

Assessing the Impact of RI's Managed Oral Health Program (RIte Smiles) on Access and Utilization of Dental Care among Medicaid Children Ages Ten Years and Younger

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Medicaid programs are particularly interested in dental care because oral health problems, such as dental caries, are more prevalent and severe among children from low-income families.^{1,2} **RIte Smiles**, Rhode Island's managed oral health program, was designed to increase access to dental services, promote the development of good oral health behaviors, decrease the need for restorative and emergency dental care, and decrease Medicaid expenditures for oral health care. To achieve these goals, Rhode Island developed a new oral health delivery system, transitioning from a payer of services model to becoming a purchaser of a **dental benefit management (DBM)** program provided by private insurers. The program was implemented in September 2006 for non-institutionalized RI residents born on or after May 1, 2000, who have no other dental insurance.

In the first year of operations (2006), the program enrolled 34,000 Medicaid eligible children ages six years and younger. Since then, children have been aging into the program each year as the cohort becomes another year older. RIte Smiles now enrolls approximately 52,000 children ages birth to 11 years. Medicaid eligible children who do not qualify for RIte Smiles continue to receive Medicaid dental benefits under the traditional fee-for-service program. The State plans to continue transferring Medicaid eligible children into RIte Smiles until all children under 21 are covered by managed care.

Managed dental programs have been shown to improve utilization of services as well as provider participation in many states.^{3,4} One of the strategies adopted by RIte Smiles is promoting early and regular preventive dental care along with more active engagement by primary care physicians. Preventive dental care, such as teeth cleanings, dental sealants and fluoride treatments, is beneficial to maintain good oral health status and avert acute and restorative care.^{5,6}

The purpose of this paper is to assess the impact of the RIte Smiles Program on: 1) the percentage of Medicaid enrolled children ages ten years and under receiving dental care before and

after the inception of the RIte Smiles program, and 2) changes in the distribution of preventive versus treatments services within the eligible population during the study period.

METHODS

Data for this paper were obtained from two primary sources. All dental claims that were paid by fee-for-service Medicaid were accessed through the Department of Human Services' **Medicaid Medical Information System (MMIS)**. Claims paid through the managed care entity were accessed directly from the DBM and linked by patient identification number with the fee-for-service claims. Claims were aggregated by incurred date from January 1, 2002 to December 31, 2010 and age was determined on the date of service.

Preventive services were defined as any claim billed with a **Healthcare Common Procedure Coding System (HCPCS)** Level II procedure code between D0120 and D1555. Treatment services were defined as any claim billed with a HCPCS code greater than D2000. Normally, a claim is synonymous with a 'visit' or episode of care. The term 'visit' will be used in this paper to denote a claim or episode of care.

Table 1. Children with Any Medicaid Eligibility by Age and Year: Calendar Year 2006 through 2010
(Highlights indicate RIte Smiles eligibility age-in process)

Age	2006	2007	2008	2009	2010
0	6,758	7,005	6,705	6,650	6,461
1	7,079	7,192	7,333	7,122	7,170
2	7,127	7,046	7,173	7,439	7,390
3	6,941	6,967	6,885	7,158	7,627
4	6,547	6,172	6,034	6,145	6,600
5	5,937	5,696	5,562	5,656	5,930
6	5,694	5,548	5,442	5,453	5,776
7	5,588	5,468	5,350	5,359	5,609
8	5,537	5,358	5,297	5,255	5,453
9	5,411	5,301	5,179	5,151	5,400
10	5,368	5,202	5,130	5,046	5,331
Total	67,987	66,955	66,090	66,434	68,747

*Not all Medicaid eligible children are enrolled in RIte Smiles.

RESULTS

Table 1 illustrates the distribution of Medicaid eligible children ages birth to ten years. The highlighted area indicates the age groups that are eligible for RItE Smiles and shows how the aging-in process works. For example, in 2006, only children six years old and younger were eligible for RItE Smiles. The seven year olds were added in 2007 followed by the eight year olds in 2008. The nine and ten year olds were added in 2009 and 2010, respectively. Not all children eligible for Medicaid were actually enrolled in RItE Smiles (Those with private dental coverage or residing out of state are excluded from RItE Smiles but still covered under fee-for-service Medicaid).

Figure 1 illustrates the percent of children in each of the age groups that received any (at least one) dental service (preventive or treatment) during the period CY 2002-2010 by age group. Children ages two years and under had the lowest participation rate but the highest increase going from 1.9% in 2002 to 13.3% in 2010, an increase of 600%. Children three to five years, increased from 35.3% in 2002 to 46.2% in 2010, an increase of 30.9%. Children six to eight years and nine to ten years had comparable increases of 27.4% and 24.2% respectively. In fact, about 70% of children nine to ten years of age with Medicaid coverage received at least one dental service in 2009 and 2010.

Note that the majority of these increases occurred between 2005 and 2010, coinciding with implementation of the RItE Smiles program. Overall rates increased from 33.2% in 2002 to 34.5% in 2005, an increase of 3.9% (data not shown). However, the overall rate increased from 34.5% in 2005 to 44.2% in 2010, an increase of 28.1%.

Figure 2 illustrates the utilization of dental services by category of care (preventive vs. treatment) for the population of children ten years and younger from CY 2002 to 2010. Here we see a very distinct increase in services between 2005 and 2006 marking the beginning of the RItE Smiles program that continues through 2009. Preventive services increased from just over 600 per 1,000 in 2005 to 800 per 1,000 in 2007, a 33% increase in just two years. Similarly, treatments had remained at about 200 per 1,000 between 2002 and 2005 before increasing to 300 per 1,000 in 2007, an increase of 50%.

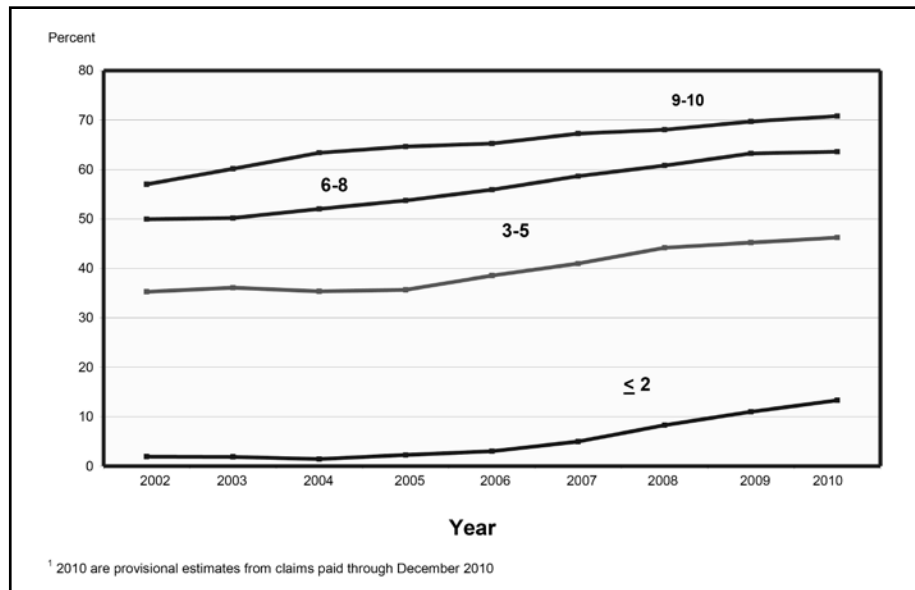


Figure 1. Dental Care Participation Rate among Medicaid Children Ages 0-10 Years by Calendar Year and Age Group¹

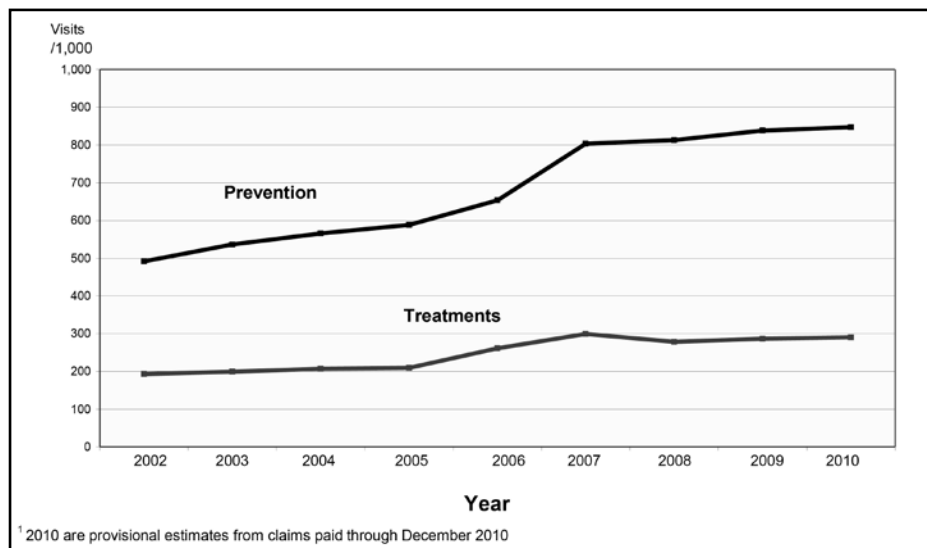


Figure 2: Utilization of Dental Services by Medicaid Children Ages 0-10 Years by Category of Care (Prevention vs. Treatment) and Year: Calendar Year 2010¹

DISCUSSION

The purpose of this paper was to assess the impact of the RItE Smiles program on access and utilization of dental care among Medicaid children ages ten years and younger between 2002 and 2010. Note that while the RItE Smiles program began enrolling children in September 2006, several initiatives were underway beginning in 2004 that could have impacted utilization of dental care. As such, there appears to have been a slight trend upward on dental care between 2002 and 2004; however the major inflection points in both participation and utilization appear between 2005 and 2007—coinciding with implementation of the RItE Smiles program. In fact, there was a 28% increase in overall participation in dental care between 2005 and 2010, a 33% increase in preventive visits and a 50% increase in treatment visits.

An important objective of the RItE Smiles program was to improve early initiation of preventive dental services among

pre-school children to comply with recommendations from the American Academy of Pediatric Dentistry and the American Academy of Pediatrics.^{7,8} The percentage of children ages two years and younger who received any dental care increased by almost 600% from 2002 to 2010, marking the first time that over 10% of this cohort received dental care. Significant progress was also made among pre-school children three to five years with participation rates approaching 50% for the first time. Similarly, participation among the school aged children nine to ten years increased to over 70% which is another milestone for this population.

While the 50% increase in the treatment visit rate is certainly impressive, we need to follow this trend more closely in the coming years. Given the prevalence of dental disease among children, we would expect the treatment visit rate to be about 50-60% of the preventive visit rate.² With early and regular preventive dental care, children can experience improved oral health status and reduced incidence of oral disease, thereby avoiding complex and expensive restorative dental treatments and lead to significant savings in Medicaid dental expenditures.

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Disclosure of Financial Interest

The authors and their spouses/significant others have no financial interests to disclose.

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