Wisconsin Medicaid Policy Change Leads to Increased Access to Fluoride Varnish Treatment

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Background

- Dental caries is the most prevalent childhood disease, despite it being largely preventable
- Burden of caries is largely shouldered by racial and ethnic minority children, many of whom rely on public programs like Medicaid for health care services
- Untreated caries can become severe and difficult to treat, thereby increasing treatment costs

Medicaid

- Largest source of public funding for dental and health care services for vulnerable populations in US
- Jointly funded by federal and state government, it insures millions of low-income women, children, elderly, and individuals with disabilities
- Covers dental care as required service for children, but optional service for adults in some states
- Medicaid-covered patients experience inadequate access to dental services

Fluoride Varnish

- Fluoride varnish treatment (FVT) has been advocated by the ADA, AAPHD, AAPD as a caries preventive measure for high risk children as young as 6 months old, including children from low socio-economic backgrounds
- In 2004, the State of Wisconsin introduced a policy that allowed medical care providers to be reimbursed for FVT. Currently, 24 other states have implemented a similar policy
- To date, there has been no evaluation of whether such a policy has led to increased utilization of FVT amongst Medicaid enrolled children

Why Involve Medical Care Providers?

- Physician offices represent an opportune site to reach a large number of children that make medical visits, but do not see a dentist
- Physicians have a higher participation rate in Medicaid compared to dentists
- Most infants and children see their pediatricians and family physicians for early preventive procedures such as immunizations and other health care checks
- Medical provider clinics are often open for longer hours than regular dental offices

Study Objective

- To determine the extent by which a state-level policy change in reimbursement may increase access to FVT for Medicaid enrolled children

Methods

- Study population: Children between the ages of 1 to 6 years with at least one month of Medicaid enrollment between January 1, 2002 and December 31, 2006
- Database: Electronic Data Systems Medicaid Evaluation and Decision Support (Wisconsin Department of Health and Family Services , Division of Health Care Financing)
- Database contains information on all Wisconsin Medicaid dental claims for FVT for fee for service and managed care. Other information race/ethnicity, age, provider type and sex

Statistical Analysis

- Number of claims and person-years of enrollment was calculated for each age and period separately for every enrollee
- Poisson Regression models was used to estimate rate of claims per person-year of enrollment
- Repeated measurements within an enrollee were incorporated using a generalized estimating equation approach comparing the rate of FVT claims pre and post policy change adjusted for the size of the Medicaid enrolled population

Results

- Substantial increase was seen in the number of Medicaid enrolled children,
  - Increasing 22%, from 99.7 thousands of person-years of enrollment in 2002 to 121.3 thousands of person-years in 2006
- Whites : almost 50%, African Americans 24%
- Medicaid claims for FVT in 2002-2003 totaled 3,631
- Following the policy change, claims for FVT increased to 28,303 (post-policy 2004-2006)

Results

- Medical care providers (MCP) submitted 38% of the claims
  - Majority by physicians 55% and,
  - Pediatricians submitted 86% of physician claims for FVT
- Rate change for FVT was highest for children between ages 1 and <2 years (RR = 26.3, 95% CI: 21.4-32.5)
- 84% of the increase in FVT claims for children less than 2 years was due to MCPs involvement

Rate of FVT Claims for Wisconsin Medicaid

Characteristics	Rate of Fluoride Varnish Treatment		Rate ratio (95% CI)
	2002-2003 Pre-policy Rate*	2004-2006 Post-policy Rate*	
Overall**	0.14 (0.003)	0.66 (0.006)	4.69 (4.50, 4.90)
Dental provider	0.12 (0.003)	0.41 (0.004)	3.45 (3.28, 3.62)
Medical Providers	0	0.17 (0.003)	N/A
Age (years)			
1-<2	0.02 (0.002)	0.47 (0.009)	26.3 (21.4, 32.5)
2-<3	0.10 (0.004)	0.46 (0.008)	4.62 (4.22, 5.06)
3-<4	0.21 (0.007)	0.72 (0.011)	3.38 (3.17, 3.60)
4-<5	0.25 (0.007)	0.91 (0.012)	3.69 (3.47, 3.93)
5-<6	0.12 (0.003)	0.36 (0.014)	3.10 (2.90, 3.32)

*Rates are per 100 person-years of enrollment **Includes providers of unknown type

Rate of Claims for FVT in Wisconsin

Characteristics	Rate of Fluoride Varnish Treatment		Rate ratio (95%CI)
	2002-2003 Pre-policy Rate	2004-2006 Post-policy Rate	
Gender: Female	0.14 (0.004)	0.66 (0.008)	4.69 (4.48, 5.05)
Male	0.14 (0.003)	0.65 (0.016)	4.62 (4.35, 4.91)
Race/Ethnicity			
African-American	0.27 (0.009)	0.47 (0.010)	1.73 (1.63, 1.86)
Hispanic	0.20 (0.009)	1.12 (0.018)	5.65 (5.20, 6.14)
Native-American	0.07 (0.018)	1.73 (0.071)	24.8 (15.1, 40.5)
White	0.07 (0.003)	0.59 (0.008)	8.48 (7.73, 9.31)
Asian	0.07 (0.012)	0.59 (0.027)	7.98 (5.87, 10.87)
Multiracial	0.08 (0.017)	0.50 (0.033)	6.49 (4.24,9.93)
Unknown	0.11 (0.006)	0.48 (0.043)	4.42 (3.76, 5.20)

Results

- Rate of FVT claims by dentists increased 3.5 fold (RR=3.5, 95% CI: 3.3-3.6) post policy
- Rate of FVT were lowest for children 5 to <6 years old (RR=3.1, 95% CI: 2.9-3.3)
- 83% of the increase in FVT claims for children between 5 and <6 years was due to claims from dental providers
- Smallest increase: African-American children
- Largest increase: Native-American children

Conclusions

- Following state policy change, substantial increase in rate of FVT claims was observed
- Children under 2 benefitted the most from involvement of medical care providers
- Children over 3 years benefitted from an increased provision by dental providers
- Native Americans children had the largest increase in FVT claims
- African-Americans children had the least increase in FVT claims

Limitations

- Lack of comparison data from other states that either have or have not implemented similar policies
- Data does not provide an explanation as to why dentists substantially increased their provision of FVT following the policy change

Implications

- The study supports the adoption of similar policies in states yet to allow medical care providers to be reimbursed for FVT
- Future research is required to evaluate whether the provision of FVT continues to improve for Medicaid enrolled children, and to evaluate whether this policy leads to a reduction in dental caries burden in Medicaid enrolled children