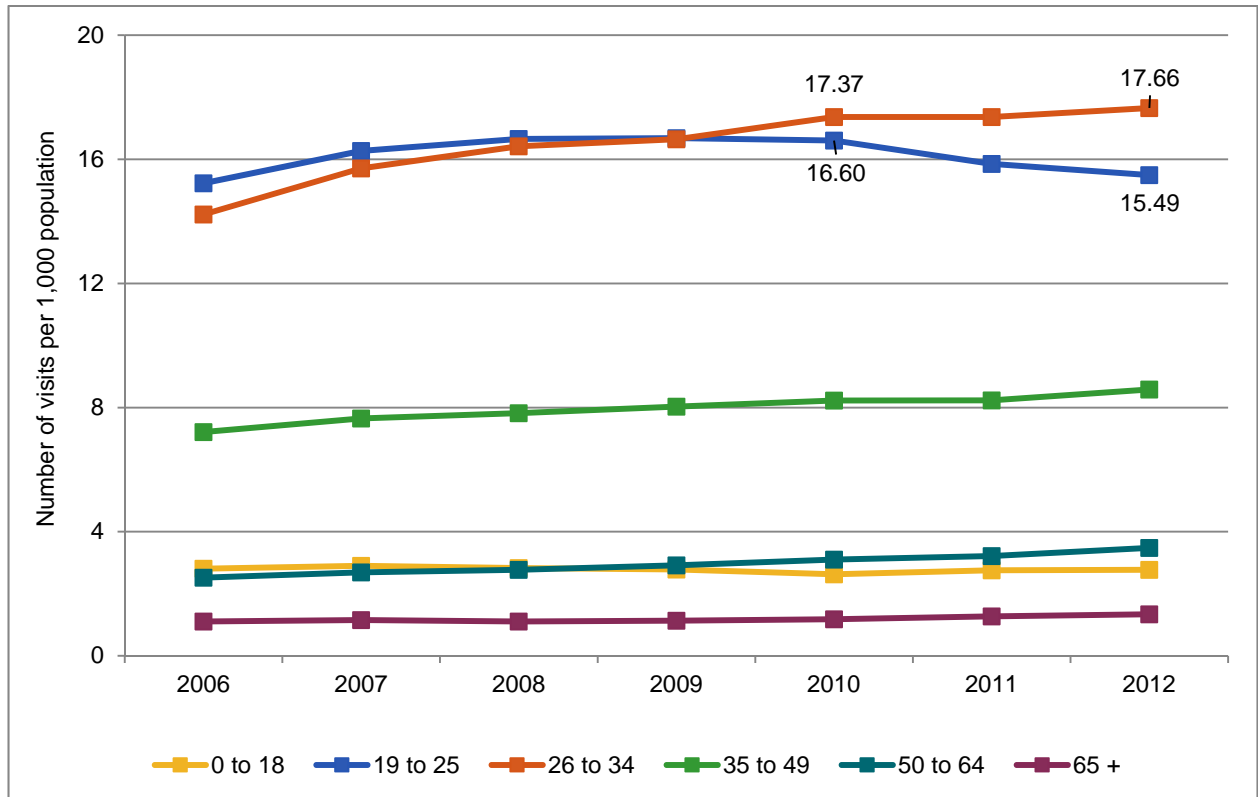
benefits coverage for Medicaid adults, in conjunction with Medicaid reforms that put in place key enabling conditions to promote provider participation, also have the potential to significantly reduce dental ED visits.⁴² The experience of young adults ages 19 to 25 we documented in this research brief illustrates the power of dental coverage expansion. Policy makers ought to explore the various initiatives to increase access to routine dental care among vulnerable populations.

Figure 1: Trends in Emergency Department Visits for Dental Conditions, 2006 to 2012



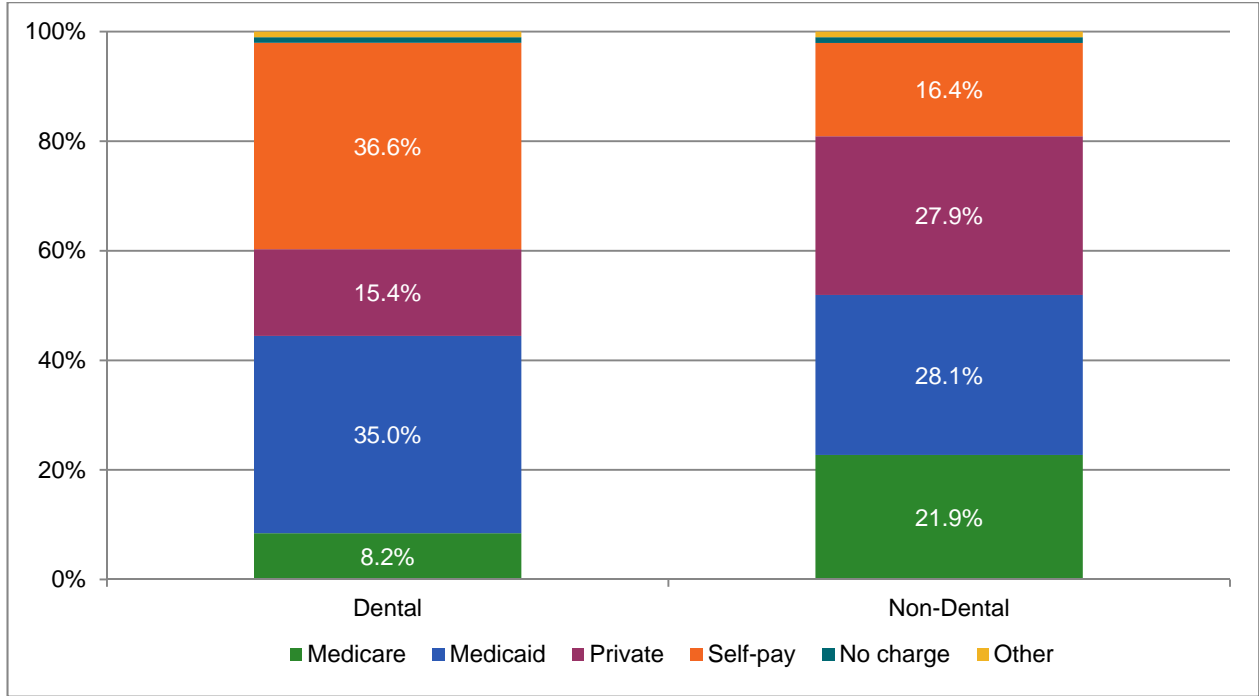
Source: ADA Health Policy Analysis of 2006-2012 Nationwide Emergency Department Sample data, 2006-2012 Medical Expenditure Panel Survey data, and 2006-2012 US Census data.

Figure 2: Trends in Dental Emergency Department Visits per 1,000 Population, by Patient Age, 2006 to 2012



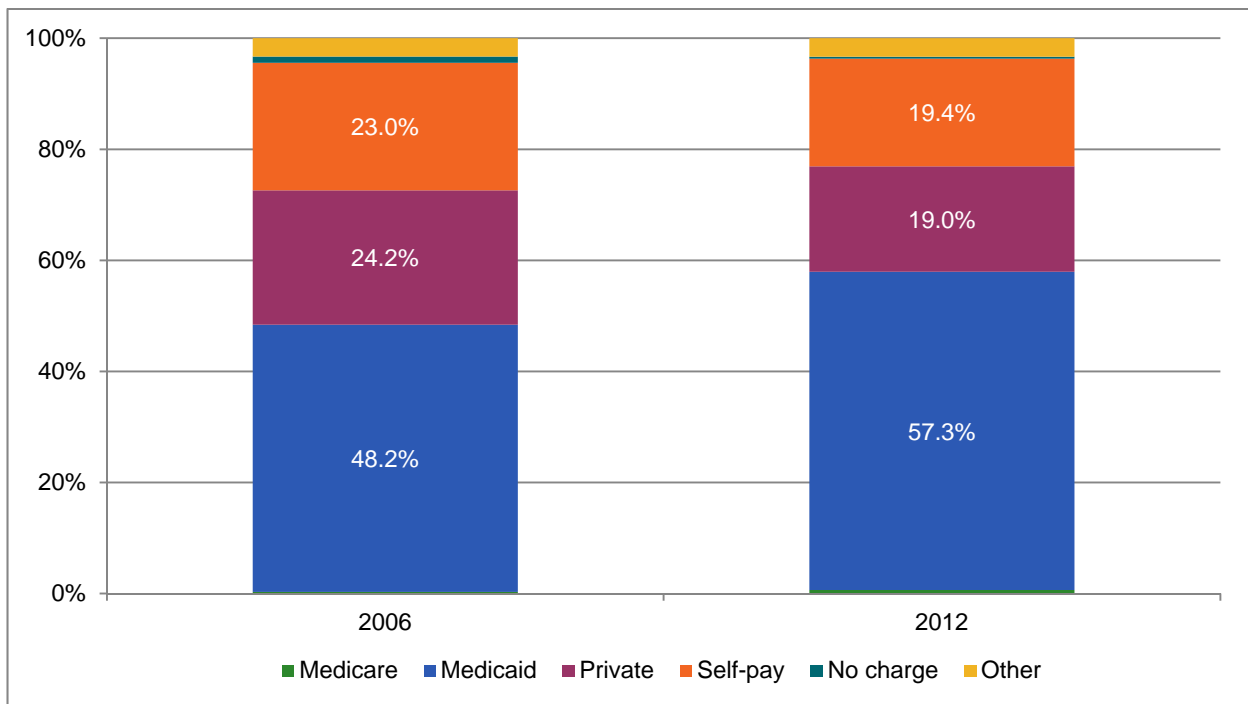
Source: ADA Health Policy Analysis of 2006-2012 Nationwide Emergency Department Sample data and 2006-2012 US Census data.

Figure 3: Percentage of Emergency Department Visits by Primary Payer, 2012



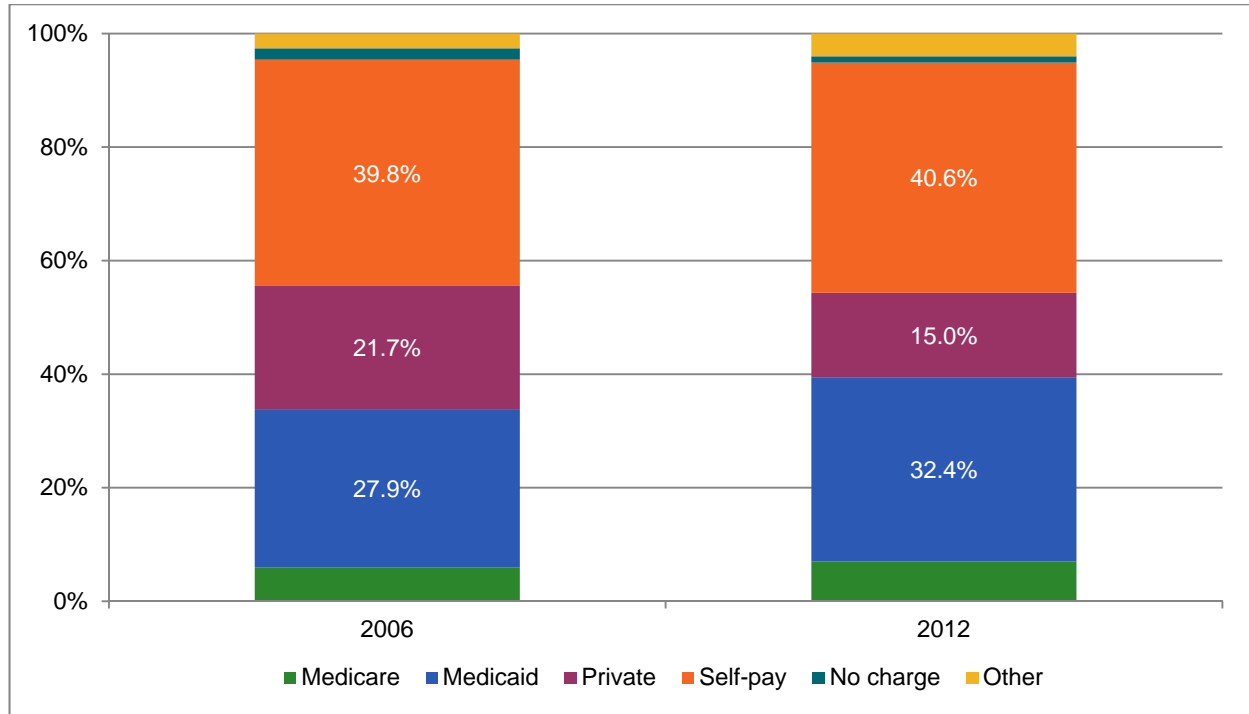
Source: ADA Health Policy Analysis of 2012 Nationwide Emergency Department Sample and Centers for Medicare and Medicaid Services data.

Figure 4: Dental Emergency Department Visits by Primary Payer, Children 0 to 20 Years Old



Source: ADA Health Policy Analysis of 2006 and 2012 Nationwide Emergency Department Sample and Centers for Medicare and Medicaid Services data.

Figure 5: Dental Emergency Department Visits by Primary Payer, Adults 21 to 64 Years Old



Source: ADA Health Policy Analysis of 2006 and 2012 Nationwide Emergency Department Sample and Centers for Medicare and Medicaid Services data.

Table 1: Charges for Treat-and-Release Dental Emergency Department Visits by Patient Age and Primary Source of Payment, 2012

Age	Primary Payer	Number	Average Charge per Visit	Total	Percentage of Charges
0 to 18					
	Medicare	1,223	\$715	\$874,317	0.6%
	Medicaid	137,918	\$684	\$94,375,908	61.8%
	Private	40,453	\$845	\$34,170,498	22.4%
	Self-pay	26,164	\$715	\$18,709,568	12.3%
	No charge	275	\$820	\$225,506	0.1%
	Other	6,487	\$666	\$4,322,624	2.8%
	<i>Subtotal</i>	<i>212,520</i>	<i>\$718</i>	<i>\$152,678,420</i>	<i>100.0%</i>
19 to 64					
	Medicare	125,050	\$774	\$96,774,945	7.0%
	Medicaid	613,574	\$690	\$423,537,861	30.7%
	Private	280,464	\$877	\$245,835,110	17.8%
	Self-pay	763,939	\$712	\$543,771,780	39.4%
	No charge	20,178	\$905	\$18,266,629	1.3%
	Other	73,268	\$713	\$52,271,447	3.8%
	<i>Subtotal</i>	<i>1,876,473</i>	<i>\$736</i>	<i>\$1,380,457,770</i>	<i>100.0%</i>
65 +					
	Medicare	44,865	\$1,378	\$61,842,365	85.6%
	Medicaid	1,835	\$975	\$1,788,553	2.5%
	Private	4,589	\$1,317	\$6,044,489	8.4%
	Self-pay	1,570	\$1,218	\$1,912,421	2.6%
	No charge	43	\$655	\$27,962	0.0%
	Other	604	\$1,031	\$623,042	0.9%
	<i>Subtotal</i>	<i>53,507</i>	<i>\$1,350</i>	<i>\$72,238,831</i>	<i>100.0%</i>
Total		2,142,500	\$749	\$1,605,375,021	100.0%

Source: ADA Health Policy Analysis of 2012 Nationwide Emergency Department Sample data.

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References

- ¹ Okunseri C, Okunseri E, Thorpe J, Xiang Q, Szabo A. Patient characteristics and trends in nontraumatic dental condition visits to emergency departments in the United States. *Clinical, Cosmetic and Investigational Dentistry*. 2012;4:1-7.
- ² Wall T. Recent trends in dental emergency department visits in the United States – 1997/1998 to 2007/2008. *J Public Health Dent*. 2012;72:216-220.
- ³ Lee H, Lewis C, Saltzman B, Starks H. Visiting the emergency department for dental problems: trends in utilization, 2001 to 2008. *Am J Public Health*. 2012;102(11):e77-83.
- ⁴ Wall T, Nasseh K. Dental-related emergency department visits on the increase in the United States. Health Policy Resources Center Research Brief. American Dental Association. May 2013. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0513_1.ashx. Accessed February 2, 2015.
- ⁵ Wall T, Nasseh K. Dental-related emergency department visits on the increase in the United States. Health Policy Resources Center Research Brief. American Dental Association. May 2013. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0513_1.ashx. Accessed February 2, 2015.
- ⁶ Lewis C, Lynch H, Johnston B. Dental Complaints in emergency departments: a national perspective. *Ann Emerg Med*. 2003;42(1):93-99.
- ⁷ McCormick at al. Reducing the burden of dental patients on the busy hospital emergency department. *J Oral Maxillofac Surg*. 2013; 71:475-78.
- ⁸ Lee HH, Lewis CW, Saltzman B, Starks H. Visiting the emergency department for dental problems: trends in utilization, 2001 to 2008. *Am J Public Health*. 2012;102(11):e77-83.
- ⁹ Okunseri C, Okunseri E, Thorpe J, Xiang Q, Szabo A. Patient characteristics and trends in nontraumatic dental condition visits to emergency departments in the United States. *Clinical, Cosmetic and Investigational Dentistry*. 2012;4:1-7.
- ¹⁰ Wall T, Nasseh K, Vujcic M. Majority of dental-related emergency department visits lack urgency and can be diverted to dental offices. Health Policy Institute Research Brief. American Dental Association. August 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0814_1.ashx. Accessed February 17, 2015.
- ¹¹ Nasseh K, Vujcic M, Romaine D. Diverting emergency department dental visits could save Maryland's Medicaid program \$4 million per year. Health Policy Institute Research Brief. American Dental Association. November 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1114_2.ashx. Accessed February 17, 2015.
- ¹² Healthcare Cost and Utilization Project. 2012 Nationwide Emergency Department Sample. Agency for Healthcare Research and Quality, Rockville, MD. Available at: www.hcup-us.ahrq.gov/nedsoverview.jsp. Accessed February 2, 2015.
- ¹³ Elixhauser A, Steiner C, Palmer L. Clinical Classifications Software (CCS), 2011. US Agency for Healthcare Research and Quality. Available from: <http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>. Accessed February 2, 2015.
- ¹⁴ Billings J. Ambulatory Care Sensitive conditions. Available from: http://wagner.nyu.edu/files/admissions/acs_codes.pdf. Accessed February 2, 2015.
- ¹⁵ U.S. Census Bureau. Population Estimates. Historical Data. Available from: http://www.census.gov/popest/data/historical/2010s/vintage_2012/index.html. Accessed February 18, 2015.
- ¹⁶ U.S. Department of Health & Human Services. Agency for Healthcare Research and Quality. 2012 Medical Expenditure Survey. Available at: http://meps.ahrq.gov/mepsweb/data_stats/download_data_files.jsp. Accessed February 2, 2015.

- ¹⁷ Centers for Medicare & Medicaid Services. CMS Statistics Reference Booklet. Available from: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Statistics-Reference-Booklet/2014.html>. Accessed February 2, 2015.
- ¹⁸ Skinner H (Truven Health Analytics), Blanchard J (RAND), Elixhauser A (AHRQ). Trends in Emergency Department Visits, 2006-2011. HCUP Statistical Brief #179. September 2014. Agency for Healthcare Research and Quality, Rockville, MD. Available from: <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb179-Emergency-Department-Trends.pdf>. Accessed February 2, 2015.
- ¹⁹ Barrett M, Lopez-Gonzales L, Hines A, Andrews R, Jiang J. An Examination of Expected Payer Coding in HCUP Databases. 2014. HCUP Methods Series Report # 2014-03 ONLINE. December 17, 2014. U.S. Agency for Healthcare Research and Quality. Available from: <http://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>. Accessed February 2, 2015.
- ²⁰ National Center for Health Statistics. Health, United States, 2012: With Special Feature on Emergency Care. Hyattsville, MD. 2013.
- ²¹ Centers for Medicare & Medicaid Services. CMS Statistics Reference Booklet. Available from: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Statistics-Reference-Booklet/2014.html>. Accessed February 2, 2015.
- ²² In 2006, dual-eligible Medicare and Medicaid recipients were grouped under Medicaid in the NEDS; this was changed to Medicare starting in 2008.
- ²³ Centers for Medicare & Medicaid Services. CMS Statistics Reference Booklet. Available from: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Statistics-Reference-Booklet/2014.html>. Accessed February 2, 2015.
- ²⁴ Wall T, Nasseh K. Dental-related emergency department visits on the increase in the United States. Health Policy Resources Center Research Brief. American Dental Association. May 2013. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0513_1.ashx. Accessed February 2, 2015.
- ²⁵ Vujicic M, Goodell S, Nasseh K. Dental benefits to expand for children, likely decrease for adults in coming years. Health Policy Resources Center Research Brief. American Dental Association. April 2013. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1013_3.ashx. Accessed February 2, 2015.
- ²⁶ Nasseh K, Vujicic M. Dental benefits expanded for children, young adults in 2012. Health Policy Institute Research Brief. American Dental Association. October 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1014_5.ashx. Accessed February 17, 2015.
- ²⁷ Leonard Davis Institute of Health Economics. The Effects of the ACA's Under-26 Mandate: What Do We Know? June 2014. Available at: <http://ldi.upenn.edu/voices/2014/06/18/the-effects-of-the-aca-s-under-26-mandate-what-do-we-know>. Accessed February 2, 2014.
- ²⁸ Vujicic M, Yarbrough C, Nasseh K. The Effect of the Affordable Care Act's Expanded Coverage Policy on Access to Dental Care. *Med Care*. 2014;52(8):715-719.
- ²⁹ Nasseh K, Vujicic M. Dental benefits expanded for children, young adults in 2012. Health Policy Institute Research Brief. American Dental Association. October 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1014_5.ashx. Accessed February 17, 2015.
- ³⁰ Centers for Medicare & Medicaid Services. Dental Benefits for Children in Medicaid. Available from: <http://www.medicare.gov/medicaid-chip-program-information/by-topics/benefits/dental-care.html>. Accessed February 2, 2015.
- ³¹ Centers for Medicare & Medicaid Services. Dental Benefits for Adults in Medicaid. Available from: <http://www.medicare.gov/medicaid-chip-program-information/by-topics/benefits/dental-care.html>. Accessed February 2, 2015.
- ³² Wall T, Nasseh K, Vujicic M. Financial barriers to dental care declining after a decade of steady increase. Health Policy Institute Research Brief. American Dental Association. October 2013. Available from:

http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1013_1.ashx. Accessed February 20, 2015.

³³ Vujicic M. The booming Medicaid market. *JADA* 2015;146(2):136-38. Available from: [http://jada.ada.org/article/S0002-8177\(14\)00085-3/pdf](http://jada.ada.org/article/S0002-8177(14)00085-3/pdf). Accessed February 20, 2015.

³⁴ Calculation based on estimated average cost for a dental visit in a dental office in Nasseh K, Vujicic M, Romaine D. Diverting emergency department dental visits could save Maryland's Medicaid program \$4 million per year. Health Policy Institute Research Brief. American Dental Association. November 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1114_2.ashx. Accessed April 2, 2015.

³⁵ Wall T, Nasseh K, Vujicic M. Majority of dental-related emergency department visits lack urgency and can be diverted to dental offices. Health Policy Institute Research Brief. American Dental Association. August 2014. Available from: http://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0814_1.ashx. Accessed February 17, 2015.

³⁶ WISH-TV. Dental care is now available all night long. March 12, 2015. Available at: <http://wishv.com/2015/03/12/dental-care-is-now-available-all-night-long/>. Accessed March 20, 2015.

³⁷ McCormick AP, Abubaker AO, Laskin DM, Gonzales MS, Garland S. Reducing the burden of dental patients on the busy hospital emergency department. *J Oral Maxillofac Surg*. 2013;71(3):475-78.

³⁸ The Center for Michigan. Success story: filling community cavities in Battle Creek. March 2010. Available from: <http://www.mlgma.org/events/summer10/michigans-defining-moment.pdf>. Accessed February 2, 2015.

³⁹ American Dental Association. Reduce health care costs by treating dental disease in the dental practice instead of the ER. Council on Access, Prevention & Interprofessional Relations.

⁴⁰ McCormick AP, Abubaker AO, Laskin DM, Gonzales MS, Garland S. Reducing the burden of dental patients on the busy hospital emergency department. *J Oral Maxillofac Surg*. 2013;71(3):475-78.

⁴¹ Washington State Health Care Authority. Emergency Department Utilization: Update on Assumed Savings from Best Practices Implementation. 2014. Available from: <http://www.hca.wa.gov/Documents/EmergencyDeptUtilization.pdf>. Accessed February 2, 2015.

⁴² Singhal A, Caplan DJ, Jones MP, Momany ET, Kuthy RA, Buresh CT, Isman R, Damiano PC. Eliminating Medicaid adult dental coverage in California led to increased dental emergency visits and associated costs. *Health Affairs*. 2015 May 1;34(5):749-756.

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