Moving from Medicaid to North Carolina Health Choice:
Changes in Access to Dental Care for NC Children

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Abstract

Objective: *The objective of this study is to identify the extent to which access to dental care changes as children move from a public program with low provider reimbursement and a reputation of non-compliant beneficiaries to another public program with higher reimbursement levels and enrollees that may be viewed differently by providers.*

Study Design: *The pre- and post-enrollment dental experience of NC Health Choice enrollees who were previously on Medicaid is compared to those who were uninsured prior to NC Health Choice enrollment.*

Data Source: *Parents of newly-eligible NC Health Choice children were sent a survey within two weeks of enrollment to determine their child's experience prior to program enrollment. Respondents were resurveyed approximately 11 months later regarding their child's experiences after receipt of NC Health Choice.*

Principal Findings: *Medicaid recipients were significantly more likely to have had a dental visit within the year before enrolling in NC Health Choice, to report a usual source of care, and have fewer unmet needs than were uninsured children. After enrollment there was improvement for both groups, and differences between the two groups disappeared.*

Conclusions: *Medicaid coverage appears to improve access to dental services for children who would otherwise be uninsured. Increased access to dental services for Medicaid children after enrolling in NC Health Choice may be due to higher provider reimbursement, but may also result from providers' perception that NC Health Choice beneficiaries are a different population and more likely to keep appointments.*

Relevance: *In a time of fiscal crisis, changes to NC Health Choice should be carefully considered to avoid loss of dental care gains afforded by this public insurance program.*

Access to dental services for low-income children in the United States is a well-documented problem.[1] Studies of dental access for low-income North Carolina children have found results that are consistent with national data. In a presentation to the North Carolina Task Force on Dental Care Access, Rozier noted that 36% (>31,000) of all NC children entering kindergarten had a history of dental caries and 25% had untreated dental disease.[2] Childhood caries are more prevalent in low-income children and those residing in rural areas without fluoridated water, and low-income children with dental caries are more likely to go untreated.[3]

The absence of regular dental care can impair the health of children in a number of ways. Untreated dental disease can affect a child's appetite and ability to eat, thereby leading to nutritional or growth problems.[4] A report of the US Surgeon General suggests that children miss approximately 52 million hours of school a year due to dental problems and related care.[5] Further, the inability to access dental services leads to more expensive use of the emergency room for care. In 1997, for example, North Carolina Medicaid paid $1,686,565 for 62,000 preventable emergency dental visits.[6] Children with oral and craniofacial conditions also can face problems with speech or their psychological well-being. Finally, poor dental health in children can also affect their dental and physical

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health as adults. There is now a growing body of research that suggests an association between periodontal infections and diabetes, heart disease and stroke, and adverse pregnancy outcomes such as prematurity and low birthweight.[7]

Barriers to the receipt of dental care are particularly acute for NC children receiving Medicaid. Only 16% of North Carolina dentists actively participated in Medicaid in 1998, which was at that time one of the lowest rates of participation in the country.[8] Lack of provider participation in Medicaid, coupled with other access barriers, has led to low use of dental services among Medicaid-eligible children. North Carolina Medicaid claims data from 1998 showed that only 12% of children ages 1-5 years, 27% of children 6-14 years, and 19% of children ages 15-20 made at least one visit to the dentist.[9]

A statewide task force convened by the North Carolina Institute of Medicine studied access to dental services among low-income populations in 1999.[10] The task force identified low provider reimbursement levels as the primary barrier to dental provider participation in Medicaid. On average, the North Carolina Medicaid program paid dentists 62% of the usual, customary and reasonable rates (UCR) for 44 of the most common dental procedures for children and only 42% of UCR for other procedures. Dentists reported losing money by seeing Medicaid patients. A 1996 study of North Carolina dentists reported that 56% of dentists in the state would be willing to see more Medicaid patients if reimbursement rates were increased to 80% of UCR.[10] In addition to low reimbursement rates, dentists also stated other reasons for their unwillingness to participate in Medicaid, including a high no-show rate among Medicaid recipients.

In October 1998, North Carolina implemented its State Child Health Insurance Program (SCHIP), called North Carolina Health Choice for Children (NC Health Choice or NCHC). NC Health Choice provides health insurance to uninsured children with family incomes that are too high to qualify for Medicaid but that are at or below 200% of the federal poverty guidelines. Most of the children enrolled in NC Health Choice come to the program immediately after losing Medicaid coverage, either because they are no longer eligible due to an increase in family income or because they are too old to qualify within their income category.

Like 19 other states, North Carolina chose to implement a stand-alone SCHIP program rather than expand Medicaid eligibility. The NC Health Choice program is administered jointly by the NC Division of Medical Assistance (which is responsible for administering the Medicaid program), and the Teachers' and State Employees' Comprehensive Major Medical Plan (hereinafter the State Employees' Health Plan). NC Health Choice is modeled after the State Employees' Health Plan, but includes coverage for vision, hearing and dental services. Blue Cross Blue Shield of North Carolina is contracted to pay NC Health Choice claims, and reimburses dentists for care delivered to children enrolled in the NC Health Choice program at its prevailing commercial dental rates of approximately 100% of UCR. Thus, while NC Health Choice is a form of public insurance, children enrolled in the program have slightly higher family incomes than children on Medicaid, and their insurance reimburses dentists at a higher rate than does Medicaid.

Although several studies document the difficulties that Medicaid recipients have in accessing dental services[1,11,12,] little has been written about the experience of Medicaid recipients as they move to other sources of dental insurance coverage. Further, there have been only a few studies that have examined access to dental services in SCHIP or comparable public insurance programs.[13,14,15] In this study, we compare the dental experience of NC Health Choice enrollees who were on Medicaid prior to NC Health Choice enrollment to that of NC Health Choice enrollees who had no insurance for at least a year prior to NC Health Choice enrollment. The pre-enrollment experiences of these two groups and the change in access once enrolled in NC Health Choice are examined. This analysis will help identify the extent to which access to dental care changes as children move from a public program with low provider reimbursement and a reputation of non-compliant beneficiaries to another public program with higher reimbursement levels and enrollees who may be viewed differently.

METHODOLOGY

The data for this study were collected as part of a larger evaluation of NC Health Choice conducted by researchers at the Cecil G. Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill under contract to the North Carolina Division of Medical Assistance.[16] The findings from that study as they relate to access to general health services have been previously reported, as was an earlier analysis of access to dental care for school-aged children that did not consider enrollees' prior dental coverage.[13,17]

Beginning in July 1999, parents of newly-eligible NC Health Choice children were sent a survey within two weeks of enrollment to determine their ability to access medical and dental services for their child prior to enrolling in the program. Respondents to the first survey were resurveyed approximately 11 months later to examine their child's experiences after receipt of NC Health Choice. Although the sample for the larger study was stratified by three age groups (ages 0-5, 6-11, and 12-17 years, all at the time of enrollment in NCHC), in this study we report results for the two older age groups only. Because of survey space limitations, we were unable to ask enough dental care questions to explore why the children in the 0-5 year age group were or were not receiving dental care. An increase in dental service use is expected as these youngest children grow up and more teeth erupt. It is, therefore, difficult to determine the extent to which an increase in dental service use in this age group is attributable to the new NC Health Choice coverage. Patterns of care for children in this youngest age group are also difficult to interpret because there is not consensus between dental and medical professionals as to when children should begin receiving regular dental services. For these reasons, the results presented in this paper pertain only to school-aged children.

Baseline surveys were sent to the parents of 599 younger school-aged children (ages 6-11) and 599 adolescents (ages 12-

17). Seventy-three percent (N=875) responded. Respondents to the baseline survey were mailed a follow-up survey and again 73% responded, for an overall response rate of 53% of the parents originally surveyed. The resultant cohort for whom data were available at both baseline and one year later consisted of 639 children (325 younger school-aged children and 314 adolescents.) In the baseline survey, parents were asked to report whether their child's most recent dental visit had been within the last year, more than a year ago, or never. In the follow-up survey, they were asked if their child had seen a dentist in the year since enrollment in NC Health Choice. Their usual source of dental care and whether their child experienced any dental access barriers were also queried. Parents who reported access barriers were asked why they were unable to obtain needed dental services.

This analysis focuses on two subsets of school-aged children, those who had Medicaid coverage during the entire year prior to their enrollment in NC Health Choice (391 children, referred to as "Medicaid graduates") and those who had no insurance for the year prior to enrollment (201 children, referred to as "uninsured"). Medicaid graduates were defined as those with Medicaid coverage that ended within 31 days of enrolling in NC Health Choice. Since North Carolina provides 12-month continuous eligibility for children enrolled in Medicaid, these children would have been covered for a full year prior to NC Health Choice enrollment. Children in the uninsured group had neither Medicaid coverage nor any other medical care insurance (by parental report) at any time during the year prior to NC Health Choice enrollment. Our survey did not specifically ask whether children had private dental coverage prior to NC Health Choice enrollment, so it is possible that some uninsured children had private dental insurance at some time in the year before NC Health Choice. However, low income families nationally have low dental insurance coverage rates, so it is highly unlikely that many of these children had private dental insurance.[18] The remaining school-aged children (N=47) were excluded from this analysis because their insurance status changed during the year prior to NC Health Choice enrollment, with insurance (typically Medicaid) for part of the year, and no insurance for the remainder of the year. It was, therefore, impossible to determine whether those children's reported dental care experience prior to enrolling in NC Health Choice reflected their experiences while insured or not.

All data were analyzed using STATA 7 statistical software.[19] McNemar's Chi was used to compare change in dichotomous categorical data (yes/no questions) over time. Changes in questions that had multiple, ordered responses were tested for significance with the Wilcoxon signed-rank test. A paired t-test was used to compare changes in means for continuous ordinal data.[20] When data are presented for all children combined, they have been weighted to adjust for the distribution by age groups of the NC Health Choice enrollees. Throughout the paper, differences in statistics pre- and post-NCHC are considered significant if $p<.05$.

At the time of the follow-up survey, the baseline survey was sent to a comparison group of parents of children who were newly-enrolled in NC Health Choice to ensure that observed changes in the original sample were not due to changes in the health care delivery environment. There were no significantly different responses to dental access questions before NCHC enrollment between the two groups. It does not appear that changes in the dental health care environment occurring over the time of our study account for the change observed post enrollment.

RESULTS

Demographic Characteristics

Demographic characteristics that might explain differences in access to and/or use of dental services are compared for Medicaid graduates and uninsured children (Table 1). Rural areas traditionally have fewer dentists per population than do urban areas which limits access to care. The difference between the percent of respondents residing in rural areas across the two groups, while statistically significant, is small.

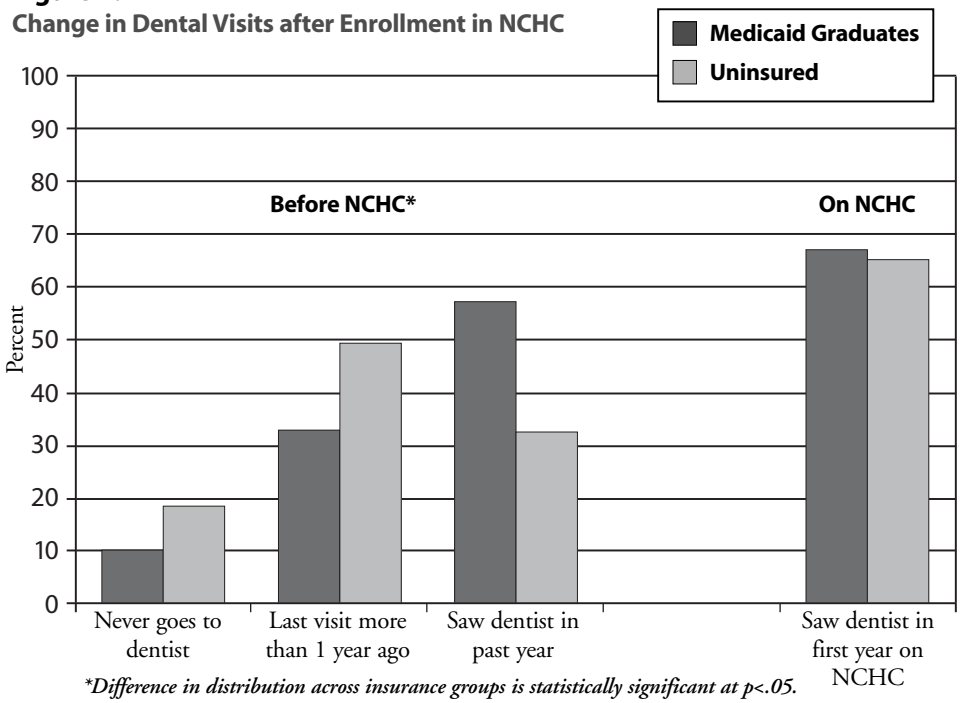
Table 1.
Demographic Characteristics

	Insurance Status in Year before NCHC Enrollment	
Characteristic	Uninsured (n=201) %	Medicaid Graduates (n=391) %
Rural Residence*	49	46
Race*		
White	51	42
Black	42	48
Hispanic	3	4
Mother's education*		
Less than high school graduate	15	15
High school graduate	36	44
Some college	35	32
College graduate	15	9

** The difference in distribution is statistically significant at p<.05*

There were significant differences in the racial composition of the two groups. Children who were uninsured prior to NCHC enrollment were more likely to be white (51%) than were Medicaid graduates (42%), and the mothers of uninsured children were more likely to have post-secondary education. Finally, although data on income prior to enrollment in NC Health Choice was not available, it is reasonable to assume that many of the uninsured children had family incomes that were slightly higher than that of the children on Medicaid, which is why they were uninsured rather than on Medicaid.

Figure 1.
Change in Dental Visits after Enrollment in NCHC



**Difference in distribution across insurance groups is statistically significant at p<.05.*

Dental Visits

In both surveys, parents were asked about the timing of their child's most recent dental visit. They were also asked where their child received dental care. There were significant differences in receipt of dental care prior to NCHC between the two groups: 57% of Medicaid recipients had a dental visit within the year before enrolling in NC Health Choice, compared with only 33% of uninsured children (Figure 1). Parents of uninsured children were more likely to report that prior to program enrollment their child had gone more than a year since receiving dental care (49%) or that s/he had never had dental care (18%), compared to the responses of parents of Medicaid children (33% and 10% respectively).

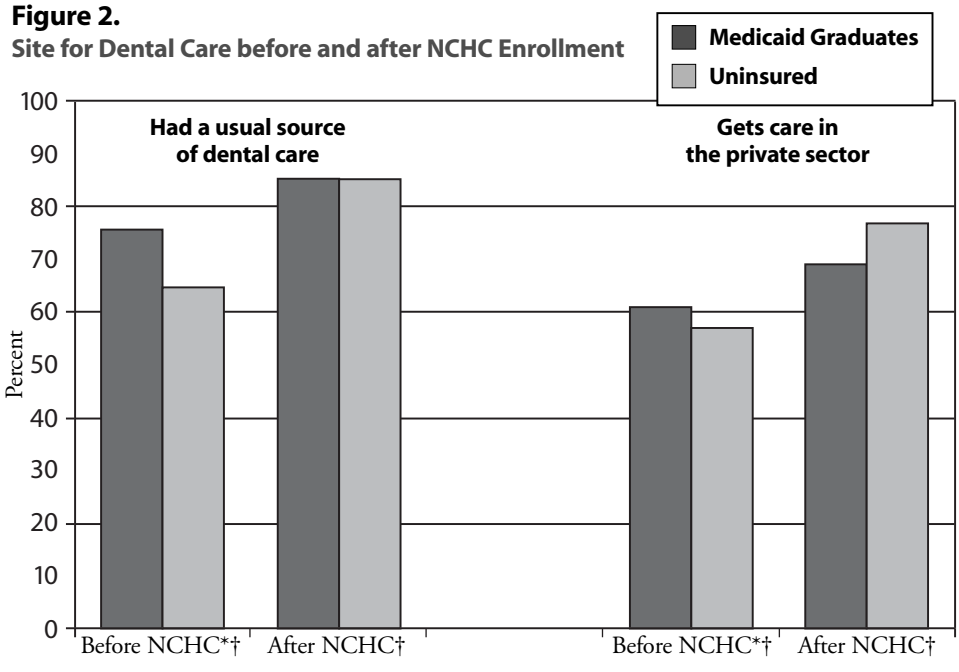
After program enrollment, differences in receipt of dental care between the two groups disappeared: 65% of previously uninsured children and 67% of Medicaid graduates made a dental visit during their first year on NC Health Choice. Although there was an increase for both groups in the percent of children who received dental care after NCHC enrollment, the improvement was much more dramatic for the uninsured children. The percent of uninsured children who had a dental visit in the previous year doubled after enrollment in NCHC compared to an increase of 18% for Medicaid graduates.

Source of Dental Care

Parents were also asked where they took their child for dental care. Children were considered to have a usual source of care if their parents reported taking them to a community clinic or health center, public health department or private dental office. Children were considered to have no usual source if their parent reported that they got care anywhere they could or that they never got care. In the year prior to NCHC enrollment, Medicaid recipients were significantly more likely than uninsured children (76% versus 64%) to have had a usual source of dental care (Figure 2). After enrollment, the percent of children with a usual source of dental care increased to 85% for both groups. As was seen with dental visits, the improvement was greater for the uninsured group, resulting in no significant difference between groups post-enrollment.

When receipt of care in the private sector is the only consideration, a different picture emerges (Figure 2). Prior to program enrollment, Medicaid children were significantly more likely than uninsured children to receive dental care at a private practice (61% versus 57%). After program enrollment the relationship was reversed, with children who were previously uninsured (77%) significantly more likely to receive care in the private sector than were

Figure 2.
Site for Dental Care before and after NCHC Enrollment



** Differences between insurance groups are statistically significant at p<.05.*
† Change across time is statistically significant at p<.05 for each insurance group.

Table 2.
Barriers to Dental Care

Characteristic	Insurance Status in Year before NCHC Enrollment	
	Uninsured (n=201) %†	Medicaid Graduates (n=391) %†
Had unmet need for dental care prior to enrollment*	58	33
Barriers prior to NCHC enrollment		
No insurance that would pay for care*	45	17
Not enough money to pay for the care*	51	16
Couldn't find dentist to see child*	6	17
Had unmet need for dental care after enrollment**	17	19
Barriers while on NCHC		
NCHC did not cover care child needed	7	8
Not enough money to pay for care*	3	7
Couldn't find dentist to see child	6	6

** The difference in distribution between the two insurance groups is statistically significant at p<.05*

*** The difference within each insurance group prior to and after enrollment is statistically significant at p<.05.*

† Denominator is all children in the insurance group.

Medicaid recipients (69%), although there was a significant increase in private sector access for both groups.

Reported Unmet Need for Dental Care

Parents were asked if there was any time in the previous six months that they felt their child needed dental care that he or she could not get. For those with unmet need, barriers to care were queried (Table 2). To get a sense of the portion of all publicly insured children facing specific barriers, the percent reporting any particular barrier is reported as a portion of all those responding to the survey, not just those with unmet need for care.

In the six months prior to NCHC enrollment, a greater percentage of parents of uninsured children reported unmet need for dental care (58%) than did parents of Medicaid recipients (33%). For uninsured children, lack of insurance coverage and money were the main obstacles to care. Medicaid parents also reported these barriers, but they were significantly less likely to do so. Surprisingly, parents of 17% of Medicaid recipients (half of those with an unmet need) reported that they did not have insurance that would pay for the care although Medicaid does cover dental services. This may reflect need for a service that Medicaid does not cover, the parent's lack of knowledge about their child's benefits, or may indicate that dentists were unwilling to accept Medicaid coverage, so as to render the child's dental coverage ineffective. An almost equal proportion of Medicaid parents (17% of all Medicaid children and 49% of those with an unmet need) reported that they could not find a dentist who would see their child, an access barrier reported significantly more often for Medicaid recipients than for the uninsured.

After a year on NCHC, significantly fewer parents in both groups reported that their child had unmet need for dental care. On an additional positive note, the percent of Medicaid parents who reported that they could not find a dentist that would see their child dropped by two-thirds after enrollment in NCHC. Finally, after enrollment Medicaid parents were more likely than uninsured parents to report lack of money as a barrier to care.

DISCUSSION

The significant differences in access to dental care between the two groups prior to enrollment in NCHC suggest that Medicaid coverage does improve access to dental services for low-income children who would otherwise be uninsured, despite the known problems of low provider reimbursement and the reported reluctance on the part of providers to accept clients they believe will not keep appointments. Prior studies have found that whites and those with higher income and/or education are more likely to use dental services.[4] Those findings, however, might be attributed to private dental insurance coverage as those same groups are more likely to have such coverage, which itself predicts use of dental services regardless of socio-economic and demographic characteristics.[18] Since the uninsured group in our study was more likely to be white, have higher income and more education, one might expect this group to have greater access to dental services before NC Health Choice than did Medicaid graduates, and the pre-NCHC differences may understate the true difference between the two groups.

In general, the experience of former Medicaid children and uninsured children appears comparable after enrolling in NC Health Choice. Almost the same percentage of children in each group was reported to have visited a dentist in the first year on the program and to have a usual source of care. However, after NCHC enrollment Medicaid children were significantly less likely to report having a private dentist as their source of care than were uninsured children. Consistent with prior research identifying low reimbursement rates as a barrier to Medicaid children's receipt of care,[6] there was an increase in the percentage of Medicaid children who were able to access care in the private sector after NCHC enrollment. But, the fact that after enrollment in NCHC access to the private sector for Medicaid children was more limited than for the previously uninsured may be due to patterns of care prior to enrollment in NC Health Choice. Dental providers in Community and Migrant Health Centers and public health departments are far more likely to accept Medicaid coverage than are many private providers. Thus, Medicaid recipients may have continued to see a public dental provider with whom they had already established a relationship. It is also possible that differences in demographic characteristics between the two groups contributes to the higher likelihood that the previously uninsured group was seen in the private sector, as this group is more likely to be white and more educated.

Moving from Medicaid to NCHC improved dental access for all children in our study. The most obvious explanation for the improved access to dental services for Medicaid children after enrolling in NC Health Choice is the improvement in provider reimbursement, a known barrier to provider participation in the Medicaid program. The fact that NC Health Choice is administered by Blue Cross Blue Shield, coupled with higher reimbursement rates, may convince previously reluctant providers to participate in the program.

However, what is unknown is the extent to which the improved access afforded by NC Health Choice is a result of providers' perception that NC Health Choice beneficiaries are a different population and more likely to keep appointments. The social factors that make keeping appointments difficult, factors such as transportation problems and inflexible work schedules, will not have changed substantially with a child's transition from Medicaid coverage to coverage by NC Health Choice. It is not known if dentists even realize that the majority of NC Health Choice enrollees were previously on Medicaid. There is a public perception that NC Health Choice is a program for the working poor and that Medicaid is a welfare program, even though many children are served by both programs at different times in their lives.

Regardless of motivation of dental providers, NC Health Choice has improved access to dental care for North Carolina's poor children. In a time of fiscal crisis, changes to this insurance program, which currently covers approximately 100,000 children,[21] should be carefully considered to avoid loss of dental care gains afforded by this public insurance program.

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