

Prevalence of Non-Traumatic Dental Problems in West Virginia Emergency Departments

Joshua Austin, M.A., MSc

Special Thanks to Nathan Pauly, Ph.D.; Adam Baus, Ph.D.; Steve Davis, Ph.D. and Marshall Health's Dentistry, Oral & Maxillofacial Surgery Department

Gratitude to Our Funder

**CLAUDE
WORTHINGTON
BENEDUM
FOUNDATION**

Primary Objectives

1. Understand the prevalence and characteristics of the population who utilizes the emergency department for non-traumatic dental problems
2. Recognize the burden of oral health disease on the health care system when treatment is palliative
3. Evaluate potential policy and clinical reforms to address the needs of the population who utilizes the emergency department for non-traumatic dental problems

Data Sources

Three West Virginia Emergency Departments*

1. J.W. Ruby Memorial Hospital (Morgantown, WV)
2. Berkeley Medical Center (Martinsburg, WV)
3. Jefferson Medical Center (Ranson, WV)

**No State or Federal Database of All West Virginia Emergency Department Visits Exists*

Case Selection

- All Patients Presenting During Calendar Year 2016 to Emergency Departments Using the Epic Electronic Medical Record System
- Primary Diagnoses Indicative of a Non-Traumatic Dental Complaint as Guided by Scholarly Literature and Marshall University's Coding Experience (Addition of Facial and Neck Injury Codes Common in Oral Surgery Drastically Changed Findings)
- Only Hospitals in the WVU Medicine System

Highlights

- Half of non-emergent dental visits had Medicaid as the insurer
- 1 in 5 visits were by the uninsured
- Adults (19+) accounted for 86% of visits
- Five diagnoses accounted for 82% of all visits; four of the diagnoses could have been better addressed in a dental setting (the fifth could probably be prevented with appropriate preventive dental care)
- Mostly one-time visit patients (82%), which suggests that preventive dental care could help avoid acute problems

Potential Caveats – Research

- **No studies to date have calculated the return on investment for providing preventive dental benefits to the adult Medicaid population**
- Scholars do not know if preventive dental benefits, in this population, actually save money long-term for at least three reasons:
 1. The coverage “churn” in Medicaid is high, making it difficult to track and study
 2. Challenging to isolate the effect of preventive dental services (i.e., did the care actually prevent emergency department visits and/or comorbid chronic diseases, such as heart disease, diabetes, etc.) a.k.a. Prevention Counterfactual Problem
 3. Calculating the actual cost to Medicaid is difficult in states like West Virginia because the cost of care received in the emergency department generally ends up as charity/uncompensated care and written off by the hospital

Potential Caveats – Costs

- The United States as a whole spends nearly \$1 billion annually on emergency department visits for preventable dental conditions¹
- A 2016 American Dental Association Health Policy Institute study estimates extensive adult dental benefits would cost West Virginia \$15 - \$36 million annually, or between \$818.47 and \$953.51 per adult Medicaid beneficiary, to implement²
 - Low-end estimates for rate of accessing the dentist among Medicaid populations with current extensive benefit (24.9%); high-end estimates for those with private insurance accessing a dentist in West Virginia (51.1%)

¹Allareddy V, Rampa S, Lee MK, Allareddy V, Nalliah RP. Hospital-based emergency department visits involving dental conditions: profile and predictors of poor outcomes and resource utilization. *Journal of the American Dental Association* (1939). 2014;145(4):331-337.

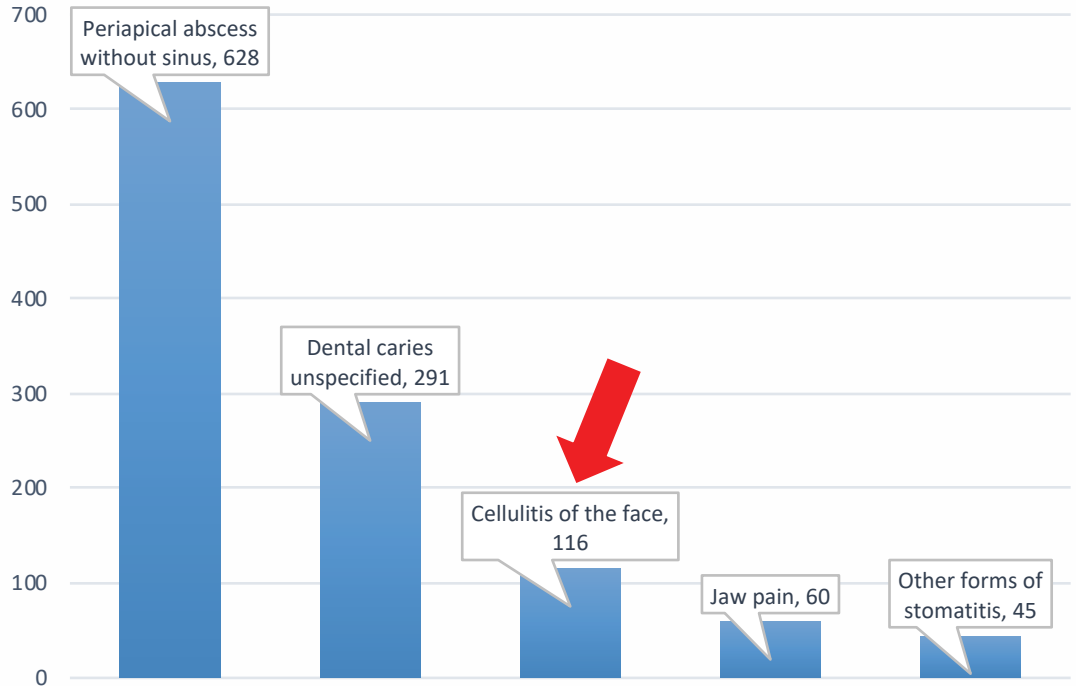
²Yarbrough C, Vujicic M, Nasseh K. Estimating the Cost of Introducing a Medicaid Adult Dental Benefit in 22 States. *American Dental Association*;2016.

Program & Policy Considerations

- For **LESS THAN THE COST** of an emergency department visit for a non-traumatic dental problem, which does not permanently address the underlying issue, a patient could receive preventive dental care for one year
- Findings lend credence to the creation of a Medicaid adult dental benefit, as this population is disproportionately utilizing the emergency department for dental care
- Access to the emergency department requires further investigation (e.g., what time of day and day of the week did patients typically visit an emergency department); this could be instructive for revising dental office/clinic hours
- Good oral health is key to overall health—addressing oral health will help general health status (e.g., heart disease, diabetes, healthy pregnancies, etc.)

Diagnoses

- 82% of visits were for five primary complaints
- 20% of patients had a co-morbidity of smoking
- Four of five complaints could be better treated in a dental setting or with preventive dental care



Costs and Prevalence

- 137,079 total visits in 2016 to the three emergency departments studied
 - 1% (n= 1,388) non-traumatic dental visits
 - 2.1% average for non-traumatic dental visits nationally¹

¹Fingar KR et al. Medicaid dental coverage alone may not lower rates of dental emergency department visits. Health Affairs. 2015;34(8):1349-1357. doi:10.1377/hlthaff.2015.0223

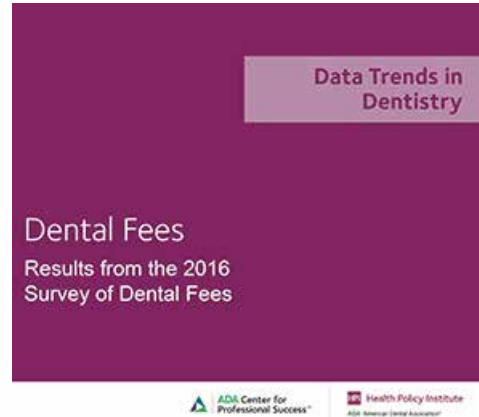
- Almost 1 in 5 visits by same patient (18% of patients; range 2-5 visits)
- **\$570 average charge per visit (\$790,682 total)**

Average Cost of Care

ADA

American
Dental
Association®

Data Source:
Average in South
Atlantic Region



Dental Care for Emergency Department Diagnoses

Periapical abscess w/o sinus

- Almost always the patient elects for an extraction, which West Virginia Medicaid covers for adults (\$85).

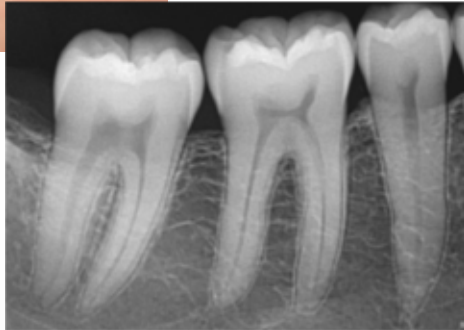
Root canal by severity & tooth location

- \$199.48 – D3220
- \$768.59 – D3310
- \$884.23 – D3320
- \$1069.61 – D3330

Dental caries unspecified

- \$118.84 – D2940

Average Cost of Care



Preventive Dental Care

New Patient

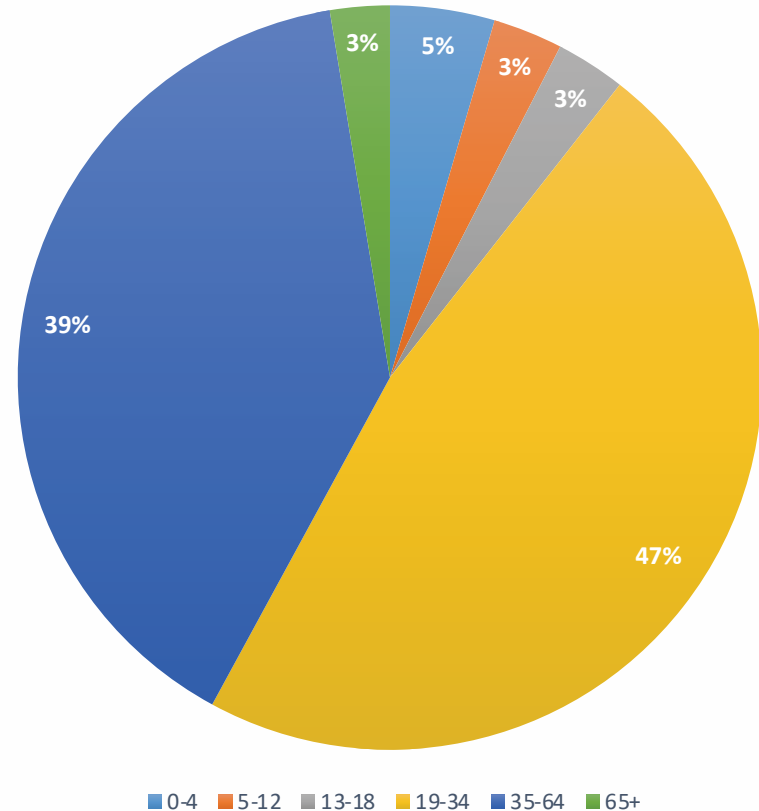
Cleaning (D1110), \$89.77 x 2 =	\$179.54
New Evaluation (D0150)	\$85.67
Ongoing Evaluation (D0120)	\$48.95
X-Rays (D0210)	\$134.63
ANNUAL TOTAL	\$448.79

Established Patient

Cleaning, \$89.77 x 2 =	\$179.54
Ongoing Evaluation, \$48.95 x 2 =	\$97.90
ANNUAL TOTAL	\$277.44

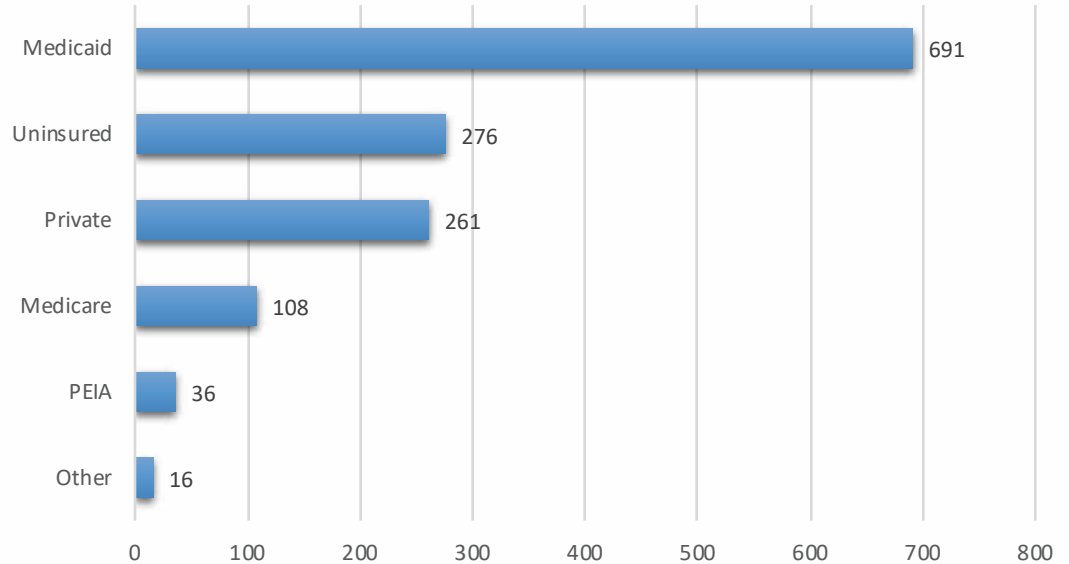
Age

- 86% between age 19 and 64
- 8% under age 12; 3% teenagers
- West Virginia Medicaid offers a child (up to age 21) dental benefit, as does the West Virginia Children's Health Insurance Program (up to age 19)



Insurer Mix

- 50% covered by **Medicaid** (82% Managed Care; 18% Fee-for-Service)
- About 1 in 5 were **Uninsured**
- Seven in 10 visits were by those with **Medicaid** or the **Uninsured**
- Positive: only three **CHIP-covered** children appeared in the insurer mix
- Oral health care needs are also great for the **Medicare** population—no traditional Medicare dental benefit and it is rare in an advantage plan



Medicaid Managed Care

- Does not mimic size of managed care organizations in state
 - Reason: West Virginia Family Health has a large portion of the Medicaid expansion population, which is adults
- Not a lot of “leakage” from out of state MCOs into West Virginia

