Strategies to Improve the Delivery of Child Health Care in North Carolina

Lessons from the Transition of Children (0 to 5) from Health Choice into Community Care of North Carolina Medicaid

A Background Report prepared for
The Task Force *for a* Healthier North Carolina

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Background

North Carolina, like an estimated 39 other states, operates a hybrid financing system for providing health insurance coverage for low-income children.[12] Most states use a separate non-Medicaid SCHIP program, either alone or in combination with a Medicaid program. The remaining states use the Medicaid expansion model for SCHIP.[12] Based on age and family income, children are covered by either Medicaid or a separate SCHIP. In North Carolina, this tiered system of coverage is structured in the following way:

- All children ages 0-18 years, with family income at or below 100 percent of the federal poverty level (FPL), are eligible for coverage through Medicaid. [20]
- As of January 2006, children ages 0-5 years with family income between 100 and 200 percent FPL, are also eligible for coverage through Medicaid (SCHIP Medicaid expansion).
- Children between the ages of 6 and 18 years with family income between 100 and 200 percent FPL are eligible for coverage through a separate SCHIP program (Health Choice).
- Beginning in March 2007, children ages 6-18 years enrolled in SCHIP were given access to the Medicaid managed care program (CCNC) that had already been providing services for children ages 0-5 years; however, the children receive the level of benefits in the Health Choice program.
- In addition to the current hybrid system, the recent state budget included funds for NC Kids Care which will extend access to coverage for up to 38,000 children living in families with incomes between 200 and 300 percent of the FPL. The new expansion is targeted to begin in July 2008. Families that qualify for coverage will share in the cost of care through deductibles, premiums, and co-payments for certain services. Costs will be on a sliding scale based on income. [26]

On January 1, 2006, low income children between the ages of 0 and 5 years in families between 100 and 200 percent of the federal poverty level were transferred from the North Carolina Health Choice program, a separate State Children's Health Insurance Program (SCHIP), to the Community Care of North Carolina (CCNC) Medicaid managed care program. This transition allowed North Carolina to spend the SCHIP money on children in the 6- to 18-year old age bracket and to insure a larger number of children. The State would continue to benefit from the enhanced Federal match rate to expand Medicaid as one SCHIP option. [27] In addition, the transferred children were expected to benefit from CCNC's enhanced primary care case management (E-PCCM) structure. Beginning March 1, 2007 an additional 110,000 low income children in Health Choice (SCHIP), ages 6- to 18-years, were targeted to receive the same access to CCNC's networks, while remaining in the traditional Health Choice program.

A major goal of the Community Care of North Carolina Medicaid program is to "improve access to primary care and provide a more cost efficient health care system for Medicaid recipients," in part through linking Medicaid recipients with primary care providers who deliver and coordinate care.[18] Community Care of North Carolina utilizes an enhanced primary care case management form of managed care. Primary care case management (PCCM) programs are typically designed to link each beneficiary with a primary care provider who is charged with providing the patient beneficiary with a "medical home," coordinating health care services, increasing use of primary care and preventive services, and decreasing use of emergency departments, inpatient services, and some specialty care services.[2,8] The CCNC networks are structured with these core primary care case

management components, yet are "enhanced" by the development of local support services such as case management, disease management, and other programs that are intended to improve quality of care for enrolled Medicaid recipients with specific health needs. These local networks are state (Medicaid) supported, not-for-profit, and based on local collaboration and integration among providers.

The CCNC Medicaid program and networks implemented asthma, diabetes, and other disease management programs. These disease management initiatives utilize evidence-based practice management guidelines to increase the use of appropriate medications and other therapies with the expectation that utilization of emergency department and inpatient services for these health problems will decrease.[1] Case management services target patients who have experienced a significant increase in medical costs, emergency department utilization, or inpatient hospital stays as well as those identified as requiring follow-up, outreach, and/or health education. Case management services are supported by network-developed internet case management information systems. Additional cost containment and quality improvement programs include: (1) a voluntary Prescription Advantage List to control rising pharmacy costs; (2) a dental varnishing program in which medical providers are trained to provide fluoride varnish treatments to high-risk children under 3 years of age; [28, 33] (3) ABCD (a developmental screening tool); and (4) the Improving Pediatric Access through Collaborative Care (IMPACC) program, which focuses on improving the coordination of care between primary care providers and pediatric subspecialists for children with special health care needs.

This report briefly reviews several operational domains of the transition of 0- to 5-year old children from Health Choice to CCNC Medicaid and offers recommendations for process or systems improvement. Data for this short-term evaluation were collected through review of program documents, performance of key informant interviews, requests for client enrollment, provider participation and primary care utilization reports (Health Plan Employer Data and Information Set [HEDIS®] measures), and literature reviews. [15, 19] This review of the process and outcomes of linking the 0- to 5-year old children with CCNC primary care providers is expected to inform future efforts to link these children in the SCHIP Medicaid Expansion program as well as the 6- to 18-year olds who will remain in Health Choice yet utilize CCNC services, with PCPs.

I. Outreach and Enrollment

Beginning January 1, 2006, children were enrolled into CCNC from Health Choice and then linked with a primary care provider. This was done primarily by employees of county Departments of Social Services. The enrollment process was supplemented through outreach efforts of Health Check Coordinators (HCCs) and by permitting and encouraging physicians to enroll patients at their office using a mail-in application form.

Finding 1: Transitioning Children (0- to 5-Year Olds) from Health Choice to CCNC Medicaid and Linking Them to a CCNC Primary Care Provider

Enrollment Frequencies—Enrolling and Linking Children with CCNC Primary Care Providers

As of July 2007, of the 1,217,262 Medicaid recipients in North Carolina, 1,122,637 were eligible to be enrolled in North Carolina Medicaid managed care programs. Of those, 77.4 percent were enrolled in managed care programs.[21] This proportion increased slightly from the previously reported level of 73.2 percent (July 2006) [Appendix A]. In July 2007, the highest percentage of enrollment in managed care programs was observed in Davidson County (88 percent), and the lowest in Swain County (45 percent). These data include all Medicaid recipients, as data were not reported separately for children enrolled in Medicaid.

During July 2007, 39,471 children, 0- to 5-years of age, were eligible for CCNC Medicaid through the SCHIP Medicaid Expansion Program.[22] During the Federal Fiscal Year (FFY) 2006, the unduplicated number of children enrolled at any time during the year in the SCHIP Medicaid Expansion was 53,180.[23] The specific proportion of children, age 0- to 5-years in the SCHIP Medicaid Expansion program who were linked with PCPs, were not available. Anecdotal reports indicate that there were difficulties in getting the 0 to 5 year old children linked with CCNC primary care providers, and the process was incomplete. As of June 2007, of the 115,866 children (6- to 18-years) enrolled in North Carolina Health Choice, only 23.3 percent were enrolled with a CCNC primary care provider [Appendix B]. Proportions of 6- to 18-year old Health Choice children linked with PCPs ranged from 3.5 percent in Hyde County to 39.9 percent in Craven County [Appendix B].

Process for Enrolling Children in CCNC Medicaid and Linking Enrollees with Primary Care Providers

The process for linking 0- to 5-year old children transferred from Health Choice to CCNC Medicaid with a primary care provider is fragmented, relatively uncoordinated, and lacks direct accountability. The primary responsibility for formally linking children younger than 6 years of age who have been transferred from Health Choice to CCNC Medicaid with a primary care provider resides with the county-based and -employed Department of Social Services (DSS) caseworkers. Yet, these Department of Social Services caseworkers generally do not have a direct reporting relationship with the CCNC administrative offices or CCNC networks [Appendix C]. Therefore, state-level goals of linking 0- to 5-year old children who were transferred from Health Choice to CCNC Medicaid with a primary care provider are being delegated to employees who are accountable for meeting the goals of their respective counties, not those of the state. Because the effort to link children with primary care providers had not been fully successful, other mechanisms were added to try to increase the proportion of eligible children who get appropriately linked with primary care providers. One supplemental approach to help link children with primary care providers was to use county-based Health Check Coordinators (HCCs). The Health Check Coordinators were provided with lists of children from the North Carolina Division of Medical Assistance (NCDMA) who were being transferred from Health Choice to Medicaid. They were then asked to assist with the linkage efforts [Appendix C]. This supplemental approach was a strategic decision given that Health Check Coordinators are employed by 88 North Carolina counties to assist families with obtaining medical benefits and other services needed by children, educate families about Medicaid and Health Choice, help enroll eligible children, and follow

Medicaid-enrolled children in their respective counties to assure that they are receiving well-child check-ups and recommended follow-up care. [17] Having Health Check Coordinators link children with CCNC primary care providers tied in closely to their existing job responsibilities. The third strategy for linking eligible children with CCNC primary care providers involves primary care physician practices. These physician practices were provided with brief forms and instructions to help formally link children who already come to their practice for care with primary care providers. Some Health Check Coordinators and community-based CCNC case managers then asked medical practice staff members to assist Medicaid clients with completing the brief enrollment forms and faxing completed forms to the Department of Social Services. The overall success of these three strategies has not yet been validated with quantitative evidence; however, anecdotal reports and completed key informant interviews indicate that number of eligible children linked with primary care providers has not met expectations. In addition, the interview data provide initial evidence that the processes to link patients with primary care providers vary from network to network and county to county, and that collaboration and communication among all involved entities have been inconsistent. Some CCNC networks and providers seem unaware of the respective roles of those responsible for the linkage process. However, one CCNC network directly supervises Health Check Coordinators in their geographic area; and at least one other CCNC network partners with the Health Check Coordinators for pediatric patient care issues.

Other Potential Barriers to Linking 0- to 5-Year Old Children Transferred from Health Choice to CCNC Medicaid with Primary Care Providers

Perceptions of Department of Social Services caseworkers and Health Check Coordinators about the potential advantages and disadvantages of linking children with CCNC Medicaid primary care providers is likely to influence the diligence with which the linkage process occurs. Comments made during key informant interviews suggest that there may be resistance to linking children with CCNC Medicaid primary care providers. Several persons interviewed indicated that they believe they are advocating for children by encouraging them to "exempt out" of linking with a CCNC primary care provider. Some caseworkers may believe that by linking children with CCNC primary care providers they are limiting care choices for patients. They may view the primary care provider as a "gatekeeper" who restricts service access rather than a provider who coordinates care. The "exempt out" process may also be viewed by some as less time-consuming than linking children with primary care providers. In addition, some caseworkers have expressed concern that it may be inefficient for them to link children with primary care providers because children may later show up at other provider practices and need to be re-linked. This concern about the additional workload discourages some caseworkers from diligently striving to link children with primary care providers.

The Health Check Coordinators' specific role in linking 6- to 18-year olds enrolled in Health Choice with a CCNC primary care provider is not clear. Responsibility for Health Choice clients is specified repeatedly in the Health Check Coordinator position description. [17] However, the documented expected roles and responsibilities for working with Health Choice clients are vague. And, according to key informant interviews, Health Check Coordinators may not be aware of their responsibility for Health Choice clients and do not work with them. This seems to contradict the written position description.

Information Management Systems Utilized Within North Carolina Medicaid and Health Choice

The use of multiple non-integrated information systems within North Carolina Medicaid and Health Choice poses a barrier to efficient and effective linkage of children with CCNC primary care providers. The North Carolina Medicaid and Health Choice programs, Department of Social Services caseworkers, Health Check Coordinators, CCNC networks and case managers, and CCNC participating providers utilize a number of databases to manage Medicaid and Health Choice enrollees [Appendix C]. Yet, the multiple agencies and people involved in the care of children enrolled in Medicaid and Health Choice do not access or use the same databases. These databases serve to document and manage Medicaid and Health Choice eligibility, enrollment, linkage with primary care providers, case management performed by CCNC case managers, case management performed by clinicians, disease management and registry functions, and efforts to facilitate compliance with well-child screenings, immunizations, and referrals for special health care problems. In general a distinct database exists for each primary information system activity instead of utilizing one integrated information system. For example, the State Eligibility Information System (SEIS) is used by Department of Social Services caseworkers to formally link enrollees with primary care providers during Medicaid eligibility determinations and re-determinations. Second, the Automated Information and Notification System (AINS) is used by Health Check Coordinators to track Medicaid-eligible children from birth through 20 years of age.[17] This system provides lists of those Medicaid-eligible children who are receiving regular well-child screenings and immunizations. Third, the Clinical Management Information System (CMIS) supports case management and disease management activities within the CCNC Medicaid networks. Fourth, some CCNC Medicaid networks utilize their own databases to manage similar client information [Appendix C].

Based on findings from key informant interviews, evidence suggests that the existing standard databases are not integrated to the degree necessary for tracking or managing the linkage of patients with primary care physicians, as well as identifying patients (ages 6- to 18-years in Health Choice) in need of case management services [Appendix C]. The Medicaid eligibility database, used by Department of Social Services caseworkers for linking patients with primary care providers is reported to lack real-time tracking, at the client level, of those patients/clients who have been linked with a primary care provider versus those who have not yet been linked. In addition, the efforts made by Department of Social Services caseworkers to contact clients to initiate the primary care provider linkage process are not electronically documented to facilitate monitoring of linkage activities and evaluate the relative success of the various strategies. Access to the Medicaid eligibility database for purposes of linking patients with primary care providers is reported to be restricted to the Department of Social Services caseworkers and is not available to Health Check Coordinators, CCNC networks, CCNC community-based case managers, or providers who may assist with the linkage efforts. Electronic sharing of information between all of the players who are involved with linking children with primary care providers generally does not exist. Key informant interviews revealed that there are no true "tracking systems" to monitor real-time linkage of clients with primary care providers [Appendix C]. Therefore, the 0- to 5-year old children who were transferred from North Carolina Health Choice to CCNC Medicaid may not be linked to primary care providers in an efficient manner or possibly not at all.

A second major information system limitation is related to the 6- to 18-year old Health Choice enrollees who need to be linked with a CCNC primary care provider. Because these patients are enrolled in Health Choice, their health care claims are processed by Blue Cross and Blue Shield

(BCBS) of North Carolina, which does not provide linkage with a PCP. The claims files are sent to the North Carolina Division of Medical Assistance on a weekly and monthly basis. However, findings from key informant interviews indicate that the claims data and related case management reports are not readily available to CCNC networks to facilitate rapid identification of children who are likely to benefit from case management and/or disease management programs.

Recommendation 1: Improve the Linkage of Children with Primary Care Providers

A more fully integrated and collaborative approach to the process of linking children with a primary care provider is likely to improve the overall success of the program. We offer the following recommendations to the Task Force to enhance the transition of children, aged 0 to 5 years, from SCHIP to Medicaid and link these children with a primary care provider.

Recommendation 1.1: Strengthen Collaborative Efforts Among CCNC Medicaid Networks, County Departments of Social Services, and Health Check Coordinators

Collaborative Strategic Planning:

Encourage the CCNC Medicaid networks, through future contractual requirements, to work collaboratively with Departments of Social Services and Health Check Coordinators in their geographic service areas to develop, implement, and evaluate annual strategic plans to link children with primary care providers and promote the CCNC systems and medical home concept. As a first step, this collaborative plan should address efforts to educate the Department of Social Service caseworkers and Health Check Coordinators about the advantages of the CCNC health care delivery system and the concept of the "medical home." If these front-line employees, who are charged with linking children with a primary care provider, are not convinced of the value of linking children with a CCNC primary care provider, then the linkage results are likely to be less than optimal. The CCNC Medicaid networks need to be promoted, not only as an approach to managing children with chronic illnesses, but also as an integrated health care delivery system that facilitates access to primary and preventive care. The CCNC networks should facilitate this, in part, through orienting and training Department of Social Services caseworkers and Health Check Coordinators about CCNC and the "medical home" concept. In the interim, until existing contracts are amended, the CCNC networks should be encouraged to work with other involved agencies to develop and implement plans that focus on linking patients with primary care providers and promoting the CCNC and medical home concepts. The voluntary efforts of several CCNC networks to orient Department of Social Services caseworkers and Health Check Coordinators to CCNC and the medical home concept in some counties has been reported to enhance the linkage of clients with PCPs [Appendix C]. These efforts should be expanded to other CCNC networks.

Create formal relationships and accountability

Develop a mechanism that creates a reporting relationship or accountability between county Department of Social Services caseworkers and CCNC. One proposed strategy would involve partial payment of Department of Social Services caseworker salaries by CCNC to compensate counties for linking children with primary care providers. An alternative strategy would involve compensating counties on a per case basis for linking children with primary care providers. Because per case reimbursement potentially provides incentives to link children with primary care

providers in an expedited way, perhaps without parental buy-in, accountability would need to be built into the system. Recommendations described below, concerning data systems, online documentation of linkage attempts, and monitoring systems, are proposed to facilitate accountability.

Restructure Health Check Coordinator Responsibilities:

Restructure the outreach strategies of Health Check Coordinators to proactively educate Medicaid and Health Choice families about the CCNC networks at the time of enrollment or re-enrollment. The first documented "primary purpose" in the Health Check Coordinator Job Description is to "Increase community and family awareness of the benefits of Carolina ACCESS/Community Care of North Carolina and Health Check and Health Choice program." [17] This primary purpose supports the process of encouraging and assisting parents to link children with CCNC primary care providers. Ideally, this educational process should occur when children are enrolled in Medicaid or Health Choice rather than after a problem is detected (e.g., lack of routine health visits or inappropriate use of emergency department services). The Health Check Coordinators' operational strategies should be restructured so that the Health Check Coordinators meet with Medicaid and Health Choice clients shortly after enrollment to discuss the medical home concept, advantages of the CCNC program, and the importance of well child checks, immunizations, and other preventive care, and to verify that children have been linked with primary care providers. If a primary care provider has not been selected by a client, the Health Check Coordinator should facilitate the link at this meeting. This proposed approach is expected to facilitate more appropriate use of services.

Clarify the Health Check Coordinator Role:

Clarify the role of the Health Check Coordinator in linking 6- to 18- year old children who are enrolled in Health Choice with a CCNC primary care provider. The existing Health Check Coordinator job description lists the following "Primary Purpose of Position": "Coordinate the activities of Health Check and Health Choice and serve as a link with existing child health programs, local physicians, Medicaid agencies and professional organizations." [17] The Health Check Coordinator's specific role in linking 6- to 18-year olds enrolled in Health Choice with a CCNC primary care provider is not clear, yet responsibility for Health Choice clients is specified repeatedly in the Health Check Coordinator position description. This responsibility should be delineated more clearly in the Health Check Coordinator job description, "Policies and Procedures," and in the "Suggested Local Orientation Guide for New Health Check Coordinators." In addition, the CCNC networks need to be informed of the Health Check Coordinators' responsibilities related to Health Choice enrollees.

Recommendation 1.2: Improve Collaboration and Communication by Exploring Options for New Technology to Enhance Existing Information Systems

Explore the use of new, integrated, or enhanced information systems utilized by Department of Social Services caseworkers, Health Check Coordinators, and others involved with linking children to CCNC primary care providers. Well designed information systems that facilitate sharing of information among the those who link children with primary care providers is likely to improve linkage success. The information systems need to support and facilitate the linkage process, provide mechanisms for documenting contacts with clients and linkage attempts, and

monitor the relative success of alternative linkage strategies. Creating a more fully integrated information system that can be used and viewed by all involved with the linkage process is likely to improve communication and collaboration. One proposed approach is to add a primary care provider linkage tracking component to the State Eligibility Information System (SEIS) used by Department of Social Services case workers. This proposed tracking system would include a simple data entry screen to document attempted contacts with families (to link patients with primary care providers), including the date, time, reason for the contact, person initiating the contact, and result of the contact. If this component of the system were made available on line to all persons involved in the linkage process, a more coordinated effort to link patients with primary care providers could be developed. This proposed tracking system would also include on line real-time tracking reports and reminders that list enrollees not yet linked with primary care providers. These on line reports would be automatically updated whenever an enrollee is linked with a primary care provider. The proposed system module and data would also be used to generate reports to monitor and evaluate progress and the respective success of each strategy used to link children with primary care providers, and support continuous quality improvement efforts.

Link the State Eligibility Information System and Automated Information and Notification System databases to improve the efficiency and availability of information available to Health Check Coordinators. The Health Check Coordinators utilize the Automated Information and Notification System to identify and follow Medicaid-eligible children in their respective counties to determine which are receiving regular Health Check screenings, immunizations, and referrals for special health care problems. A link between AINS and SEIS is likely to facilitate a more coordinated approach by Health Check Coordinators so that outreach efforts to encourage appropriate utilization of health care services can occur simultaneously with efforts to link enrollees with primary care providers, avoiding duplication of effort. The information systems used to monitor the linkage of children with CCNC primary care providers should also include the 6- to 18-year olds who are enrolled in Health Choice.

II. Utilization of Primary Care Providers for Routine Well-Child and Preventive Visits

Children between the ages of 0- and 5-years of age, who were enrolled in North Carolina Health Choice (SCHIP), were transferred to the Community Care of North Carolina (CCNC) Medicaid managed care program. It was expected that these children could benefit from CCNC's enhanced primary care case management structure and services. The objectives of the Community Care of North Carolina (CCNC) Medicaid managed care models are "cost effectiveness, appropriate use of health care services, and improved access to primary preventive care." [18] These objectives are expected to be accomplished, in part, through the process of linking children in the CCNC networks with primary care providers who are responsible for coordinating care and providing primary care and preventive services. The efforts of primary care providers in achieving health access and quality of care goals can be enhanced with systematic implementation of evidence-based administrative support systems.

Performance improvement initiatives rely on measurement and monitoring of the constructs of interest, in this case, access to primary and preventive health care services for children enrolled in CCNC Medicaid. In 2001 the Centers for Medicare and Medicaid Services (CMS) recommended that Medicaid and SCHIP programs use a set of seven core measures to assess performance. Four of these measures are pediatric-focused: (1) well child visits in the first fifteen months of life; (2)

well child visits in the third, fourth, fifth, and sixth years of life; (3) use of appropriate medications for children with asthma; and, (4) children's access to primary care practitioners. [19, 23] These measures are based on the data specifications outlined by the Health Plan Employer Data and Information Set (HEDIS®). However, states can modify the HEDIS® measures as necessary, depending upon availability of data.

The Health Plan Employer Data and Information Set (HEDIS®), sponsored by the National Committee for Quality Assurance (NCQA), is a standardized set of performance measures that allows comparisons between health plans of performance in several key areas, such as well-child checks and immunization delivery. [3,14] These measures are widely used by employer-based managed care organizations, state Medicaid programs, and SCHIP plans, and can be used to compare the performance of Health Choice and CCNC Medicaid on several preventive services measures to estimate whether 0- to 5-year old children may achieve expected health benefits by transferring from Health Choice to CCNC Medicaid.

In this report, the utilization of primary care providers for routine well-child visits and preventive care was briefly assessed by performing a limited review of HEDIS® measures, comparing CCNC Medicaid programs with Health Choice, North Carolina fee-for-service Medicaid, national averages, and 2006 Medicaid HEDIS ninetieth-percentile benchmarks, as available. Additionally, interview data and program documents were reviewed to ascertain some of the strategies used by the CCNC Medicaid program and provider networks to encourage and facilitate appropriate utilization of well-child and preventive care services.

Finding 2: Utilization of Primary Care and Preventive Services

HEDIS Performance Measures

Children's access to primary care providers is generally defined within HEDIS® as the percentages of persons 12 to 24 months, 25 months to 6 years, 7 to 11 years, and 12 to 19 years of age who had a visit with a primary care provider during the measurement year. [19] For the 12 to 24 month old children, CCNC Medicaid and North Carolina Health Choice performance were nearly identical for this measure. Yet, for the other three age groups, North Carolina Health Choice measures exceeded the CCNC Medicaid measures by 1.2 to 5.7 percentage points. The CCNC Medicaid programs and NC Health Choice exceeded the national averages on this measure for each of the four age groups in calendar years 2003, 2004, and 2005 by approximately 2 to 11 percentage points. [19] Yet, the CCNC 2005 rates were 1.3 to 8.2 percentage points lower than the 2006 Medicaid HEDIS benchmarks (90^{th} percentile). [21] During 2005, almost 97 percent of the CCNC sampled enrollees, age 12 to 24 months, had a visit with a primary care practitioner during that year. The 2005 proportions drop to 88.5 percent for 25 month- to 6- year olds, 84.7 percent for 7- to 11- year olds, and 82.0 percent for 12- to 19- year olds. The three measures for children at least 25 months of age fall short of the goals set by the Health Choice program for federal fiscal year (FFY) 2007: 91 percent, 91 percent, and 86 percent respectively. [21] Refer to Appendix D for additional HEDIS® comparisons.

Well child visits in the first fifteen months of life is defined within HEDIS® as "the percentage of persons who turned 15 months old during the measurement year and who had the following number of well-child visits with a primary care practitioner during the first 15 months of life: zero; one;

two; three; four; five; six or more." [19] Within the CCNC networks during calendar year 2005, 62.8 percent of children had six or more well-child visits with a primary care practitioner during the first 15 months of life. [19] This measure exceeds that of Health Choice (39.0 percent) and the HEDIS® national mean of 45.0 percent, yet is less than the 2006 Medicaid HEDIS® ninetieth-percentile benchmark of 68.6 percent.

Well child visits in the third, fourth, fifth, and sixth years of life is defined within HEDIS® as "the percentage of persons who were three, four, fix, or six years of age during the measurement year who received one or more well-child visits with a primary care practitioner during the measurement year." [19] CCNC Medicaid (63.3 percent, 2005) exceeded NC Health Choice (58.2 percent) on this measure by 5.1 percentage points and the national HEDIS® mean (62.0 percent) by 1.3 percentage points. CCNC fell short of the 2006 Medicaid HEDIS® ninetieth percentile benchmark of 77.6 percent by 14.2 percentage points.

Adolescent well care visits is defined within HEDIS® as "the percentage of persons who were 12 to 19 years of age who had a least one comprehensive well-care visit with a primary care practitioner or an OB/GYN during the measurement year." [19] CCNC Medicaid did not meet the HEDIS® national mean values in calendar years 2003, 2004, or 2005. Only 32.2 percent of adolescents enrolled in CCNC Medicaid were reported to have received a well-care visit (as defined above) during calendar year 2005. In 2005 CCNC fell short of the 2006 Medicaid HEDIS® ninethieth percentile benchmark by 23.7 percentage points. Data were not available for North Carolina Health Choice for this measure.

Childhood immunization rates are defined within HEDIS® as the percentage of enrolled children who turned 2 years of age during the measurement year and who received all appropriate immunizations by their second birthday. The standard for "appropriate" immunizations has changed over time. The first combination rate (in 2004) included: four DtaP/DT, three IPV, one MMR, two H influenza type B (three in 2006), and three hepatitis B vaccines by the child's second birthday. The second combination rate (in 2004) included all immunizations in combination 1, and added one varicella (chicken pox) vaccine (VZV). In 2006, the combination also included four pneumococcal conjugate vaccines by the second birthday." [19] Childhood immunization rates in CCNC Medicaid were slightly lower than the national HEDIS® average in calendar year 2004, for combined rates I and II. The 2004 CCNC Child Immunization Rate II was 26.1 percentage points lower than the 2006 Medicaid benchmark of 82.7 percent. No comparable data are available for North Carolina Health Choice; however, Health Choice has established 2007 to 2009 performance objectives to increase immunization rates to 100 percent for 2 year olds and for children entering school.

Adolescent immunization rates are defined within HEDIS® as the percentage of children who have received the appropriate immunizations by age 13 years.[19] In 2004, Rate 1 included one additional MMR and three Hepatitis B vaccines. Rate 2 included the Rate 1 vaccines with the addition of one Varicella (chicken pox) vaccine. In calendar year 2004, CCNC Medicaid reported an Adolescent Immunization Rate I of 21.3 percent, less than half of the HEDIS® national mean value of 51.9 percent. [19] The 2004 CCNC Medicaid Adolescent Immunization Combination II rate of 1.9 percent is 59.6 percentage points lower than the 2006 Medicaid HEDIS® benchmark rate. No data are available for NC Health Choice for these measures.

The state of North Carolina began to roll out its state immunization registry in June 2005. At this time only statewide data are available. "According to the 2006 Child Health Report Card published by the NC Institute of Medicine, the immunization rate of all two-year old children is 85.2%. The rate for all children at school entry is 99.2%." [23]

In summary, the reported HEDIS data suggest that NC Health Choice exceeded CCNC Medicaid on some standard performance measures of well-child and preventive services, CCNC Medicaid performed better than Health Choice on others, and data were missing for Health Choice for some measures. For non-immunization measures CCNC Medicaid generally met or exceeded the national average performance levels, but often fell short of the 90th percentile benchmark levels. For immunization measures, CCNC Medicaid did not meet the 2006 Medicaid 90th percentile benchmark or even the national mean values. Health Choice immunization performance data were not available.

Health Status and Health Behaviors of Children in North Carolina Medicaid

Child Health Assessment and Monitoring Program

The Child Health Assessment and Monitoring Program (CHAMP) survey was developed in the fall of 2004 and implemented by the North Carolina State Center for Health Statistics in January 2005. [29] CHAMP measures the health characteristics of children ages 0 to 17. Eligible children for the survey are drawn each month from the BRFSS (Behavioral Risk Factor Surveillance System) random telephone survey of North Carolina residents aged 18 and older in households with telephones. [30] All adult respondents to BRFSS with children living in their households are invited to participate in the CHAMP survey. One child is randomly selected from each household, and the adult most knowledgeable about the health of the selected child is interviewed in a follow-up survey.

The CHAMP survey collects data on a variety of health-related topics, including breast feeding, early childhood development, access to health care services, oral health, mental health, physical health, nutrition, physical activity, family involvement, and parent opinion on topics such as tobacco and childhood obesity. [29] The Division of Medical Assistance requested that a question concerning health insurance be added to CHAMP to allow sorting of responses by Medicaid, Health Choice, and other insurers. [29] The CHAMP measures are important for monitoring the health of children in North Carolina, measuring performance of health programs, and planning strategies to improve health of populations. And, these data can be used to compare health status of children enrolled in North Carolina Medicaid and Health Choice. However, Medicaid data are not reported separately for CCNC Medicaid and fee-for-service Medicaid (smaller enrollment).

A sample of 2006 CHAMP survey results is displayed in Appendix E. These results help to identify key areas for health improvement in North Carolina children in general, as well as for children enrolled in North Carolina Medicaid and Health Choice. For example, more than 30 percent of Medicaid and Health Choice children evaluated were "overweight" (body mass index [BMI] between eighty-fifth and ninety-fourth percentile) or "obese" (BMI at or above ninety-fifth percentile). [29] Health Choice exceeded NC Medicaid for overweight or obese children by 3 percentage points. Several key contributing factors for overweight include an increased prevalence of sedentary lifestyles, increased TV or other screen time, and consumption of sugar-sweetened drinks. [5, 6, 11] Despite the need for lifestyle changes, 28 percent of Medicaid and 37 percent of

Health Choice respondents reported that they are *not* trying to encourage their children to engage in more physical activity or limit screen time. The health status and economic implications of overweight are staggering. Overweight and obese individuals are at increased risk of developing significant health problems, a few of which include heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis. [4, 6] Approximately one-third of responding parents of children in NC Medicaid indicated that their children smoke cigarettes, exceeding the Health Choice rate by 15.1 percentage points. [29] More than half (53.8%) of responding NC Medicaid parents report that their children do *not* use sunscreen with a Sun Protective Factor (SPF) of 15 or more when outside on a sunny summer day for more than 15 minutes between the hours of 10 a.m. and 4 p.m, compared with 36.8% of Health Choice parents. [29] Injuries that prevented children from participating in usual activities for at least a day during the previous month were reported by six percent of Medicaid parents and 7.3 percent of Health Choice parents. [29] Approximately 14 percent of Medicaid children missed at least 2 weeks of school in the prior 12 months because of injury or illness, compared with 16.8 percent of Health Choice children. [29] And, about one-third of children in North Carolina Medicaid (of responding parents) did not have a usual dental care provider, compared with 16.5 percent of Health Choice children. [29]

In general, for the select list of health behaviors listed in Appendix E and measured by the CHAMP survey, it appears that NC Health Choice parents generally reported healthier behaviors for their children than NC Medicaid parents. Many factors could account for these differences, including those which are independent of health care service delivery.

Systems to Promote Use of Primary Care and Preventive Services

The CCNC Medicaid and SCHIP programs have implemented a Medical Home Campaign to emphasize to patients the importance of having a "medical home" that provides preventive and primary health care services. [18] In addition, the CCNC Medicaid program formalizes this important concept by linking each enrolled child with a primary care provider. The North Carolina Health Check/EPSDT Program, administered by the Division of Medical Assistance, also supports this goal through efforts of 105 Health Check Coordinators who are based in 88 of 100 counties in the state. [17] The Health Check Coordinator responsibilities include using the Automated Information and Notification System (AINS) reports "to follow Medicaid eligible children to encourage their participation in preventive health screenings" and other preventive services. [17] The Health Check Coordinators are expected to make telephone calls and send letters, as needed, to remind patients of the need for well-child checks and to reschedule missed appointments. [17, 23] Yet, several key informant interview respondents mentioned that CCNC focuses on chronic diseases and does not actively focus on preventive services [Appendix C] because of the emphasis on cost containment and quality improvement in those enrollees with known disease. The lack of systems within CCNC to promote well-child and preventive care services seems to contradict one goal of transferring children from NC Health Choice to CCNC Medicaid, to improve well-child and preventive care for these children.

Recommendation 2: Utilization of Primary Care and Preventive Services

The focus within CCNC Medicaid on cost containment and chronic disease seems to be currently overemphasized when compared to the emphasis on preventive services. **Primary prevention must become a priority of the NC Medicaid program. The CCNC Medicaid networks,**

structured as enhanced primary care case-management programs, are uniquely positioned to expand their population-based strategies for improving access to primary and preventive health care services and thus improving the health of enrolled children. The "population health" approach generally entails the following steps: (1) identify the population of interest; (2) establish health services goals; (3) monitor utilization of health services and health status; (4) identify patients/enrollees who fail to meet specified process or outcome goals, and prioritize those who are likely to benefit from interventions; (5) apply interventions and outreach, stratifying approaches based on level of need or compliance; and, (6) evaluate the process of care, intermediate outcomes, and/or health outcomes. [7, 9, 31, 32] These steps are part of a cyclical process in performance improvement and have been demonstrated to be effective. [31]

In a population-based approach, efforts are made to reach the entire population of interest, not just those who come to clinics for well-child checks or other care. [7] If the goal is to increase the number of enrolled children who have at least six well-child checks in the first fifteen months of life, then a system must be established to monitor the number and dates of well-child checks each patient receives. For those children who fall behind the expected visit schedule, a stratified outreach process would be implemented. For example, initially a letter, signed by the primary care physician, may be mailed to the parent to remind him or her of the need to schedule and bring the child in for a well-child visit. If the letter reminder is not successful the second level of intervention, such as a personalized telephone call from the clinic nurse, case manager, or HCC, would be initiated. If the child does not then come to the clinic for a well-child check, then further outreach, such as a home visit by a case manager or HCC, may be done.

CCNC Medicaid has implemented a population model in its disease management programs. We recommend that CCNC Medicaid expand the capacity to implement population-based strategies and apply this model to primary care and prevention-based services to meet the overall goals of its program to benefit all children in the CCNC program, including those transferred in from Health Choice. This recommendation builds on the recommendations described in Section I of this report.

Recommendation 2.1: Explore Options for New Information Management Systems to Improve Primary Care and Prevention through Population-Based Strategies

Develop Integrated Information Systems to Support Population-Based Strategies:

Explore the use of new, integrated, or enhanced information systems utilized by Health Check Coordinators, CCNC case managers, and primary care providers to identify children in need of primary care and/or preventive services, document interventions, outcomes, and plans, and monitor outcomes, including overall compliance with primary care and prevention-based services. In Section I of this report we recommended the creation of a more fully integrated information system to improve communication and collaboration related to linking children with primary care providers. This involves linking data in the State Eligibility Information System (SEIS) with the Automated Information and Notification System (AINS). To improve compliance with primary care and preventive care services, we recommend the expansion of this previously outlined information system integration to also include the Clinical Management Information Systems (CMIS), North Carolina Medicaid and Health Choice claims history, North Carolina's new Immunization Registry, [25] and North Carolina's Child Health Assessment and Monitoring Program (CHAMP), which identifies risk factors in the population of interest.

Monitor Health Behaviors of All Enrolled Children:

Expand the administration of the CHAMP survey, or a subset of CHAMP survey questions, to parents of all North Carolina Medicaid and Health Choice children. Currently, CHAMP is administered to only a sample of parents of children in North Carolina. [29] Because the survey is relatively lengthy, we recommend that a subset of CHAMP survey questions be selected, according to evidence-based associations with health status and program goals, to be administered annually (for each enrolled child). This abbreviated "mini-CHAMP" survey could potentially focus on documenting the child's height and weight to calculate BMI (≥ 2 years of age), nutrition behaviors, physical activity behaviors, tobacco use, safety behaviors, and use of sunscreen. A new survey administration plan would need to be developed for the "mini-CHAMP" to reach all targeted participants, including those without telephones. For example, the survey might be administered during well-child checks by clinic staff, by Health Check Coordinators when implementing other outreach activities, by case managers, or according to strategies designed by each CCNC network or by CCNC administration (through collaborative strategic planning).

Systematically Identify Health Promotion and Primary Prevention Needs of Children:

Develop strategies to synthesize data from the "mini-CHAMP," health care claims (HEDIS® measures, such as compliance with well-child checks), the immunization registry, and Clinical Management Information Systems to identify enrolled children who are in need of primary care and preventive health care services. This system should include online real-time reports of enrollees, stratified by needs. For example, one report may list children who are not up-to-date with immunizations. Another report may include those children in need of well-child visits. Other reports may include children with multiple needs, such as immunizations, well-child visits, and coaching on health behaviors to facilitate addressing all identified preventive health needs efficiently.

Recommendation 2.2: Implement Population-Based Strategies and Improve Collaboration Among Primary Care Providers, Case Managers, and Health Check Coordinators to Improve Utilization of Primary Care and Preventive Services and Improve Health Behaviors and Health of Enrolled Populations

Collaborative and Coordinated Primary and Preventive Care:

Encourage the CCNC networks, through future contractual requirements, to work collaboratively with primary care practices and providers, case managers, and Health Check Coordinators in their geographic service areas to develop annual strategic plans to implement population-based strategies to improve the delivery of primary and preventive health care services and the health status of enrollees. These collaborative plans should include: (1) strategies for administering the mini-CHAMP survey to all enrollees in their respective networks; (2) algorithms for determining the types and level of outreach needed for enrollees based on health services needs, deficits, and health behaviors; (3) collaboration plans, involving primary care practices, case managers, and Health Check Coordinators, and, (4) plans for implementing office systems to support primary care and prevention goals. These office systems may include provider prompts, patient reminder systems, and other evidence-based strategies. [10]

III. Emerging Hybrid System of Financing Care for Low-Income Children

Finding 3: Emerging Hybrid System of Financing Care for Low-Income Children

Some states have experienced problems of coordination and equity because of the differences between Medicaid and SCHIP in processes such as enrollment. [13] North Carolina has worked to create an enrollment process and form(s) that are the same for Medicaid and Health Choice programs to reduce coordination issues. However, respondents of key informant interviews mentioned several problems experienced because of the separate SCHIP and Medicaid programs in North Carolina [Appendix C]. Some blended families have children enrolled in Medicaid and Health Choice, and other children who are uninsured because the biological children of both parents in the blended family do not qualify for either program. Parents with children in both programs, for example, 0- to 5-year olds in CCNC Medicaid, and 6- to 18-year olds in Health Choice, often have a difficult time understanding the differences in coverage between Medicaid and Health Choice. Data which quantify the number of families with children enrolled in both NC Medicaid and Health Choice are not currently available.

Both providers and clients seem confused by the multiple program names, such as CCNC, Carolina ACCESS, SCHIP, Health Choice, and individual CCNC network names. And, Health Check Coordinators answer families' questions about Medicaid, yet must refer families to Blue Cross & Blue Shield to answer questions about Health Choice. The problems associated with a lack of integrated databases were outlined previously.

Recommendation 3: Emerging Hybrid System of Financing Care for Low-Income Children

Because families are likely to have children enrolled in both Medicaid and Health Choice, it is important to improve coordination between the two programs, first by enhancing the integration of databases, and second by increasing the responsibility of Health Check Coordinators for Health Choice beneficiaries. Families need a consistent source for answers to their questions about benefits and services. Expanding the Health Check Coordinator role to provide the same types of information and services for Health Choice enrollees as currently provided for Medicaid recipients may help to alleviate some of the challenges associated with a tiered system of care.

Conclusion

North Carolina has taken significant action to help ensure appropriate and affordable coverage for low-income children; Medicaid and the Health Choice program are critical components of this effort. Providing access to the services available through the CCNC managed care network offers another opportunity to make health coverage more comprehensive for these children and to focus on preventive care, which is beneficial for both the individual and the state. The process of linking eligible children to these services should continue to be improved through enhanced collaboration and more streamlined data management systems.

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Appendix A
North Carolina Medicaid
Enrollment and Linkage with CCNC Primary Care Provider, July 2006 and July 2007

County Name	July 2006 Medicaid Eligibles	July 2006 Managed Care Eligibles	July 2006 Managed Care Enrollment	July 2006 MC Enrollment % of MC Eligibles	July 2007 Medicaid Eligibles	July 2007 Managed Care Eligibles	July 2007 Managed Care Enrollment	July 2007 MC Enrollment % of MC Eligibles
Alamance	17,991	16,321	11,396	69.82%	18,525	16,835	12,849	76.32%
Alexander	4,797	4,352	3,252	74.72%	4,798	4,346	3,388	77.96%
Alleghany	1,769	1,588	1,191	75.00%	1,802	1,631	1,357	83.20%
Anson	5,642	5,043	3,789	75.13%	5,219	4,631	3,630	78.38%
Ashe	4,152	3,733	2,576	69.01%	4,167	3,736	2,735	73.21%
Avery	2,443	2,222	1,576	70.93%	2,344	2,139	1,531	71.58%
Beaufort	8,911	8,184	6,029	73.67%	8,782	8,073	5,925	73.39%
Bertie	5,229	4,763	3,431	72.03%	5,075	4,613	3,409	73.90%
Bladen	7,963	7,277	5,687	78.15%	7,825	7,131	5,734	80.41%
Brunswick	12,785	11,934	7,611	63.78%	12,980	12,091	8,815	72.91%
Buncombe	30,332	27,663	19,528	70.59%	30,549	27,805	22,327	80.30%
Burke	13,495	12,184	8,911	73.14%	13,234	11,938	9,191	76.99%
Cabbarus	17,626	16,198	13,199	81.49%	18,053	16,573	14,454	87.21%
Caldwell	12,295	10,986	9,113	82.95%	12,488	11,146	9,664	86.70%
Camden	831	773	542	70.12%	831	771	558	72.37%
Carteret	7,156	6,547	5,609	85.67%	7,087	6,471	5,877	90.82%
Caswell	4,227	3,792	2,266	59.76%	4,111	3,667	2,011	54.84%
Catawba	20,039	18,326	13,293	72.54%	19,618	17,867	13,694	76.64%
Chatham	5,683	5,161	4,158	80.57%	5,818	5,260	4,479	85.15%
Cherokee	4,293	3,837	2,604	67.87%	4,273	3,807	2,764	72.60%
Chowan	2,879	2,651	2,101	79.25%	2,911	2,665	2,138	80.23%

Clay	1,440	1,271	942	74.11%	1,412	1,241	1,024	82.51%
Cleveland	18,604	16,711	12,888	77.12%	18,652	16,772	13,416	79.99%
Columbus	14,201	13,211	9,847	74.54%	14,075	13,104	10,566	80.63%
Craven	12,107	11,241	7,916	70.42%	12,055	11,189	8,387	74.96%
Cumberland	45,515	43,533	35,034	80.48%	46,031	43,954	35,282	80.27%
Currituck	1,897	1,768	1,241	70.19%	1,950	1,809	1,365	75.46%
Dare	2,492	2,330	1,706	73.22%	2,490	2,338	1,845	78.91%
Davidson	21,038	19,047	15,947	83.72%	22,057	20,026	17,575	87.76%
Davie	3,966	3,599	2,854	79.30%	3,850	3,455	2,801	81.07%
Duplin	9,960	9,183	7,297	79.46%	9,760	9,008	7,686	85.32%
Durham	30,160	28,345	20,279	71.54%	29,183	27,403	19,810	72.29%
Edgecombe	14,652	13,591	11,390	83.81%	14,415	13,382	11,265	84.18%
Forsyth	42,159	39,498	32,166	81.44%	42,724	39,938	34,312	85.91%
Franklin	8,546	7,825	5,693	72.75%	8,625	7,891	5,696	72.18%
Gaston	31,386	28,391	20,060	70.66%	31,937	28,869	21,097	73.08%
Gates	1,594	1,458	1,113	76.34%	1,536	1,403	1,122	79.97%
Graham	1,674	1,495	1,164	77.86%	1,700	1,494	1,244	83.27%
Granville	7,177	6,635	5,174	77.98%	7,286	6,715	5,404	80.48%
Greene	3,643	3,383	2,691	79.54%	3,704	3,452	2,839	82.24%
Guilford	58,288	53,979	34,125	63.22%	58,740	54,376	33,657	61.90%
Halifax	14,873	13,739	11,553	84.09%	14,510	13,356	11,153	83.51%
Harnett	15,384	14,300	11,021	77.07%	15,214	14,184	11,573	81.59%
Haywood	8,815	7,933	4,449	56.08%	8,377	7,502	5,345	71.25%
Henderson	11,103	9,903	7,279	73.50%	10,796	9,575	7,510	78.43%
Hertford	5,861	5,343	3,560	66.63%	5,789	5,275	3,543	67.17%
Hoke	7,036	6,691	5,410	80.85%	6,870	6,527	5,541	84.89%
Hyde	1,107	1004	407	40.54%	1,081	967	501	51.81%
Iredell	15,908	14,576	10,316	70.77%	16,139	14,755	11,424	77.42%

Jackson	4,370	3,987	2,315	58.06%	4,381	4,012	2,513	62.64%
Johnston	21,893	20,246	14,558	71.91%	22,684	21,034	15,849	75.35%
Jones	1,733	1,561	928	59.45%	1,713	1,528	998	65.31%
Lee	8,350	7,762	5,600	72.15%	8,577	7,994	6,266	78.38%
Lenoir	12,674	11,781	9,506	80.69%	12,360	11,451	9,711	84.80%
Lincoln	8,664	7,807	4,096	52.47%	8,738	7,862	5,257	66.87%
Macon	4,522	4,072	3,091	75.91%	4,366	3,927	3,220	82.00%
Madison	3,533	3,186	2,092	65.66%	3,483	3,140	2,198	70.00%
Martin	5,494	4,987	3,484	69.86%	5,417	4,919	3,451	70.16%
McDowell	6,965	6,224	4,531	72.80%	6,868	6,106	4,604	75.40%
Mecklenburg	89,518	84,739	57,292	67.61%	89,457	84,473	67,586	80.01%
Mitchell	2,624	2,331	1,194	51.22%	2,557	2,275	1,181	51.91%
Montgomery	5,399	4,939	3,288	66.57%	5,404	4,923	3,750	76.17%
Moore	9,595	8,708	6,228	71.52%	9,492	8,562	6,443	75.25%
Nash	14,875	13,763	9,410	68.37%	14,547	13,402	9,176	68.47%
New Hanover	20,991	19,427	13,325	68.59%	20,817	19,241	14,159	73.59%
Northhampton	5,326	4,813	3,121	64.85%	5,274	4,738	3,095	65.32%
Onslow	14,720	13,986	11,384	81.40%	14,677	13,908	11,742	84.43%
Orange	8,794	8,147	4,844	59.46%	8,690	8,008	5,090	63.56%
Pamlico	1,930	1,776	1,312	73.87%	1,885	1,716	1,276	74.36%
Pasquotank	6,556	6,014	4,707	78.27%	6,478	5,931	4,874	82.18%
Pender	6,520	5,977	4,507	75.41%	6,431	5,900	4,731	80.19%
Perquimans	2,079	1,900	1,281	67.42%	2,131	1,960	1,198	61.12%
Person	5,961	5,289	3,440	65.04%	5,989	5,303	3,590	67.70%
Pitt	21,399	20,213	16,298	80.63%	21,444	20,258	16,973	83.78%
Polk	2,080	1,811	1,348	74.43%	2,056	1,778	1,424	80.09%
Randolph	19,463	17,737	13,475	75.97%	19,926	18,195	14,337	78.80%
Richmond	10,598	9,742	6,857	70.39%	10,438	9,590	7,058	73.60%

Robeson	34,123	32,309	24,695	76.43%	34,169	32,291	24,495	75.86%
Rockingham	15,655	14,016	9,720	69.35%	15,796	14,132	10,118	71.60%
Rowan	18,568	16,750	11,618	69.36%	18,886	16,939	12,901	76.16%
Rutherford	11,232	10,144	7,651	75.42%	11,231	10,108	8,062	79.76%
Sampson	13,015	12,046	9,028	74.95%	13,225	12,275	9,773	79.62%
Scotland	9,830	9,170	6,983	76.15%	9,839	9,169	7,025	76.62%
Stanly	8,066	7,179	5,016	69.87%	8,268	7,369	5,612	76.16%
Stokes	6,017	5,456	3,754	68.80%	5,841	5,236	3,644	69.60%
Surry	12,010	10,735	8,323	77.53%	12,130	10,815	8,904	82.33%
Swain	2,530	2,315	965	41.68%	2,631	2,411	1,091	45.25%
Transylvania	4,088	3,665	2,751	75.06%	3,931	3,526	2,882	81.74%
Tyrell	758	691	554	80.17%	769	694	564	81.27%
Union	14,909	14,022	11,818	84.28%	15,311	14,403	12,564	87.23%
Vance	12,011	11,219	8,428	75.12%	11,885	11,106	8,457	76.15%
Wake	61,627	58,147	41,978	72.19%	61,145	57,616	45,617	79.17%
Warren	4,600	4,254	2,657	62.46%	4,603	4,222	2,574	60.97%
Washington	3,485	3,266	2,327	71.25%	3,470	3,245	2,438	75.13%
Watauga	3,171	2,835	2,021	71.29%	3,120	2,801	2,153	76.87%
Wayne	20,352	18,939	15,144	79.96%	20,213	18,750	15,403	82.15%
Wilkes	11,221	10,214	7,110	69.61%	11,240	10,207	7,658	75.03%
Wilson	14,706	13,669	10,438	76.36%	14,186	13,154	10,336	78.58%
Yadkin	4,718	4,235	2,921	68.97%	4,686	4,188	3,003	71.70%
Yancey	3,054	2,800	1,800	64.29%	2,959	2,690	1,846	68.62%
TOTAL	**1,217,496**	**1,124,519**	**822,596**	**73.15%**	**1,217,262**	**1,122,637**	**868,383**	**77.35%**

Source: [21] North Carolina Division of Medical Assistance, http://www.ncdhhs.gov/dma/ca/enroll/enroll.htm.

Appendix B
North Carolina Health Choice
June 2007 Enrollment with CCNC Primary Care Provider

County Name	NCHC Eligibles	CCNC Enroll	Percent CCNC Enrollment	County Name	NCHC Eligibles	CCNC Enroll	Percent CCNC Enroll
Alamance	1,820	609	33.46%	**Johnston**	2,536	604	23.82%
Alexander	605	108	17.85%	**Jones**	198	59	29.80%
Alleghany	203	44	21.67%	**Lee**	853	242	28.37%
Anson	402	99	24.63%	**Lenoir**	1,022	351	34.34%
Ashe	558	124	22.22%	**Lincoln**	913	211	23.11%
Avery	382	96	25.13%	**Macon**	617	187	30.31%
Beaufort	783	239	30.52%	**Madison**	381	74	19.42%
Bertie	350	103	29.43%	**Martin**	406	90	22.17%
Bladen	666	199	29.88%	**McDowell**	637	180	28.26%
Brunswick	1,511	363	24.02%	**Mecklenburg**	8,505	969	11.39%
Buncombe	3,477	814	23.41%	**Mitchell**	305	20	6.56%
Burke	1,367	293	21.43%	**Montgomery**	668	202	30.24%
Cabbarus	1,883	639	33.94%	**Moore**	1,141	286	25.07%
Caldwell	1,146	382	33.33%	**Nash**	1,347	376	27.91%
Camden	133	31	23.31%	**New Hanover**	1,896	416	21.94%
Carteret	855	197	23.04%	**Northhampton**	290	87	30.00%
Caswell	330	45	13.64%	**Onslow**	1,522	509	33.44%
Catawba	2,234	304	13.61%	**Orange**	918	209	22.77%
Chatham	659	130	19.73%	**Pamlico**	187	53	28.34%
Cherokee	523	148	28.30%	**Pasquotank**	642	175	27.26%
Chowan	197	58	29.44%	**Pender**	778	246	31.62%
Clay	195	46	23.59%	**Perquimans**	166	29	17.47%
Cleveland	1,189	305	25.65%	**Person**	532	95	17.86%
Columbus	1,080	325	30.09%	**Pitt**	1,687	596	35.33%
Craven	1,091	435	39.87%	**Polk**	267	51	19.10%
Cumberland	3,325	706	21.23%	**Randolph**	2,020	479	23.71%
Currituck	237	48	20.25%	**Richmond**	864	258	29.86%
Dare	392	64	16.33%	**Robeson**	2,454	547	22.29%
Davidson	2,266	678	29.92%	**Rockingham**	1,257	165	13.13%
Davie	524	144	27.48%	**Rowan**	1,680	506	30.12%
Duplin	1,071	348	32.49%	**Rutherford**	925	253	27.35%
Durham	2,884	373	12.93%	**Sampson**	1,221	354	28.99%
Edgecombe	875	212	24.23%	**Scotland**	636	179	28.14%
Forsyth	3,936	1,161	29.50%	**Stanly**	804	176	21.89%

Franklin	930	181	19.46%	**Stokes**	609	109	17.90%
Gaston	2,372	529	22.30%	**Surry**	1,384	475	34.32%
Gates	149	38	25.50%	**Swain**	276	33	11.96%
Graham	232	65	28.02%	**Transylvania**	466	141	30.26%
Granville	706	228	32.29%	**Tyrell**	75	23	30.67%
Greene	371	108	29.11%	**Union**	2,057	453	22.02%
Guilford	4,418	312	7.06%	**Vance**	952	230	24.16%
Halifax	767	265	34.55%	**Wake**	7,259	1,198	16.50%
Harnett	1,580	382	24.18%	**Warren**	425	101	23.76%
Haywood	870	245	28.16%	**Washington**	249	72	28.92%
Henderson	1,444	380	26.32%	**Watauga**	476	144	30.25%
Hertford	324	78	24.07%	**Wayne**	1,948	644	33.06%
Hoke	585	184	31.45%	**Wilkes**	1,129	340	30.12%
Hyde	114	4	3.51%	**Wilson**	1,294	378	29.21%
Iredell	1,508	213	14.12%	**Yadkin**	550	117	21.27%
Jackson	520	118	22.69%	**Yancey**	403	120	29.78%
				TOTAL	**115,866**	**27,012**	**23.31%**

Source: North Carolina Division of Medical Assistance, North Carolina Health Choice office, July 17, 2007.

Appendix C
Key Informant Interviews—Brief Summary of Responses

OUTREACH AND ENROLLMENT INTO CCNC AND LINKAGE WITH PRIMARY CARE PROVIDERS

Perceived outcomes of the linkage with primary care providers process

- An estimated 35,000 of the 110,000 6- to 18- year old Health Choice children may have enrolled with a CCNC network, just during March and April, 2007.

Strategies used to facilitate linkage of children with CCNC primary care providers

- The North Carolina Division of Medical Assistance sent each HCC a list of children who were being transferred from Health Choice to CCNC Medicaid. These lists were to be used by HCCs when following up with families who needed well-child checks or other services.
- The North Carolina Division of Medical Assistance created a process by which primary care providers (practices) could sign up children who were already their patients by completing and faxing in an enrollment (linkage) form.
- North Carolina Medicaid enrollees are informed about the PCP/medical home concept through brochures.
- HCCs in some counties made telephone calls to patients to inform them about and encourage them to enroll with a CCNC primary care provider. Some followed up with letters and/or home visits.
- At least one network collaborated with other involved agencies (social services, health departments, health care providers) to link clients with PCPs.
- Some networks worked to educate the DSS caseworkers about CCNC.
- One network covered part of the DSS caseworker salaries to pay for the time that the caseworkers spent educating clients about the CCNC network.
- Some people involved in the linkage process reminded the practices of the $2.50 per member per month (PMPM) management fee as an incentive to assist with the linkage process.
- Some case managers went to clinics to encourage them to assist with the linkage process.

Perceived barriers to linking children with CCNC primary care providers

General process:

- There may be some reluctance to link clients with primary care providers because if a patient shows up at a different practice it may be time-consuming to switch the PCP assignment.
- Because the linkage process is part of the routine process of re-enrollment for 6- to 18- year olds, it may take up to 12 to 18 months to get children linked with PCPs.

DMA:

- The mailing to clients from DMA regarding the transition included too much information.

CCNC networks:

- Some CCNC networks may not be informed about the process of linking children with PCPs. Some networks may not understand the role of HCCs.

Department of Social Services:

- The county Departments of Social Services (DSS) caseworkers do not directly report to the North Carolina Division of Medical Assistance (NCDMA) and/or CCNC networks. This reduces their responsibility and accountability for linking eligible children with PCPs. In addition, the CCNC networks and NCDMA do not have authority to determine the messages delivered to eligible recipients and their parents about the medical home concept.
- Concern was expressed by several interviewees that some DSS caseworkers may believe they are advocating for Medicaid and Health Choice eligibles if they encourage them to "exempt out" of the CCNC primary care provider linkage. Some DSS case workers may believe that the "medical home" concept limits choices for patients, and may view the PCP as more of a gatekeeper than a care coordinator. Also, "exempting" a client out of managed care may be quicker for the case worker.
- DSS caseworkers may be overworked.
- The process of linking clients with PCPs is viewed as time-consuming and extra work by some. So, it is believed that some DSS caseworkers just wait for eligibility to expire rather than link clients with PCPs.
- CCNC needs to get DSS supervisors to "buy into" the CCNC managed care concept. The supervisors need to understand the program, its benefit for patients, and the potential benefits for the budget. Then perhaps supervisors could build linkage goals into employee evaluations.
- There may be a lack of sufficient training of DSS caseworkers regarding CCNC and the process of linking clients with PCS. Some networks do this, yet this was considered a deficit.

Health Check Coordinators:

- The HCCs often do not have current contact information for clients and need to request this from the local CCNC network (from CMIS).
- The role of HCCs in the process of linking 6- to 18- year olds with PCPs is not clear. Some believe that HCCs are not responsible for working with Health Choice children. However, this seems to contradict the HCC job description, which mentions Health Choice in many sections. This issue needs to be clarified.
- HCCs have other roles and priorities.

Primary care practices:

- There may have been a lack of practice-level education about the 6- to 18- year old linkage with CCNC primary care providers.
- Physicians' offices are generally overwhelmed with paperwork; so, another form to complete to assist with the PCP linkage process may not be welcome. Some practices may not believe it is their responsibility to "enroll people in a health insurance program."

Medicaid and Health Choice recipients:

- Patients may not understand what a medical home is and what the benefits of having one are.
- Some parents/patients don't understand that it is important for a primary care physician to know what is going on medically with them (if care occurs with multiple providers).

Information systems:

- Information systems are problematic. Different people involved in the process of working with Medicaid clients see different information and systems. DSS has real-time data, yet others who work with clients are not able to access the same real-time data.

- Privacy issues may affect which information is available to which agencies involved with the clients.
- Information systems often don't talk with each other.
- The 6- to 18- year old Health Choice children are in a Title 21 program, so access to data is limited, making it difficult to target enrollment/linkage.

Recommendations:

- Establish a more direct reporting relationship between the county Departments of Social Services and CCNC so that the roles and responsibilities of DSS caseworkers in the linkage process are more targeted and deliberate.
- Separate the linkage process from eligibility determination and provide more opportunities to educate patients/parents. Provide patients/parents with the opportunity to make a more informed decision.
- Re-create the DSS managed care positions.
- Make the exemption process more onerous so that it is not easier to exempt a client than to link a child with a PCP.
- Automatically enroll clients with CCNC networks and require action to disenroll them from the managed care program. Now, disenrollment or exemption is the default for disabled children and foster children. This should be changed.
- The switch from Health Choice to Medicaid (CCNC) needs to occur at the state level rather than the county level, given that the state has the information about the clients.
- Work more closely with the school systems; they identify children at 200 percent FPL to enroll them in the free lunch program. Perhaps they could assist with Health Choice enrollment.

Tracking system at the state or county level to monitor who has and has not been linked with a primary care provider, and to facilitate the linkage process.

- There is not a tracking system to monitor the linkage of children with primary care providers; frequencies are computed.
- Different information systems have different information (e.g., contact information); so, employees need to work between several sources of data to obtain what is needed.
- CMIS: some HCCs want access to this database.
- AINS: does not have a good mechanism for documenting notes or comments, and runs a month behind SEIS (the DSS enrollment database). AINS may contain out-of-date phone numbers.
- Creating a link between AINS and SEIS was suggested.
- It is difficult to obtain information about the Health Choice children. Medicaid "pre-populates" CMIS with claims data, but they don't have this data for Health Choice children.

UTILIZATION OF PRIMARY CARE PROVIDERS FOR ROUTINE WELL-CHILD AND PREVENTIVE VISITS

Strategies used by the North Carolina CCNC Medicaid program to facilitate patient use of primary care, well-child services, and preventive services

- The focus of CCNC is on chronic disease, so preventing complications of chronic disease is a main focus. Others mentioned that the networks are "disease-based" and that they do disease management.
- Some working groups are looking at strategies to promote more patient education in the eligibility process.
- One HCC does queries of the AINS system and contacts patients who need follow-up by telephone or letter.
- One HCC also does follow-up for the CCNC emergency department (ED) utilization initiative, calling patients who have been seen in the ED to encourage follow-up with the PCP.
- One network indicated that they do not focus on preventive services.
- One network collaborates with the local health department.
- Some HCCs work with the networks to help get children in for well-child visits if they miss their appointments.
- The involvement of case managers in the CCNC networks is viewed as making the networks more humane and nurturing. This is felt to encourage patients to participate in the program.
- One HCC indicated that it is her role to educate the patients on how to navigate the system.
- One network offers some educational programs through local clinics.

Strategies to facilitate well-child and prevention efforts

- DSS caseworkers and HCCs should develop collaborative strategies.
- Coverage should be increased for a nutritionist's time.

ACCESS TO CARE AND PROVIDER REIMBURSEMENT

Provider (physician) participation in Medicaid

- There are perceived to be adequate numbers of providers for the pediatric population. It is believed that before Carolina ACCESS there were problems with provider participation, but now most providers are accepting Medicaid patients and have dropped limits on the number of Medicaid patients they care for. There may be a few geographic areas with little access.
- Low reimbursement levels are viewed to be a problem, yet some providers believe that if they care for pediatric patients they are likely to see Medicaid patients.

Provider (physician) participation in Health Choice

- There do not seem to be provider participation problems with Health Choice.
- At the same time that DMA changed the CCNC enrollment for 0- to 5- year olds (January 1, 2006), the provider reimbursement rates for Health Choice were decreased, initially to 115 percent of Medicaid, and 6 months later to the level of Medicaid rates. There has not been sufficient time to see if this has had a negative effect of provider participation.

Dental participation in Medicaid and Health Choice

- Access to dental providers is viewed as a major problem. One respondent indicated that the dental resources are poor to none in one county, and most dentists see none to a few Medicaid or Health Choice patients.
- Primary care physicians are allowed to perform dental varnishes in North Carolina because of the dental access issues.
- Advocacy for improved dental reimbursement is ongoing. Reimbursement levels are up to about 60 percent of usual and customary charges. It is generally agreed that 65 to 70 percent of usual and customary charges covers the dentists' costs.
- One respondent felt that at least $60 per hour is needed just to support the 4 full time equivalent support staff that are needed in a dentist's office. And, the only way general dentists earn a living is by doing procedures such as fillings.
- Reimbursement is the major driver of participation. There may also be misconceptions of Medicaid patients.
- In eastern North Carolina the Division of Public Health is piloting a program that creates a "dental home" for patients similar to a medical home.
- It is felt that there aren't enough dentists to participate.
- A dental school is trying to train pediatricians to screen patients to help alleviate access problems.
- There may be perceptions that the younger children have behavior management problems.
- There may be concerns that Medicaid families may have a lot of family members in the waiting rooms.
- One recommendation was to create Medicaid dental clinics where dentists periodically volunteer for a half day rather than try to incorporate Medicaid patients into existing practices.
- It was felt that dental students can complete dental training with minimal care for pediatric patients.
- There have been reports that dentists will no longer be willing to see Health Choice patients now that the reimbursement rates for them match Medicaid rates.

NORTH CAROLINA'S EMERGING HYBRID SYSTEM OF FINANCING CARE FOR LOW-INCOME CHILDREN

Implications for patients/enrollees and providers

- Example: a blended family had one child in Medicaid, one child enrolled in Health Choice, and a third child with no health insurance because the third child is a biological child of both parents in the blended family.
- Some patients prefer Health Choice because of the Medicaid stigma; in Health Choice the patients receive a regular insurance card instead of the bigger Medicaid card.
- Example: if one family member is enrolled in Medicaid and another family member is enrolled in Health Choice, the HCC answers questions pertaining to Medicaid but refers the family to the DSS caseworker to answer questions about Health Choice.
- Example of communication challenges: if an HCC has a patient with a question about Health Choice, the HCC has to call the same customer service line as others; and, the Blue Cross Blue Shield staff may not want to talk with the HCC, only with the client or parent.

- It is believed that physician choice is better in Health Choice, so families with children enrolled in both programs may see different health care providers.
- Some parents don't understand the difference between Health Choice and Medicaid. Some prefer Health Choice because of greater provider choices and the lack of limits on referrals. Some families may prefer Medicaid because of more extension coverage and no copayments.
- Families may have a hard time understanding why one child qualifies for some benefits and another child in the same family does not qualify for the same set of benefits.
- The multiplicity of program names makes it difficult for people to understand the programs (CCNC, individual network names, Carolina ACCESS, etc.). The confusion may also make it hard for DSS caseworkers to sell the program.

Appendix D
HEDIS Measures: North Carolina Medicaid, North Carolina Health Choice, and National Benchmarks

D-1. HEDIS Measures of Children's Access to Primary Care Providers: Comparisons Between North Carolina Medicaid, Health Choice, and National Benchmarks [% of children with visit to PCP during the measurement year]

HEDIS Indicator	Year	CA II	CA I	NC Medicaid HMO	NC Fee-for-service Medicaid	Total NC Medicaid	NC Health Choice	2006 Medicaid HEDIS 90th percentile	HEDIS Mean (national)
12 to 24 Months	CY 2005	96.9%	98.6%	96.3%	96.5%	96.9%	95.6%	98.2%	92.0%
	CY 2004	96.5%	98.2%	85.5%	95.2%	96.2%	96.4%		92.0%
	CY 2003	95.9%	97.6%	94.7%	95.0%	95.9%	95.8%		90.9%
25 Months to 6 Years	CY 2005	88.5%	92.0%	75.9%	86.4%	88.0%	90.1%	91.5%	81.6%
	CY 2004	87.5%	90.2%	64.9%	84.4%	86.8%	88.7%		81.5%
	CY 2003	87.4%	88.5%	73.3%	85.0%	86.6%	90.9%		79.9%
7–11 Years	CY 2005	84.7%	88.5%	62.6%	83.7%	84.4%	90.3%	92.0%	82.5%
	CY 2004	84.8%	85.4%	65.8%	83.0%	83.9%	90.5%		81.7%
	CY 2003	86.3%	82.8%	68.6%	80.2%	82.5%	89.9%		80.2%
12–19 Years	CY 2005	82.0%	85.3%	62.7%	81.9%	84.4%	85.7%	90.2%	79.1%
	CY 2004	82.4%	83.0%	65.5%	81.7%	83.9%	85.8%		Not available
	CY 2003						85.4%		

D-2. HEDIS Measures of Well Child Visits in the First 15 Months of Life: Comparisons Between North Carolina Medicaid, Health Choice, and National Benchmarks

HEDIS Indicator	Year	CA II	CA I	NC Medicaid HMO	NC Fee-for-service Medicaid	Total NC Medicaid	NC Health Choice	2006 Medicaid HEDIS 90th percentile	HEDIS Mean (national)
No Visits	CY 2005	2.2%	0.9%	3.7%	3.0%	2.5%	8.0%		6.2%
	CY 2004	2.1%	0.8%	9.0%	3.6%	2.7%	0.0%		6.4%
	CY 2003	3.6%	1.6%	4.1%	4.5%	3.6%	9.3%		6.9%
One Visit	CY 2005	1.9%	1.4%	6.8%	3.3%	2.5%	0.0%		4.2%
	CY 2004	2.0%	1.4%	10.9%	3.7%	2/8%	0.0%		4.0%
	CY 2003	1.4%	2.2%	10.3%	4.1%	3.0%	0.0%		5.0%
Two Visits	CY 2005	2.2%	1.7%	14.1%	4.8%	3.4%	4.0%		5.1%
	CY 2004	2.2%	2.5%	13.2%	5.0%	3.7%	0.0%		5.2%
	CY 2003	2.3%	3.5%	14.4%	5.5%	4.2%	3.1%		6.1%
Three Visits	CY 2005	4.1%	4.7%	12.0%	7.6%	5.8%	6.0%		7.9%
	CY 2004	3.9%	5.0%	22.6%	8.3%	6.4%	12.5%		8.1%
	CY 2003	4.4%	5.9%	24.6%	9.0%	7.1%	3.1%		8.3%
Four Visits	CY 2005	8.1%	9.1%	23.0%	12.7%	10.3%	18.0%		12.9%
	CY 2004	8.1%	9.8%	25.5%	12.9%	10.8%	20.8%		13.0%

	CY 2003	9.6%	11.5%	28.2%	14.7%	12.6%	25.0%		12.8%
Five Visits	CY 2005	18.7%	22.0%	17.8%	19.9%	19.5%	24.0%		18.7%
	CY 2004	18.9%	19.7%	12.7%	20.2%	19.6%	33.3%		18.8%
	CY 2003	22.5%	21.8%	13.9%	21.7%	21.9%	37.5%		18.6%
Six or More Visits	CY 2005	62.8%	60.3%	22.5%	48.6%	56.0%	39.0%	68.6%	45.0%
	CY 2004	62.8%	60.8%	6.3%	46.3%	54.0%	33.3%		44.5%
	CY 2003	56.2%	53.5%	4.6%	40.5%	47.7%	21.9%		42.3%

Sources: [24] North Carolina Division of Medical Assistance, "Quality, Evaluation, and Health Outcomes (QEHO) Initiatives," http://www.dhhs.state.nc.us/dma/ca/qehoinitiatives.html.

[23] Draft 2006 North Carolina Health Choice Annual Report, Framework for the Annual Report of the State Children's Health Insurance Plans Under Title XXI of the Social Security Act (NCDMA)," July 17, 2007.

[16] National Committee for Quality Assurance, "Medicaid HEDIS 2006 Means, Percentiles and Ratios," http://web.ncqa.org/Portals/0/HEDISQM/Programs/CompAud/MPR/HEDIS_2006_Means_Percentiles_Medicaid.pdf (accessed July 27, 2007).

D-3. HEDIS Measures of Well Child Visits in Early Childhood and Adolescence: Comparisons Between North Carolina Medicaid, Health Choice, and National Benchmarks

HEDIS Indicator	Year	CA II	CA I	NC Medicaid HMO	NC Fee-for-service Medicaid	Total NC Medicaid	NC Health Choice	2006 Medicaid HEDIS 90th percentile	HEDIS Mean (national)
Well-Child Visits in the 3rd–6th Year of Life	CY 2005	63.3%	61.3%	51.8%	58.2%	61.4%	58.2%	77.5%	62.0%
	CY 2004	61.7%	62.3%	37.3%	56.5%	60.0%	56.7%		59.9%
	CY 2003	61.2%	59.1%	44.9%	55.5%	58.3%	54.8%		58.1%
Adolescent Well-Care Visits Ages 12–19 Years	CY 2005	32.2%	30.8%	24.8%	30.3%	31.3%		54.5%	39.3%
	CY 2004	31.9%	30.2%	19.1%	30.2%	30.9%			37.9%
	CY 2003	30.0%	26.2%	24.0%	26.2%	27.3%			36.7%

Sources: [24] North Carolina Division of Medical Assistance, "Quality, Evaluation, and Health Outcomes (QEHO) Initiatives," http://www.dhhs.state.nc.us/dma/ca/qehoinitiatives.html.
[23] "Draft 2006 North Carolina Health Choice Annual Report, Framework for the Annual Report of the State Children's Health Insurance Plans Under Title XXI of the Social Security Act (NCDMA)," July 17, 2007.
[16] National Committee for Quality Assurance, "Medicaid HEDIS 2006 Means, Percentiles and Ratios," http://web.ncqa.org/Portals/0/HEDISQM/Programs/CompAud/MPR/HEDIS_2006_Means_Percentiles_Medicaid.pdf (accessed July 27, 2007).

D-4. Comparisons of HEDIS Immunization Measures Between North Carolina Medicaid, Health Choice, and National Benchmarks

HEDIS Indicator	Year	CA II	CA I	NC Medicaid HMO	NC Fee-for-service Medicaid	Total NC Medicaid	NC Health Choice	2006 Medicaid HEDIS 90th percentile	HEDIS Mean (national)
Child Immunization Rate I	CY 2004	58.3%	64.3%	35.7%	55.0%	57.9%			61.2%
	CY 2003	61.9%	65.5%	45.6%	55.2%	60.2%			57.2%
Child Immunization Rate II	CY 2004	56.6%	61.6%	33.8%	52.9%	55.9%		82.7%	57.8%
	CY 2003	58.5%	59.8%	42.5%	50.9%	55.8%			52.7%
Adolescent Immunization Combination I	CY 2004	21.3%	25.1%	8.9%	19.6%	21.3%			51.9%
	CY 2003	22.6%	26.3%	8.3%	19.4%	22.6%			42.4%
Adolescent Immunization Combination II	CY 2004	1.9%	2.0%	1.0%	1.5%	1.7%		69.8%	33.9%
	CY 2003	1.3%	1.3%	1.3%	1.2%	1.3%			24.4%

Sources: [24] North Carolina Division of Medical Assistance, "Quality, Evaluation, and Health Outcomes (QEHO) Initiatives," http://www.dhhs.state.nc.us/dma/ca/qehoinitiatives.html.
[23] "Draft 2006 North Carolina Health Choice Annual Report, Framework for the Annual Report of the State Children's Health Insurance Plans Under Title XXI of the Social Security Act (NCDMA)," July 17, 2007.
[16] National Committee for Quality Assurance, "Medicaid HEDIS 2006 Means, Percentiles and Ratios," http://web.ncqa.org/Portals/0/HEDISQM/Programs/CompAud/MPR/HEDIS_2006_Means_Percentiles_Medicaid.pdf (accessed July 27, 2007).

Appendix E

2006 North Carolina Selected Child Health Assessment and Monitoring Program (CHAMP) Survey Results for Children

Health Status, Health Behavior, or Access to Care Measure	North Carolina %	NC Medicaid %	Health Choice %
Weight Status: Percent of children who are at risk for overweight (85th–94th percentile) or overweight (95th percentile or greater)		30.7%	33.7%
< 5 years of age	22.1%		
5–10 years of age	29.2%		
11–13 years of age	31.7%		
14–17 years of age	27.2%		
Parent Reaction to Child Weight: Are you trying to encourage more physical activity time or limit TV/video/computer game time? (Response options: Yes (both); Yes, more physical activity; Yes, limit TV or video time; Neither)		Neither: 28.0%	Neither: 37.0%
<5 years of age (response = neither)	44.4%		
5 through 10 years of age (response = neither)	29.8%		
11 through 13 years of age (response = neither)	32.4%		
14 through 17 years of age (response = neither)	39.8%		
Tobacco: "To your knowledge, does (child) currently smoke cigarettes?"		32.7%	17.6%*
5 through10 years of age	7.4%		
11 through 13 years of age	16.2%		
14 through 17 years of age	30.4%		
Sun Safety: On a sunny summer day, when (child) is outside for more than 15 minutes between 10 am and 4 pm, how often does he/she use sunscreen with a Sun Protective Factor or SPF of 15 or more? (Response options: Always; Nearly always; Sometimes; Seldom; Never)		Seldom or Never: 53.8%	Seldom or Never: 36.8%
5 through 10 years (response = seldom or never)	26.1%		
11 through 13 years (response = seldom or never)	37.1%		
14 through 17 years (response = seldom or never)	43.7%		
Child Safety and Injury: How many times in the past month was (child) injured so that he/she could not participate in his/her usual activities for at least one day? (5–10 years of age)		(all ages)	(all ages)

Not in the past month 1–5 times 6–20 times More than 20 times	93.8% 6.0% 0.2% 0.0%	94.0% 5.7% 0.3% 0.1%	92.6% 5.3% 0.0% 2.0%
Child Safety and Injury: How many times in the past month was (child) injured so that he/she could not participate in his/her usual activities for at least one day? (11–13 years of age) Not in the past month 1–5 times 6–20 times More than 20 times	 87.9% 11.2% 0.3% 0.5%	See above	See above
Child Safety and Injury: How many times in the past month was (child) injured so that he/she could not participate in his/her usual activities for at least one day? (11–13 years of age) Not in the past month 1–5 times 6–20 times More than 20 times	 90.3% 8.9% 0.2% 0.6%	See above	See above
School Performance (Absenteeism): During the past 12 months, about how many days did (child) miss school because of illness or injury? (response options: No days; Less than 1 week; 1 to 2 weeks; 2 to 3 weeks; 3 or more weeks) 5 through 10 years of age (2 to 3 weeks, or 3 or more weeks) 11 through 13 years of age (2 to 3 weeks, or 3 or more weeks) 14 through 17 years of age (2 to 3 weeks, or 3 or more weeks)	 10.8% 12.5% 11.8%	2 weeks or more: 13.7%	2 weeks or more: 16.8%
Oral Health: Does (child) have a dentist or dental clinic where he/she goes toregularly? No, < 5 years of age No, 5 through 11 years of age No, 11 through 13 years of age No, 14 through 17 years of age	 56.3% 15.1% 13.7% 9.8%	No: 32.1%	No: 16.5%

*small number of respondents.

Source: [29] North Carolina State Center for Health Statistics, "Child Health Assessment and Monitoring Program," http://www.schs.state.nc.us/SCHS/champ/index.html (accessed July 23, 2007).