

## Supplemental Materials

This section contains 2 parts. In the first part is the eTable, which presents detailed results for the article: “Visits to US Emergency Departments by 20 to 29 Year-olds with Chief Complaint of Toothache during 2001-2010.” This table includes US census estimates, estimated emergency department (ED) visit counts, and estimated population-based ED visit rates for all-causes, back pain and toothache ED visits made by 20-29 year-olds in each year 2001 through 2010. In the second part, we used Medical Expenditure Panel Survey (MEPS) data to provide supporting information for our study of ED use for toothaches in 20-29 year-olds.

### **US Dental Care Insurance and Utilization and Poverty Levels among 20-29 Year-olds: Results from Analysis of 2009-2010 Medical Expenditure Panel Survey Household Component.**

We relied on the MEPS data to achieve 2 objectives. MEPS provides nationally- representative data about both medical and dental benefits and thus allowed us to characterize the degree that medical care insurance was a proxy for dental coverage (Objective 1). Because the National Hospital Ambulatory Medical Care Survey (NHAMCS) lacks a dental coverage variable, this information from MEPS makes it easier to contextualize results about medically uninsured young adults disproportionately using the ED for toothaches. Furthermore, we could find no published data about dental care benefits and/or utilization among US 20-29 year-olds relative to other age groups in the US, although such information would be useful in better understanding why younger adults are the highest utilizers of the ED for toothaches. Hence, we also used MEPS to better understand some potential barriers to professional dental care faced by younger adults and to determine how these compare to their younger or older counterparts (Objective 2).

#### **Methods**

MEPS is a nationally representative survey administered by the US Agency for Healthcare Research and Quality, which contains information about medical and dental care use, insurance, and expenditures of the US civilian, non-institutionalized population. Clusters, strata, and person-level weights are used in

MEPS to account for an individual's probability of being sampled and to generate nationally representative estimates and standard errors for the non-institutionalized US population.<sup>1</sup> For the purposes of this project, we combined the 2009 and 2010 MEPS Household Component data and created age categories similar to our analysis on NHAMCS. We then extracted, recoded, and generated weighted proportions for the following variables: dental visits (dichotomized as none vs. 1 or more) during the previous calendar year; dental coverage for the previous calendar year (all year vs. none/part of the year); medical insurance for the year (all year vs. none/part of the year); and poverty (less than 100% Federal Poverty Level-FPL vs all other FPL categories). We used the survey commands in Stata to account for the complex sampling design in MEPS. Analysis of MEPS data is not considered human subjects research by the University of Washington and thus does not require IRB approval or determination of exemption.

### **Results**

We found that 99.5% of 20-29 year-olds in 2009-2010 who were medically uninsured also lacked dental coverage during all or part of the year. Thus, being uninsured for medical care is a good proxy for being uninsured for dental care. However, among 20-29 year-olds with medical insurance all year, only 56.2% had dental coverage during that entire year.

Of all of the age categories, 20-29 year-olds had the lowest proportion with at least 1 dental visit (32.1%) and the second lowest proportion with dental benefits (33.7%) after 50+ year-olds (who probably have the lowest levels of dental coverage because Medicare has not traditionally included dental benefits). Second only to children, 18.3% of 20-29 year-olds were poor (eFigure). Yet, compared to children, fewer younger adults visited a dentist or had dental coverage. This finding supports other research indicating that children in general have benefited from more generous resources and funding to facilitate dental care access.<sup>2-4</sup> Adults, 30 years and older, made a dental visit in higher proportion than 20-29 year-olds, likely because more older adults have employer-based dental benefits and/or the financial means to afford professional dental care.

### **Conclusion**

Many 20-29 year-olds are likely in a difficult transition period when it comes to dental care access—facing more barriers than either their younger or older counterparts.

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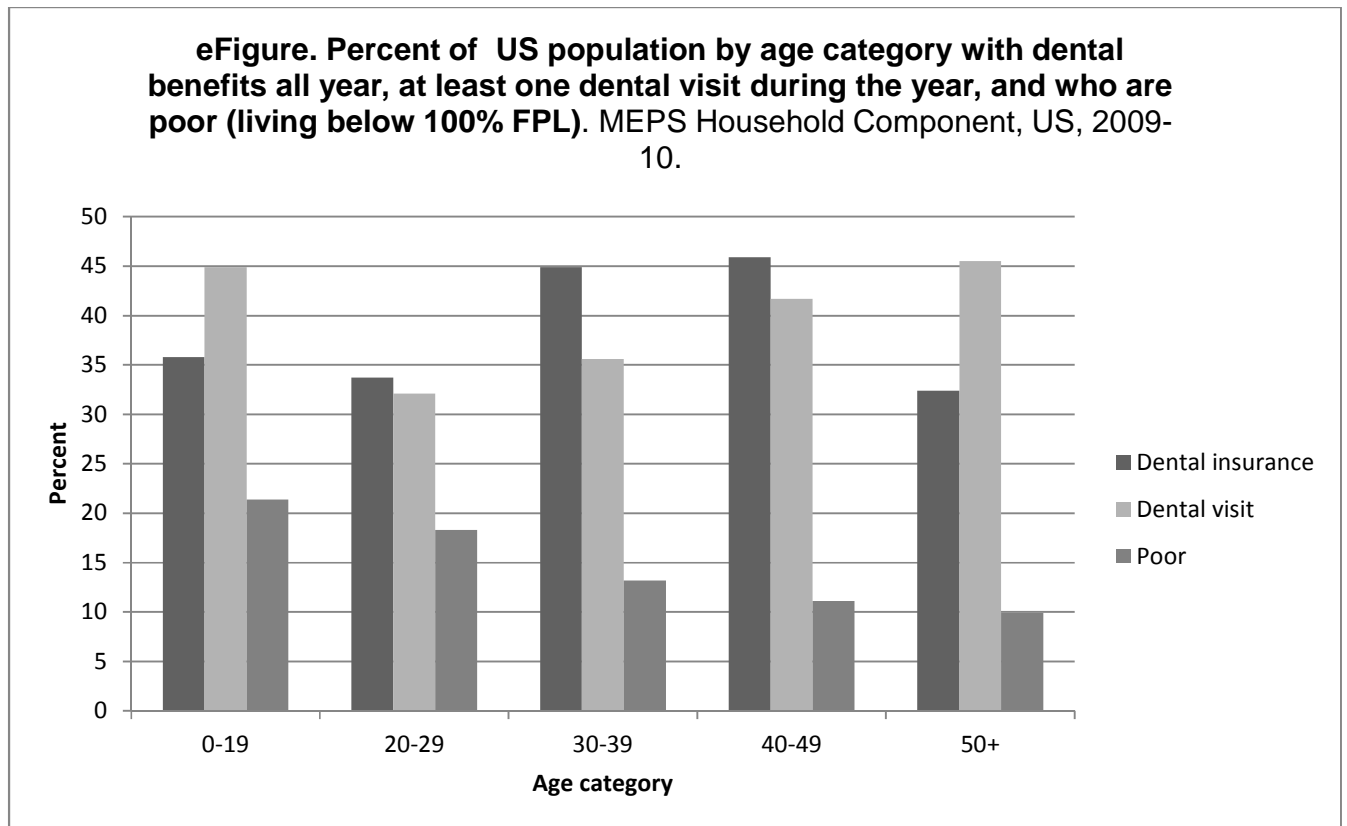
**eTable**

**Estimates for US Census, ED visit and population rates for all-causes, back pain and toothache ED visits in 20 to 29 year-olds in years 2001 through 2010.**  
NHAMCS, US, 2001-2010 and US Census 2001-2010.

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YEAR	US Census estimate	Weighted all-cause ED visits	All-cause ED visit/1000 US pop'n	Weighted back pain ED visits	Back pain ED visits/1000 US pop'n	Weighted ED toothache visits	Toothache ED visits/1000 pop'n
2001	36,420,707	18,145,000	498.2	845,000	23.2	373,000	10.2
2002	36,938,341	18,346,000	496.7	960,000	26.0	342,000	9.3
2003	37,635,197	18,248,000	484.9	748,000	19.9	456,000	12.1
2004	38,084,470	18,648,000	489.7	840,000	22.0	423,000	11.1
2005	38,589,849	19,381,000	502.2	1,007,000	26.1	478,000	12.4
2006	41,233,350	20,943,000	507.9	952,000	23.1	503,000	12.2
2007	41,514,035	20,193,000	486.4	983,000	23.7	592,000	14.2
2008	41,974,133	21,130,000	503.4	886,000	21.1	597,000	14.2
2009	42,956,335	22,840,000	531.7	1,084,000	25.2	602,000	14.0
2010	42,614,834	22,624,000	530.9	1,028,000	24.1	669,000	15.7

\* NHAMCS estimates are rounded to the nearest thousandth as directed by NCHS



1. MEPS: Medical Expenditure Panel Survey. Agency for Health Care Research and Quality (AHRQ). <http://meps.ahrq.gov/mepsweb/>. Accessed July 26, 2014.
2. Decker SL. Medicaid payment levels to dentists and access to dental care among children and adolescents. *JAMA: the Journal of the American Medical Association*. Jul 13 2011;306(2):187-193.
3. Ku L, Sharac J, Bruen B, Thomas M, Norris L. Increased use of dental services by children covered by Medicaid: 2000-2010. *Medicare Medicaid Res Rev*. 2013;3(3).
4. Vujcic M, Nasseh K, Wall T. Dental Care Utilization Declined for Adults, Increased for Children during the Past Decade in the United States. Health Policy Resources Center Research Brief. Chicago, IL: American Dental Association. February 2013.