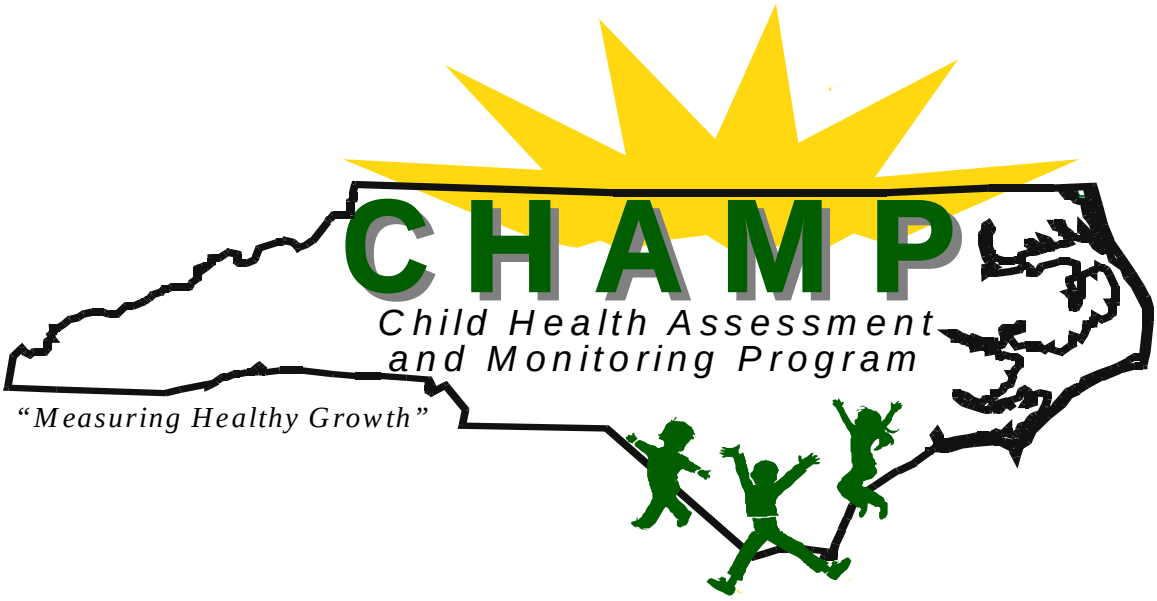

Children with Special Health Care Needs: 2006-2007

A Report from the North Carolina Child Health Assessment and Monitoring Program

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One of the primary goals of the Children and Youth Branch is to promote the health of Children and Youth with Special Health Care Needs (CYSHCN). The Branch has always searched for new and meaningful ways to advance the health of CYSHCN, such as creating the Office on Disability and Health, providing full time staff to work on access to care issues, developing a Family Council for CYSHCN and managing a transition project for adolescents. Our efforts are perpetually presented with many challenges including limited resources and a lack of public awareness and data. These two challenges, in specific, creates an environment in which children and youth with special health care needs may, at times, be overlooked by health agencies when developing policy, programs and services to improve the health of children and youth.

This data report provides the most comprehensive description of the lives and needs of this important group of children in NC available to date. Using state-wide representative data collected as part of the NC CHAMP survey, we more clearly see many of the health disparities present in the lives of children and youth with special health care needs.

This report is a wonderful opportunity to communicate the comprehensive needs of these young people and their families. It provides an important baseline upon which we can build. In the future, we will collect more information about CYSHCN annually, and will work with the State Center for Health Statistics, Chronic Disease Branch, to produce annual data summaries and reports.

In partnership with our NC Family Council for CYSHCN please join us in celebrating this report.

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Children and Youth Branch
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Introduction

Approximately half a million families in North Carolina are caring for a child with special health care needs. Children with special health care needs (CSHCN) include children with chronic physical, developmental, behavioral or emotional conditions who may also require health and related services of a type or amount beyond what is usual for most children of the same age. CSHCN have been found to differ from other children on multiple aspects of health and well-being from birth to early childhood through adolescence. Compared to other children, CSHCN are more likely to have been born premature and with a low birth weight. During early childhood, parents of CSHCN are two to three times more likely to report concerns about developmental behaviors, such as concerns regarding their child's speech, fine and gross motor skills, and social interactions. CSHCN may not perform as well as their peers in school and are more likely to have to repeat a grade. Although CSHCN are more likely than non-CSHCN to have health insurance, they are less likely to receive all the medical care needed. Caring for a SHCN child can also contribute to financial burdens for the family that may lead to other economic difficulties, such as food insecurity and delays in medical care.

This report focuses on comparisons between CSHCN and non-CSHCN for a variety of health related behaviors. Assessment of the health characteristics of children is essential in order to identify and monitor health issues that will lead to better understanding and guidance in the improvement of child health. Moreover, by examining these health characteristics in relation to school performance, opportunities to improve child education also become more apparent.

The North Carolina Child Health Assessment and Monitoring Program (CHAMP) is a surveillance system that collects information about the health characteristics of children and adolescents from birth to age 17 in North Carolina. By collecting data on children, CHAMP contributes to a seamless health data system for all North Carolina citizens from birth to old age. Eligible children for the CHAMP survey are drawn each month from the North Carolina Behavioral Risk Factor Surveillance System (BRFSS) telephone survey of adults, ages 18 and older. All adult respondents with children living in their households are invited to participate in the CHAMP survey. One child is randomly selected from the household, and the adult most knowledgeable about the health of the selected child is interviewed in a follow-up survey. Questions on the CHAMP survey pertain to a wide range of health-related topics. This 2006-2007 report on the health of CSHCN covers the following topics: heath care access and utilization, health status, birth characteristics, early childhood development, school performance, food insecurity, and child discipline.

Procedures

Data Collection

The North Carolina Child Health Assessment and Monitoring Program (NC CHAMP) is a surveillance system that collects information about the health characteristics of children and adolescents from birth to age 17 in the state of North Carolina. NC CHAMP operates through the State Center for Health Statistics' (SCHS) Survey Center, Division of Public Health, North Carolina Department of Health and Human Services (www.schs.state.nc.us/SCHS). NC CHAMP is a follow-up survey of North Carolina Behavioral Risk Factor Surveillance System (NC BRFSS) households with children.

The North Carolina Behavioral Risk Factor Surveillance System (BRFSS) is a federally supported annual survey that assesses health characteristics of non-institutionalized adults age 18 and older. This telephone survey operates through the SCHS Survey Center and utilizes a random-digit-dial (RDD) computer-assisted-telephone-interviewing (CATI) system. Land-line telephone numbers are generated from a computer in groups of 100 consecutive phone numbers that contain at least one published household telephone number. The telephone number groups are then assigned to two strata: (1) high-density or listed numbers, and (2) low-density or unlisted numbers. The listed numbers are sampled at a higher rate than unlisted numbers in an effort to lower cost and improve interviewer efficiency.

During the BRFSS interview, the respondent is asked if there are any children 17 and younger living in the household. If more than one child is living in the household, one child is randomly selected through a pre-programmed process in the CATI data entry system used by each interviewer. Respondents are asked to report the age and sex of the selected child. Respondents are then asked if they are willing to participate in a call-back survey that asks additional questions about the health of the selected child. The respondent is reassured that all information will be kept confidential. If they agree to participate in the call-back survey, they are asked to identify the one person that is most knowledgeable about the health of the child. The NC CHAMP call is made approximately two weeks after the BRFSS interview. The NC CHAMP interviewer speaks to an adult who was identified in the BRFSS household as the most knowledgeable about the randomly selected child's health.

NC CHAMP 2006 and 2007

The purpose of the NC CHAMP survey is to measure the health characteristics of North Carolina children, ages 0 to 17. The survey measures a wide variety of health-related topics affecting children and parents and is revised each year to meet the child health surveillance needs of North Carolina. Annual surveys are available at: www.schs.state.nc.us/SCHS/champ/questions.html. The NC CHAMP 2006 survey includes 162 items assessing 26 health topics. The NC CHAMP 2007 survey includes 117 items assessing 21 health topics. Although a Children with Special Health Care Needs (CSHCN) module is included every year, the number and type of survey

questions varies from year to year. To date, the 14 questions used to define CSHCN based on five screening criteria (need for or use of prescription medications; elevated need for or use of medical, mental health, or educational services; functional limitations; special therapy; and treatment or counseling for an emotional, developmental or behavioral problem) have only been included in the NC CHAMP 2006 and 2007 surveys. The present report thus only includes data collected using the 2006 and 2007 questionnaires. NC CHAMP 2010 and 2011 surveys intend to include the 14 questions used to define CSHCN in order to further examine this population in the future.

Table 1 presents the unweighted number of respondents, the unweighted percent of respondents, and the weighted percent of respondents by selected demographic characteristics for the 2006 and 2007 NC CHAMP surveys.

Table 1. NC CHAMP Survey Sample by Sex, Age, and Race/Ethnicity, 2006-2007

	Unweighted N	Unweighted %	Weighted %
Total	5850	100%	100%
Sex			
Male	2993	51.2%	51.5%
Female	2857	48.8%	48.5%
Age			
0-5 years	1816	31.0%	33.6%
6-11 years	1791	30.6%	33.2%
12-17 years	2243	38.3%	33.2%
Race/Ethnicity			
White non-Hispanic	3948	67.5%	62.9%
African American non-Hispanic	898	15.4%	22.6%
Hispanic	602	10.3%	8.8%
Other	402	6.9%	5.6%

Data Weighting and Analysis

NC CHAMP data are weighted to reflect the North Carolina state census (available at www.census.gov/popest/estimates). The use of weighted data adjusts the results of the sample to better represent the entire population of North Carolina. Adjustments are made to account for the unequal probabilities of selection due to the disproportionate sampling method and due to people living in households with different numbers of residential telephone numbers and different numbers of children in the home, as well as unequal non-response rates among different demographic groups.

Given the complex nature of the NC CHAMP sample (i.e. it is not a simple random sample), SAS procedures for survey data were used to calculate the confidence intervals for the estimates. These procedures take the complex sampling design into account when computing the errors of the estimates. In general, any percentage with a cell size of less than 50 will have a relatively large degree of sampling error and should be considered cautiously. Statistically significant

differences between CSHCN and non-CSHCN are indicated by corresponding p-values, but do take into account differences in demographic characteristics (i.e. reported p-values do not control for sex, age, race, ethnicity, or household federal poverty level).

Respondents who answered that they did not know or who refused to answer a survey question were not included in the calculation of the percentages. Therefore, the sample sizes used to calculate the estimates in this report vary. Also take note that although the majority of questions were included on both 2006 and 2007 surveys, there are some survey questions that were only included on either the 2006 or 2007 questionnaire. Those items that were only included on one survey year are indicated in a footnote with corresponding samples sizes for that item. In addition, some survey items were only asked of certain ages (e.g. school skills were only asked about children ages 5 years and older), and are thus indicated in appropriate footnotes with corresponding samples sizes for that item by age group.

Strengths and Limitations

One potential limitation of the NC CHAMP survey is due to the fact that the data are reported by proxy (94% of surveys are completed by a parent; 6% by another adult). NC CHAMP data are based on subjective parental perception of the child's health characteristics. Research suggests that parental respondents may not accurately report health risk behaviors involving their children, especially those that are illegal or socially undesirable. Inconsistency in how well parents judge child health, possibly depending on cultural and socioeconomic variables, is a limiting factor in this study. In addition, in certain cases, parents may not be aware of the health risk behaviors of their children – especially teenagers.

Another limitation is one common to all telephone surveys—the pool of respondents is limited to only those who have a land-line telephone, leading to a lack of coverage of people who live in households without a land-line telephone. As a result, even though the telephone numbers are randomly selected and the data is weighted to represent the statewide population of children, there are some limits to how well results may generalize to other populations. Households without a land-line telephone are, on average, of lower income. Therefore, for many of the health risks measured, the results are likely to understate the true level of risk in the total population of children in North Carolina.

On the other hand, there are some significant advantages of the telephone survey methodology, including better quality control over data collection made possible by a CATI system, relative low cost, and speed of data collection. The content of the survey questions, questionnaire design, data collection procedures, interviewing techniques and editing procedures have been carefully developed to improve data quality and reduce the potential for bias. The data collection is ongoing, and each year new annual results become available.

The survey results presented here are purely descriptive. It is not possible to infer causes of the observed differences from the information presented in this report.

For more information, please visit www.schs.state.nc.us/SCHS/champ or contact the NC CHAMP Survey Coordinator at (919) 855-4494 or CHAMPstaff@dhhs.nc.gov.

Children with Special Health Care Needs (CSHCN)

The Maternal and Child Health Bureau (MCHB) defines children with special healthcare needs as "those who have or are at increased risk for chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally." (mchb.hrsa.gov)

The NC CHAMP 2006-2007 CSHCN module asks respondents whether a child currently experiences any of five different health consequences:

- need for or use of prescription medications;
- elevated need for or use of medical, mental health, or educational services;
- functional limitations;
- special therapy, such as physical, occupational, or speech therapy;
- treatment or counseling for an emotional, developmental or behavioral problem.

Respondents with children who currently experience any of these five health consequences are then asked whether that specific health consequence is due to a medical, behavioral, or other health condition that has lasted or is expected to last for at least 12 months. A child must have affirmative responses on all 3 parts (or 2 parts in the case of screening question for the ongoing emotional, developmental, or behavioral conditions criteria) of a screening question in order to qualify on that particular screening criteria.

CSHCN Screener Qualifying Categories

Prevalence rates for the five CSHCN screener categories for the total NC CHAMP 2006-2007 sample are presented in Table 2 and Figure 1.

- 19.6% report use of prescription medication due to a medical, behavioral, or other health condition that has lasted or is expected to last for at least 12 months.

- 9.1% report an elevated need for or use of medical, mental health, or educational services due to a medical, behavioral, or other health condition that has lasted or is expected to last for at least 12 months.

- 5.2% of the total sample reported a functional limitation. A child is identified as having a functional limitation if the child is limited or prevented in some way in their ability to do what most children the same age are able to do and that their limitation is due to a medical, behavioral, or other health condition that has lasted or is expected to last for at least 12 months.

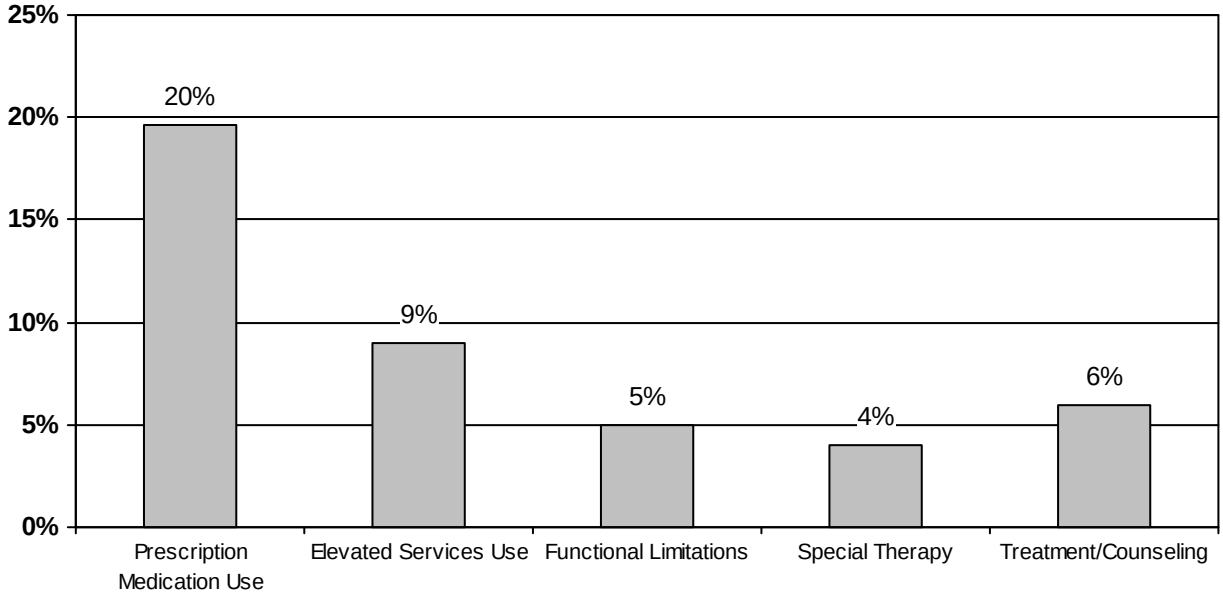
- 3.9% receive special therapy (such as physical, occupational, or speech therapy) due to a medical, behavioral, or other health condition that has lasted or is expected to last for at least 12 months.

- 6.3% receive treatment or counseling for an emotional, developmental or behavioral problem that has lasted or is expected to last for at least 12 months. Treatment or counseling includes remedies, therapy, or guidance a child may receive for an emotional problem (such as depression or schizophrenia), developmental problem (such as stunted growth), or behavioral problem (such as aggressive behavior or Attention Deficit Disorder).

Table 2. CSHCN Screener Qualifying Categories for Total Sample, 2006-2007

Screening Item	N	Weighted %	95% CI
Prescription medication use	1153	19.6%	18.3, 20.9
Elevated need for medical, mental health, or educational services	504	9.1%	8.1, 10.0
Functional Limitations	285	5.2%	4.4, 5.8
Special Therapy	197	3.9%	3.2, 4.6
Treatment or Counseling	372	6.3%	5.5, 7.1

Figure 1. Prevalence Rates for CSHCN Screener Qualifying Categories for NC CHAMP Total Sample, 2006-2007



CSHCN Screener Qualifying Mutually Exclusive Categories

Responses from the CSHCN screener questions have been categorized in order to determine a measure of special needs type based on four mutually exclusive groups. Table 3 and Figure 2 present prevalence rates for the four CSHCN screener mutually exclusive categories for NC CHAMP 2006-2007 sample compared to the National Survey of Children's Health (NSCH) 2007 rates for the United States (US) and North Carolina (NC). The four mutually exclusive groups include:

A. Prescription medication use (only): This group has chronic health conditions that are managed primarily through prescription medication.

    - 10.9% of the NC CHAMP sample report prescription medication use without elevated need for services or functional limitations, compared to the NSCH rate for North Carolina of 8.7% and national rate of 7.6%.

B. Elevated need for services (only): This group qualifies as CSHCN on one or more of the three screening criteria addressing elevated need or use of specialized services or therapies (e.g. pediatric specialist care; early intervention; mental health care; developmental disabilities; special education; physical, occupational or speech therapies).

    - 3.2% of the NC CHAMP sample report elevated need for services without prescription medication use or functional limitations, compared to the NSCH rate for North Carolina of 2.6% and national rate of 3.0%.

C. Prescription medication use AND elevated need for services: This group has health needs that require both medication management and specialized services or therapies and qualify as CSHCN based on one or more of the three screening criteria addressing elevated service use AND on the prescription medication screening criteria.

    - 5.5% of the NC CHAMP sample report prescription medication use in concurrence with elevated need for services without functional limitations, compared to the NSCH rate for North Carolina of 5.1% and national rate of 4.3%.

D. Functional limitations: This group qualifies as CSHCN on the functional limitations criteria, almost always in concurrence with one or more other screening criteria.

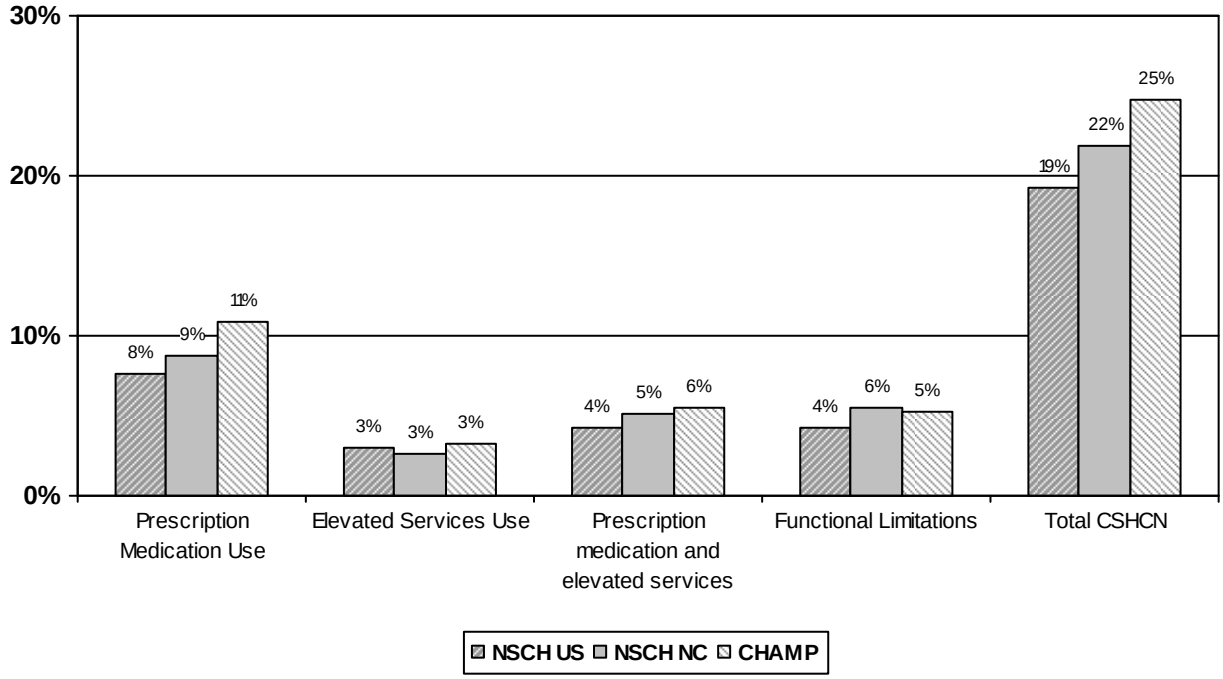
    - 5.2% of the NC CHAMP sample report functional limitations, compared to the NSCH North Carolina rate of 5.5% and national rate of 4.3%.

Table 3. CSHCN Screener Qualifying Mutually Exclusive Categories

	NSCH[1] US			NSCH[1] NC			NC CHAMP 2006-2007		
Screening Category	**N**	**%**	**95% CI**	**N**	**%**	**95% CI**	**N**	**%**	**95% CI**
Prescription medication use	7,571	7.6%	7.3, 7.9	171	8.7%	7.2, 10.2	654	10.9%	9.9, 11.9
Elevated services use	2,609	3.0%	2.7, 3.2	36	2.6%	1.4, 4.3	175	3.2%	2.6, 3.8
Prescription medication use/elevated services use	4,269	4.3%	4.0, 4.5	90	5.1%	3.3, 6.5	303	5.5%	4.7, 6.2
Functional limitations	3,903	4.3%	4.0, 4.6	97	5.5%	4.2, 6.8	285	5.2%	4.4, 6.0
Total CSHCN	*18,352*	*19.2%*	*18.5, 19.8*	*394*	*21.9%*	*19.2, 24.6*	*1417*	*24.8%*	*23.4, 26.2*

Note: Percentages are weighted to population characteristics.
[1]National Survey of Children's Health 2007 prevalence rates for the United States (US) and North Carolina (NC) available at www.nschdata.org.

Figure 2. Prevalence Rates for CSHCN Screener Qualifying Mutually Exclusive Categories for 2007 NSCH (National and North Carolina State Rates) and 2006-2007 CHAMP.



Prevalence of Children with Special Health Care Needs (CSHCN)

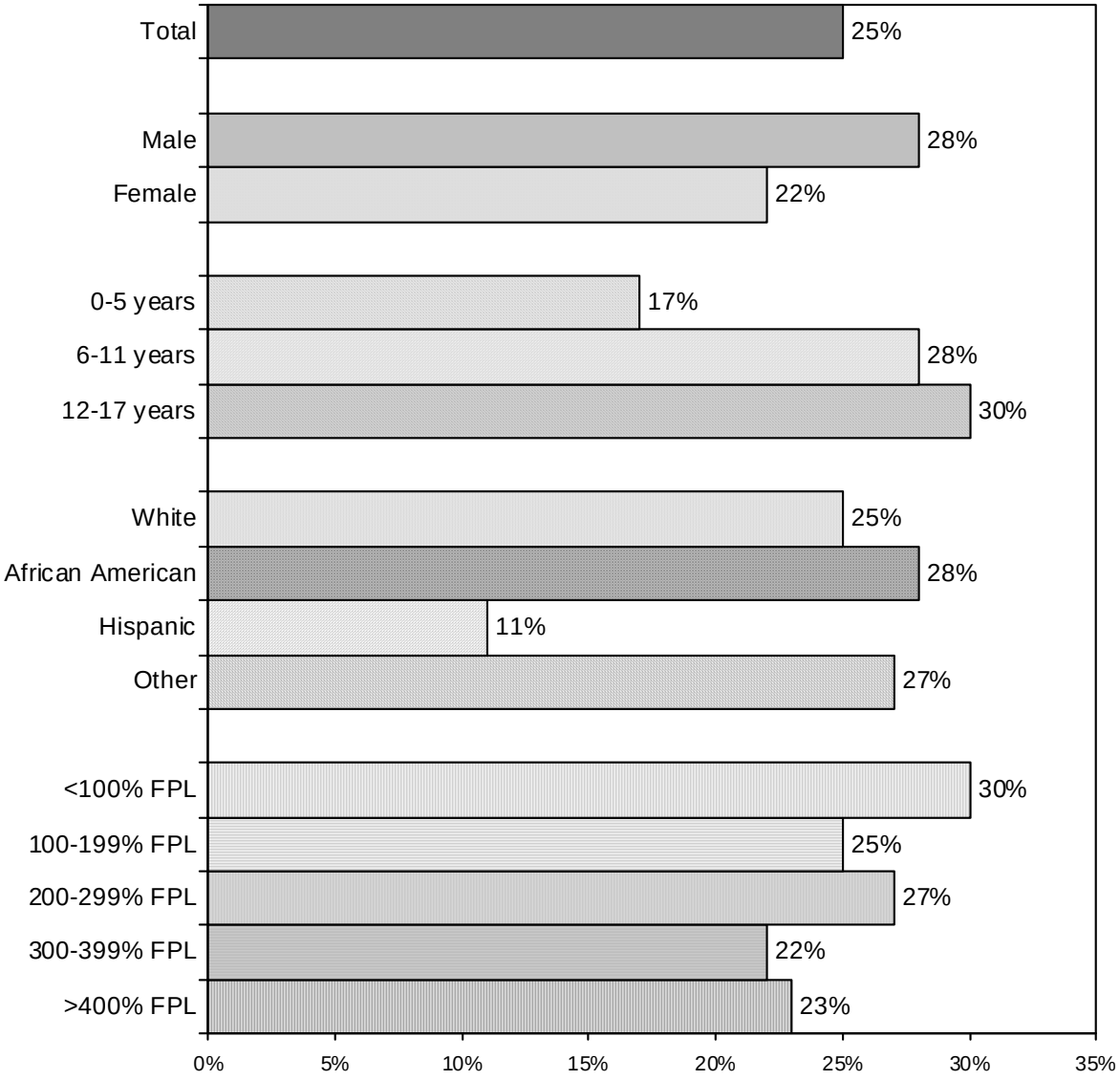
Table 4 and Figure 3 present prevalence rates for the NC CHAMP 2006-2007 total sample by specific demographic characteristics: sex, age, race/ethnicity, and Federal Poverty Level (FPL).

- 24.8% of the total sample was classified as CSHCN.
- Rates of CSHCN vary by sex, such that males are more likely than females to be classified as CSHCN (27.6% vs. 21.8%; $p < .0001$).
- Rates of CSHCN vary by age, such that ages 0-5 years are less likely than ages 6-11 years and ages 12-17 years to be classified as CSHCN (16.6% vs. 28.0% and 29.6%; $p<.0001$).
- Rates of CSHCN vary by race/ethnicity, such that Hispanics are less likely than white non-Hispanic, African American non-Hispanic or other race ethnicity groups to be classified as CSHCN (11.4% vs. 25.2%, 28.4%, and 26.7%; $p<.0001$).
- Rates of CSHCN vary by Federal Poverty Level (FPL), such that <100%FPL are more likely than 300-399% FPL and >400%FPL to be classified as CSHCN (30.4% vs. 22.5% and 22.8%; $p<.01$).
- Rates of CSHCN did not vary by Parent Education.

Table 4. Prevalence Rates of CSHCN by Demographic Characteristics, 2006-2007

	CSHCN	N	Weighted %	95% CI
Total		5682	100%	
Total Sample	Yes	1417	24.8%	23.4, 26.2
	No	4265	75.2%	73.8, 76.6
Sex				
Male	Yes	811	27.6%	25.5, 29.6
	No	2099	72.4%	70.4, 74.5
Female	Yes	606	21.8%	19.9, 23.8
	No	2166	78.2%	76.2, 80.1
Age				
0-5 years	Yes	266	16.6%	14.5, 18.8
	No	1481	83.3%	81.2, 85.5
6-11 years	Yes	502	28.0%	25.5, 30.6
	No	1239	72.0%	69.4, 74.5
12-17 years	Yes	649	29.6%	27.2, 32.1
	No	1545	70.4%	67.9, 72.8
Race/Ethnicity				
White non-Hispanic	Yes	1003	25.2%	23.5, 26.8
	No	2843	74.8%	73.1, 76.5
African American non-Hispanic	Yes	237	28.4%	24.8, 31.9
	No	633	71.6%	68.1, 75.2
Hispanic	Yes	68	11.4%	8.0, 14.8
	No	512	88.6%	85.2, 92.0
Other	Yes	109	26.7%	21.3, 32.1
	No	277	73.3%	67.9, 78.7
Federal Poverty Level (FPL)				
<100% FPL	Yes	190	30.4%	26.0, 34.9
	No	449	69.6%	65.1, 74.0
100-199% FPL	Yes	237	25.2%	21.8, 28.6
	No	729	74.8%	71.4, 78.2
200-299% FPL	Yes	265	26.6%	23.1, 30.0
	No	755	73.4%	70.0, 76.9
300-399% FPL	Yes	238	22.5%	19.4, 25.7
	No	780	77.5%	74.3, 80.6
≥400% FPL	Yes	389	22.8%	20.3, 25.4
	No	1190	77.2%	74.6, 79.7

Figure 3. Prevalence Rates of CSHCN by Demographic Characteristics, 2006-2007



Sample Characteristics for non-CSHCN and CSHCN

Table 5 presents sample characteristics for non-CSHCN (N = 4265) and CSHCN (N = 1417) NC CHAMP 2006-2007.

- 57.1% of CSHCN are male, compared to 49.4% non-CSHCN.

- 22.4% of CSHCN are 0-5 years, 37.7% 6-11 years and 39.9% 12-17 years, compared to non-CSHCN 36.9% 0-5 years, 31.9% 6-11 years and 31.2% 12-17 years.

- 64.1% of CSHCN are white non-Hispanic, 25.8% African American non-Hispanic, 4.0% Hispanic, and 6.1% other race/ethnicity, compared to 62.7% of non-CSHCN 64.1% white non-Hispanic, 21.5% African American non-Hispanic, 10.2% Hispanic, and 5.5% other race/ethnicity.

- 5.1% of CSHCN parents have less than a high school education, 20.5% are a high school graduate or have a GED, and 74.4% CSHCN parents have some college education or a college degree; 6.6% of non-CSHCN parents have less than a high school education, 19.8% are a high school graduate or have a GED, and 73.6% of non-CSHCN parents have some college education or a college degree.

- 17.0% of CSHCN families are less than 100% Federal Poverty Level (FPL), 20.6% are between 100-199% FPL, 19.8% are between 200-299% FPL, 16.8% are between 300-399%, and 25.8% of CSHCN families are equal to or greater than the FPL; 13.0% of non-CSHCN families are less than 100% FPL, 20.4% are between 100-199% FPL, 18.2% are between 200-299% FPL, 19.3% are between 300-399%, and 29.0% of CSHCN families are equal to or greater than the FPL.

Table 5. Sample Characteristics for Non-CSHCN and CSHCN, 2006-2007

	Non- CSHCN			CSHCN		
	N	**Weighted %**	**95% CI**	**N**	**Weighted %**	**95% CI**
Total	4265	100%	-	1417	100%	-
Sex						
Male	2099	49.4%	47.6, 51.3	811	57.1%	53.9, 60.3
Female	2166	50.6%	48.7, 52.4	606	42.9%	39.7, 46.1
Age Group						
0-5 years	1481	36.9%	35.1, 38.7	266	22.4%	19.6, 25.2
6-11 years	1239	31.9%	30.1, 33.6	502	37.7%	34.5, 40.9
12-17 years	1545	31.2%	29.5, 32.9	649	39.9%	36.7, 43.0
Race/Ethnicity						
White non-Hispanic	2843	62.7%	60.9, 64.5	1003	64.1%	60.8, 67.3
African American non-Hispanic	633	21.5%	19.9, 23.1	237	25.8%	22.7, 29.0
Hispanic	512	10.2%	9.1, 11.4	68	4.0%	2.8, 5.2
Other	277	5.5%	4.7, 6.3	109	6.1%	4.7, 7.4
Parent Education Level						
< HS	293	6.6%	5.6, 7.5	75	5.1%	3.6, 6.5
HS graduate/GED	865	19.8%	18.4, 21.3	288	20.5%	17.9, 23.2
> HS	3099	73.6%	71.9, 75.2	1053	74.4%	71.6, 77.2
Federal Poverty Level (FPL)						
<100% FPL	449	13.0%	11.9, 14.6	190	17.0%	14.3, 19.7
100-199% FPL	729	20.4%	19.1, 22.3	237	20.6%	17.8, 23.5
200-299% FPL	755	18.2%	16.7, 19.6	265	19.8%	17.1, 22.4
300-399% FPL	780	19.3%	17.8, 20.8	238	16.8%	14.4, 19.3
≥400% FPL	1190	29.0%	26.9, 30.1	389	25.8%	22.9, 28.6

Heath Care Access and Utilization

Table 6 presents frequency counts and prevalence rates for health care access and utilization survey items for non-CSHCN and CSHCN.

Health Insurance

- CSHCN are less likely than non-CSHCN to be without insurance at some point during the past 12 months (9.4% vs. 12.7%; p<.01).

- Among children with health insurance, CSHCN are more likely than non-CSHCN to be on Medicaid or Health Choice (39.4% vs. 28.8; p<.0001).

- Lack of health insurance was due to: cost (too expensive), job doesn't offer benefits, between jobs or unemployed, unable to get or was refused coverage because of preexisting conditions, no spouse/dependent coverage purchased, parent doesn't know how to get coverage, parent doubts it would be sold to them, or other unspecified reason.

Health Care Visits

- Similar to non-CSHCN, the majority of CSHCN most often visit a doctor's office for sick care (87.4% vs. 90.7%); about four percent of CSHCN go to a public health department or community health center, and about one and a half percent each go to a hospital outpatient department, urgent care center, or some other place (e.g. a hospital emergency room).

- Similar to non-CSHCN, the majority of CSHCN most often visit a doctor's office for a shot or check-up (85.2% vs. 91.4%); about six percent of CSHCN go to a public health department or community health center, and about one and a half percent each go to a hospital outpatient department or some other place (e.g. an urgent care center).

Personal Doctor

- A personal doctor or nurse is a health professional who knows the child well and is familiar with the child's health history, including general doctors, pediatricians, specialists, nurse practitioners, and physician assistants. CSHCN parents are more likely to have someone they think of as their child's personal doctor or nurse compared to non-CSHCN (86.7% vs. 80.6%; p<.0001).

Receipt of Medical Services

- CSHCN are more likely than non-CSHCN to have had a preventive care visit or well child check-up within the past 12 months (85.4% vs. 77.7%; p<.0001).

- CSHCN are more likely than non-CSHCN parents to report that they felt like their child did not receive all the medical care needed during the past 12 months (4.8% vs. 2.4%; p< .001).

- Of CSHCN parents that felt like their child did not receive all the medical care needed during the past 12 months, half felt the main reason for not receiving all necessary care was due to cost (including lack of insurance) and half had some other unspecified reason.

- CSHCN parents are more likely than non-CSHCN to report that they delayed or did not get a medicine that a doctor prescribed for child because of cost or lack of insurance within the past 12 months (8.3% vs. 3.0%; $p < .001$).

Communication

- The best communication with a personal doctor or nurse requires that they listen carefully to a parent, provide needed information, and respect parent's needs and requests. Similar to non-CSHCN, the majority of CSHCN parents rate communication between child's personal doctor and themselves as 'excellent' (59.5%) or 'very good' (29.0%), while 11.6% gave a rating of 'good, fair or poor'.

Table 6. Health Care Access and Utilization, 2006-2007

	Non-CSHCN			CSHCN		
	N	Weighted %	95% CI	N	Weighted %	95% CI
Health insurance during the past 12 months:						
With insurance	2697	87.3%	86.0, 88.5	1264	90.6%	88.9, 92.3
Without insurance	558	12.7%	11.5, 14.0	151	9.4%	7.6, 11.1
Type of health insurance:						
State Health Plan	256	5.4	4.6, 6.2	74	3.8	2.7, 4.8
Private	2300	53.8	52.0, 55.6	710	48.9	45.7, 52.2
Health Choice	152	3.9	3.1, 4.6	85	5.9	4.4, 7.4
Medicaid	888	22.8	21.2, 24.4	382	32.0	28.9, 35.2
Other	300	6.9	6.0, 7.8	92	5.7	4.3, 7.1
None	327	7.3	6.3, 8.3	63	3.6	2.6, 4.7
Visit most often for sick care:						
Doctor's office	3634	87.4%	86.1, 88.6	1296	90.7%	88.8, 92.7
Public health department	205	4.9%	4.0, 5.7	47	4.3%	2.9, 5.7
Hospital outpatient	158	3.2%	2.6, 3.8	25	1.5%	0.7, 2.2
Urgent Care Center	81	1.8%	1.3, 2.3	20	1.8%	0.9, 2.7
Other	131	2.8%	2.2, 3.4	25	1.7%	0.9, 2.5
Visit most often for shot or check-up:						
Doctor's office	3601	85.2%	83.8, 86.5	1303	91.4%	89.5, 93.3
Public health department	354	8.7%	7.6, 9.8	73	5.7%	4.7, 7.3
Hospital outpatient	175	3.5%	2.9, 4.2	21	1.4%	0.6, 2.1
Other	118	2.6%	2.0, 3.2	19	1.5%	0.7, 2.3
Child has a personal doctor or nurse:						
Yes	3415	80.6%	79.1, 82.0	1239	86.7%	84.5, 89.0
No	833	19.4%	17.9, 20.9	176	13.3%	11.0, 15.5
Preventive care visit or well child check-up within the past 12 months:						
Yes	3227	77.8%	76.2, 79.3	1185	85.4%	83.1, 87.7
No	999	22.2%	20.7, 23.8	220	14.6%	12.2, 16.9
Parent felt child received all the medical care needed during the past 12 months:						
Yes	4158	97.6%	97.0, 98.2	1355	95.2%	93.7, 96.7
No	98	2.4%	1.8, 3.0	59	4.8%	3.3, 6.2
Did not get a medicine that a doctor prescribed for child because of cost:						
Yes	120	3.0%	2.4, 3.7	112	8.3%	6.5, 10.11
No	4143	97.0%	96.3, 97.6	1304	91.7%	89.9, 93.5
Communication between parent and child's personal doctor or nurse:[†]						
Excellent	875	55.8%	52.8, 58.8	353	59.5%	54.5, 64.4
Very Good	463	29.6%	26.8, 32.4	177	29.0%	24.4, 33.5
Good/Fair/Poor	214	14.6%	12.4, 16.8	67	11.6%	8.2, 14.9

Note: use caution in interpreting cell sizes n < 50.

[†]2007 Survey only (non-CSHCN N=1552; CSHCN N = 597)

Health Status

Frequency counts and prevalence rates for general health status, oral health, and weight status for non-CSHCN and CSHCN are presented in Table 7.

General Health

- CSHCN are more likely than non-CSHCN to be rated as having 'fair' or 'poor' general health (8.1% vs. 2.0%) and less likely to receive a general health rating of 'excellent'(36.2% vs. 63.4%; p<.001).

Oral Health

- CSHCN are more likely than non-CSHCN to have a dentist or dental clinic that the child visits regularly (82.0% vs. 75.9%; p<.001).

- CSHCN are more likely than non-CSHCN to have dental insurance (83.6% vs. 78.7%; p<.001).

- CSHCN are more likely than non-CSHCN to have visited a dentist within the past 6 months (69.7% vs. 63.8%), and less likely to have never been to the dentist (7.7% vs. 16.5%; p<.0001).

Weight Status

Percentiles for weight status include children ages 2 to 17 years. Weight status is based on weight percentiles calculated from the 2000 CDC growth charts, by age and sex. Percentiles rank the position of a child by indicating what percent of the reference population the child would equal or exceed. For example, a 5-year-old girl whose weight is at the 25th percentile weighs the same or more than 25 percent of the reference population of 5-year-old girls, and weighs less than 75 percent of the 5-year-old girls in the reference population. Weight-for-Age percentiles are used to measure a child's weight based strictly on age. It does not take into account the height of a child. This is not a method to determine obesity (or overweight) in children, but simply an indicator of growth as compared to children of the same age.

- 64.5% of CSHCN are between the 5th and 84th percentile for weight based on percentiles for age and sex, compared to 69.6% non-CSHCN.

- 15.7% of CSHCN are between the 85th and 95th percentile for weight based on age and sex, compared to 14.8% non-CSHCN.

- 15.0% of CSHCN are in the 95th percentile for weight based on age and sex, compared to 11.7% non-CSHCN.

BMI Status

Body Mass Index (BMI) is calculated as weight (in kilograms) divided by height (in meters) squared. BMI status is based on BMI percentiles calculated from the 2000 CDC growth charts, by age and sex and defined as: less than 5 percent classified as underweight; between 5 and 84 percent classified as recommended range; between 85 and 94 percent classified as overweight; and greater than or equal to 95 percent classified as obese. Due to a greater percentage of missing values and biologically improbable values (e.g., proxy reported height too high for child's age) for height among children ages 10 and younger, BMI is only reported for children ages 10 to 17 years.

- 64.2% of CSHCN are in the recommended range of weight for height based on BMI percentiles for age and sex, comparable to non-CSHCN (61.9%).

- 32.5% of CSHCN are overweight or obese based on BMI percentiles for age and sex, comparable to non-CSHCN (34.0%).

Table 7. Health Status, 2006-2007

	Non-CSHCN			CSHCN		
	N	**Weighted %**	**95% CI**	**N**	**Weighted %**	**95% CI**
General Health						
Excellent	2656	63.4%	61.7, 65.2	528	36.2%	33.1, 39.3
Very Good	1020	22.8%	21.3, 24.4	462	31.8%	28.7, 34.8
Good	493	11.7%	10.5, 12.9	313	23.9%	21.1, 26.8
Fair or Poor	87	2.0%	1.5, 2.5	111	8.1%	6.3, 9.9
Dental Health						
Has a regular dentist:						
Yes	3022	75.9%	74.2, 77.5	1161	82.0%	79.4, 84.5
No	969	24.1%	22.5, 25.8	233	18.0%	15.5, 20.6
Dental insurance:						
Yes	3001	78.7%	77.1, 80.2	1112	83.6%	81.3, 85.8
No	945	21.3%	19.8, 22.9	271	16.4%	14.2, 18.7
Last saw dentist:						
Within past 6 months	2557	63.8%	61.9, 65.6	986	69.7%	66.6, 72.8
6 months to a year ago	439	11.6%	10.3, 12.8	188	12.6%	10.4, 14.7
More than a year ago	336	8.2%	7.1, 9.2	100	7.7%	5.8, 9.6
Never	646	16.5%	15.0, 17.9	113	10.0%	7.9, 12.1
Weight Status						
Weight for age[1]						
< 5%	121	3.8%	3.0, 4.7	51	4.9%	3.3, 6.5
5-84%	2285	69.6%	67.7, 71.6	794	64.5%	61.1, 67.8
85-94%	498	14.8%	13.3, 16.4	187	15.7%	13.1, 18.2
≥ 95%	386	11.6%	10.3, 13.0	180	15.0%	12.5, 17.5
BMI for age[2]						
Underweight	82	4.3%	3.1,5.4	33	4.1%	2.5, 5.7
Recommended Range	1217	65.3%	62.6, 68.1	473	60.4%	56.1, 64.8
Overweight	295	17.1%	14.9, 19.3	142	19.8%	16.2, 23.4
Obese	236	13.3%	11.3, 15.3	131	15.7%	12.6, 18.7

Note: use caution in interpreting cell sizes n < 50.

[1] Ages 2-17 years (non-CSHCN N = 3741; CSHCN N=1354).

[2] Ages 10-17 years (non-CSHCN N = 1986; CSHCN N=834).

Birth Characteristics

Table 8 and Figure 4 present prevalence rates for premature birth and low birth weight for non-CSHCN and CSHCN.

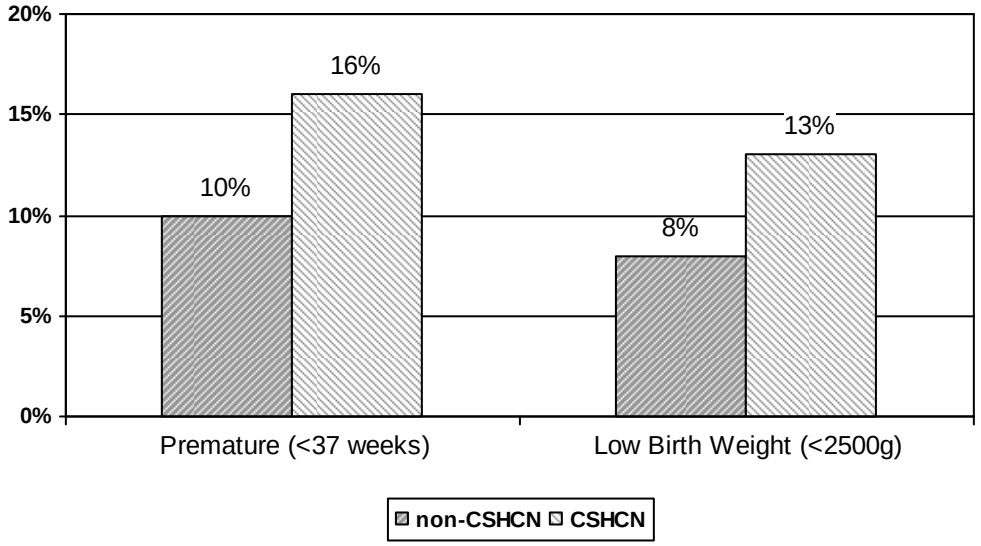
- CSHCN are more likely than non-CSHCN to be born premature (i.e. less than 37 weeks gestation) (16.3% vs. 10.2%; p<.0001).
- CSHCN are more likely than non-CSHCN to be low birth weight (i.e. less than 2500 grams) (13.4% vs. 8.2%; p<.0001).

Table 8. Prevalence Rates for Gestational Age at Birth and Low Birth Weight, 2006-2007

	Non-CSHCN			CSHCN		
	N	Weighted %	95% CI	N	Weighted %	95% CI
Gestational age at birth:						
< 28 weeks	51	1.3%	.8, 1.7	30	2.9%	1.7, 4.1
28-31 weeks	75	1.7%	1.2, 2.1	40	2.8%	1.7, 3.9
32-33 weeks	77	1.7%	1.2, 2.2	23	2.8%	1.5, 4.1
34-36 weeks	208	5.5%	4.6, 6.4	94	7.8%	6.0, 9.6
37-39 weeks	1010	24.5%	22.9, 26.1	349	24.7%	21.9, 27.6
≥40 weeks	2719	65.3%	63.5, 67.1	808	59.0%	55.7, 62.2
Premature (<37 weeks)	411	10.2%	9.0, 11.4	187	16.3%	13.8, 22.1
Low Birth Weight (< 2500 grams)	336	8.2%	7.2, 9.3	153	13.4%	11.0, 15.9

Note: use caution in interpreting cell sizes n < 50.

Figure 4. Prevalence of Premature Birth and Low Birth Weight for Non-CSHCN and CSHCN, 2006-2007.



Early Childhood Development

Eight survey items asked respondents to rate concerns about their child regarding specific early childhood developmental behaviors as either being 'a lot concerned', 'a little concerned', or 'not at all concerned'. These survey items were only asked of children ages birth to 5 years (N = 1480 for non-CSHCN birth to 5 years; N = 266 for CSHCN birth to 5 years). Respondents that reported either being 'concerned a lot' or 'concerned a little' for each survey item were coded as 'concerned' and presented in Table 9 and Figure 5.

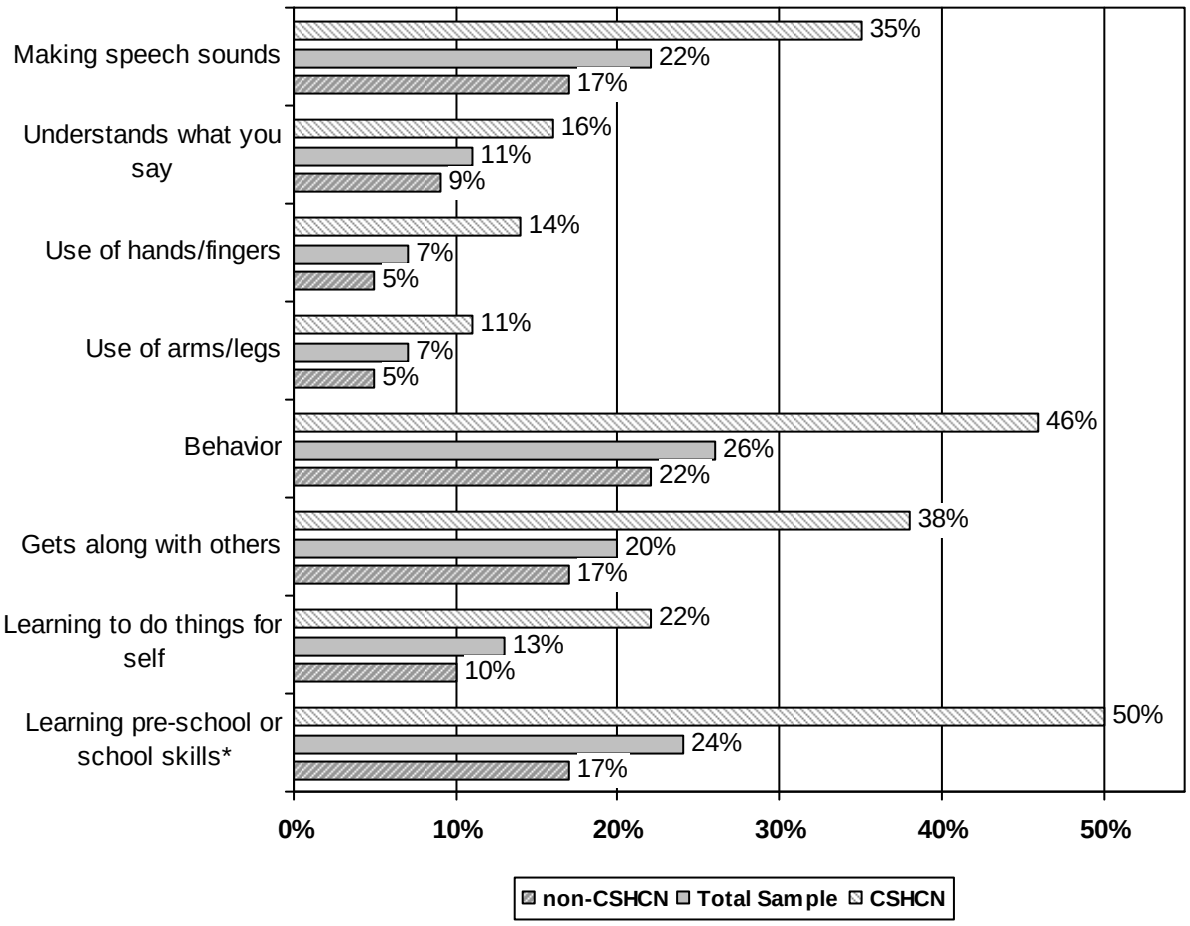
- CSHCN are more likely than non-CSHCN to report being concerned about how their child:
  - talks or makes speech sounds (36.5% vs. 17.4%; p<.0001).
  - understands what they say (21.3% vs. 9.0%; p<.0001).
  - uses their hands and fingers to do things (14.7% vs. 5.5%; p<.0001).
  - uses their arms and legs (13.5% vs. 5.2%; p<.0001).
  - behaves (41.6% vs. 22.5%; p<.0001).
  - gets along with others (31.5% vs. 17.1%; p<.0001).
  - is learning to do things for themselves (24.5% vs. 10.2%; p<.0001).
  - is learning pre-school or school skills, such as learning to read (43.4% vs. 17.1% ages 4-5 years; p<.0001).

Table 9. Parental Concerns about Early Childhood Development, 2006-2007

Concerned with how child…	Non-CSHCN[1]			CSHCN[2]		
	N	**Weighted %**	**95% CI**	**N**	**Weighted %**	**95% CI**
…talks and makes speech sounds	245	17.4%	15.0, 19.8	90	36.5%	29.5, 43.6
… understands what you say	141	9.0%	7.2, 10.8	52	21.3%	15.3, 27.3
… uses their hands and fingers to do things	94	5.5%	4.2, 6.8	40	14.7%	9.8, 19.6
…uses their arms and legs	90	5.2%	4.0, 6.5	35	13.5%	8.7, 18.3
…behaves	337	22.5%	19.9, 25.1	110	41.6%	34.5, 48.7
…gets along with others	265	17.1%	14.8, 19.3	82	31.5%	24.7, 38.3
…is learning to do things for him/herself	159	10.2%	8.4, 12.0	61	24.5%	18.3, 30.8
…is learning pre-school or school skills[3]	73	17.1%	12.9, 21.3	44	43.4%	32.4, 54.4

Note: use caution in interpreting cell sizes n < 50.
[1] Non-CSHCN Ages 0-5 years N = 1480.
[2] CSHCN Ages 0-5 years N = 266.
[3]Ages 4-5 years Non-CSHCN N = 455; CSHCN N = 110.

Figure 5. Parental Concerns about Early Childhood Development (ages 0-5 yrs), 2006-2007.



Note: Bars represent percent of respondents who report being concerned about their child's development.
*Concerns with learning pre-school or school skills only asked of children ages 4-5 years.

School Performance

Table 10 and Figure 6 present prevalence rates for school performance survey items among children enrolled in public or private school.

- CSHCN are more likely than non-CSHCN to have repeated a grade since entering kindergarten (21.8% vs. 13.4%; p<.0001).
- CSHCN school performance is less likely than non-CSHCN to be reported as 'excellent' (29.1% vs. 42.3%; p<.0001).
- CSHCN school performance is more likely than non-CSHCN to be rated as 'below average' or 'poor' (17.85 vs. 2.4%; p<.0001).
- CSHCN grades in school for the past year are less likely than non-CSHCN to be A's and B's (51.0% and 26.1% vs. 56.8% and 30.2%).
- CSHCN are more likely to have C's, or D's/F's (17.7% and 5.2%) compared to non-CSHCN (10.9% and 2.0%).
- CSHCN are less likely than non-CSHCN to miss no days of school due to illness or injury (17.9% vs. 25.5%).
- CSHCN are less likely than non-CSHCN to miss less than a week of school (43.4% vs. 51.2%).
- CSHCN are more likely to miss 1-2 weeks (26.8%) or more than 2 weeks of school (11.9%) due to an illness or injury, compared to non-CSHCN (16.5% and 6.8%).
- CSHCN (ages 3-17 years) are more likely than non-CSHCN to receive Special Education Services (19.3% vs. 2.8%; p<.0001).

Table 10. School Performance, 2006-2007

	Non-CSHCN[1]			CSHCN[2]		
	N	**Weighted %**	**95% CI**	**N**	**Weighted %**	**95% CI**
Repeated a grade:						
Yes	286	11.8%	10.2, 13.4	220	22.5%	19.2, 25.7
No	2328	88.2%	86.6, 89.8	858	77.5%	74.3, 80.8
Performance in school[3]:						
Excellent	670	42.3%	39.4, 45.3	185	29.1%	24.8, 33.5
Above average	445	28.0%	25.2, 30.6	147	23.3%	19.2, 27.3
Average	437	27.4%	24.7, 30.0	180	29.8%	25.3, 34.2
Below average/poor	42	2.4%	1.5, 3.2	86	17.8%	13.9, 21.8
Grades for the past year[4]:						
A's	648	57.4%	53.7, 61.0	238	50.7%	45.0, 56.4
B's	349	30.4%	27.1, 33.8	142	26.0%	21.2, 30.9
C's	119	10.5%	8.2, 12.8	80	17.9%	13.4, 22.5
D's or F's	20	1.7%	.79, 2.6	29	5.3%	3.0, 7.6
Missed days of school:						
None	668	24.8%	22.8, 26.8	197	18.4%	15.5, 21.3
Less than a week	1467	51.1%	48.8, 3.3	493	42.8%	39.2, 46.4
1-2 weeks	508	17.1%	15.4, 18.8	323	27.2%	24.0, 30.5
More than 2 weeks	208	7.0%	5.8, 8.1	135	11.6%	9.2, 14.0
Special Education Services[5]	87	2.8%	2.1, 3.5	237	19.3%	16.5, 22.0

Note: use caution in interpreting cell sizes n < 50.

[1] Ages 4 -17 years enrolled in public or private school non-CSHCN N = 2614.

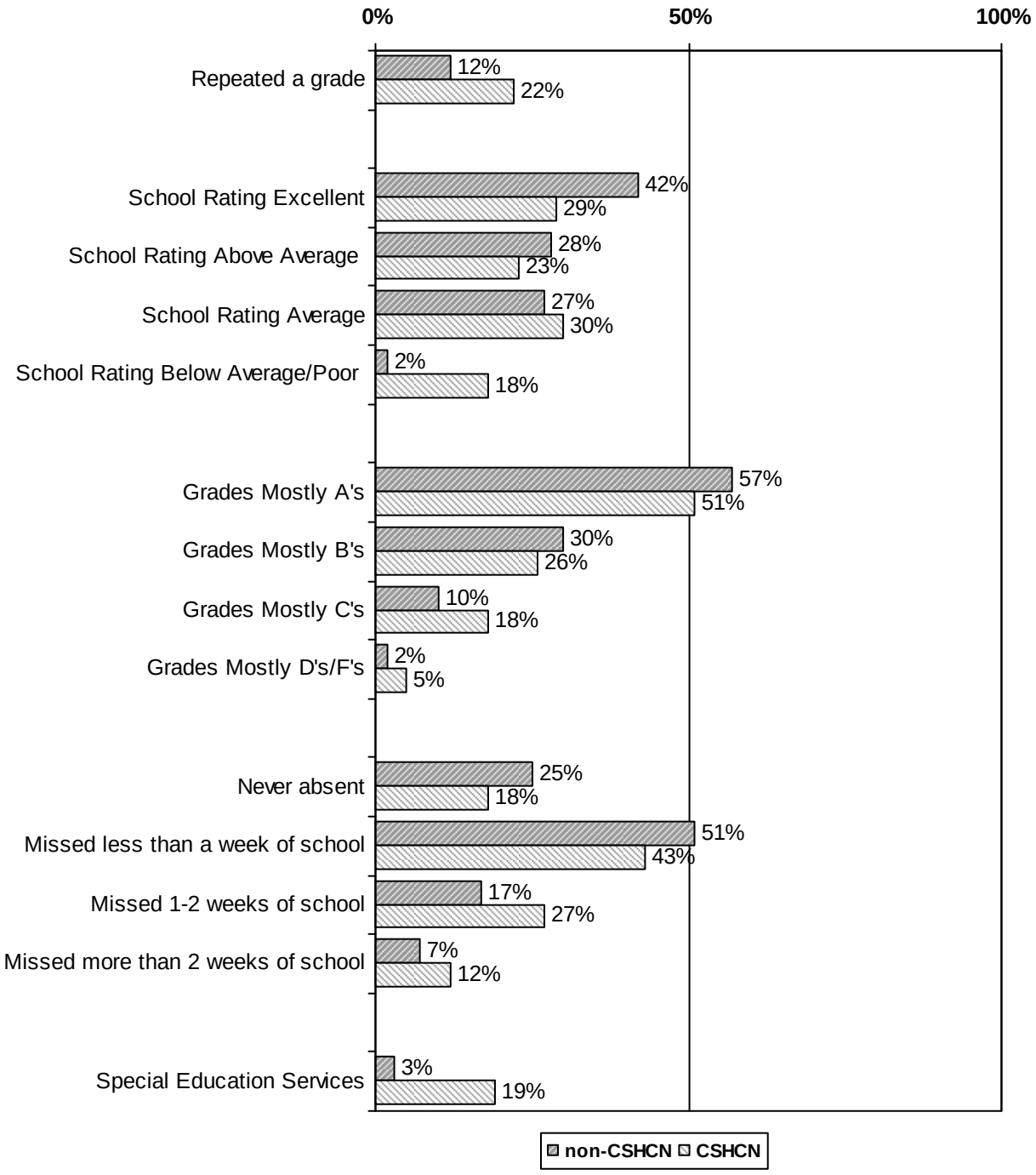
[2] Ages 4 -17 years enrolled in public or private school CSHCN N = 1148.

[3] 2006 Survey only (non-CSHCN N = 1594; CSHCN N = 598).

[4] 2007 Survey only (non-CSHCN N = 1136; CSHCN N = 489).

[5] Ages 3 -17 years (non-CSHCN N = 3467; CSHCN N = 1299).

Figure 6. Prevalence of School Performance Measures, 2006-2007



Food Insecurity

Table 11 and Figure 7 present the prevalence of families that are enrolled in WIC and the Food Stamp Program for non-CSHCN and CSHCN.

- 32.7% of CSHCN ages birth to 4 years are enrolled in the Women, Infants, and Children Program (WIC), compared to 24.8% of non-CSHCN.

- CSHCN are more likely than non-CSHCN to be enrolled in the Food Stamp Program (17.3% vs. 11.5%; p<.0001).

- CSHCN are more likely than non-CSHCN to rely on only a few kinds of low-cost food to feed their child during the past 12 months due to running out of money to buy food. Low cost food means items such as macaroni and cheese, peanut butter, rice, beans, pasta, and sugar-sweetened beverages, lacking variety with little or no meat, vegetables, or fruit. Sixty-four percent of CSHCN report "never" relying on low-cost food compared to 76.3% non-CSHCN (p<.0001).

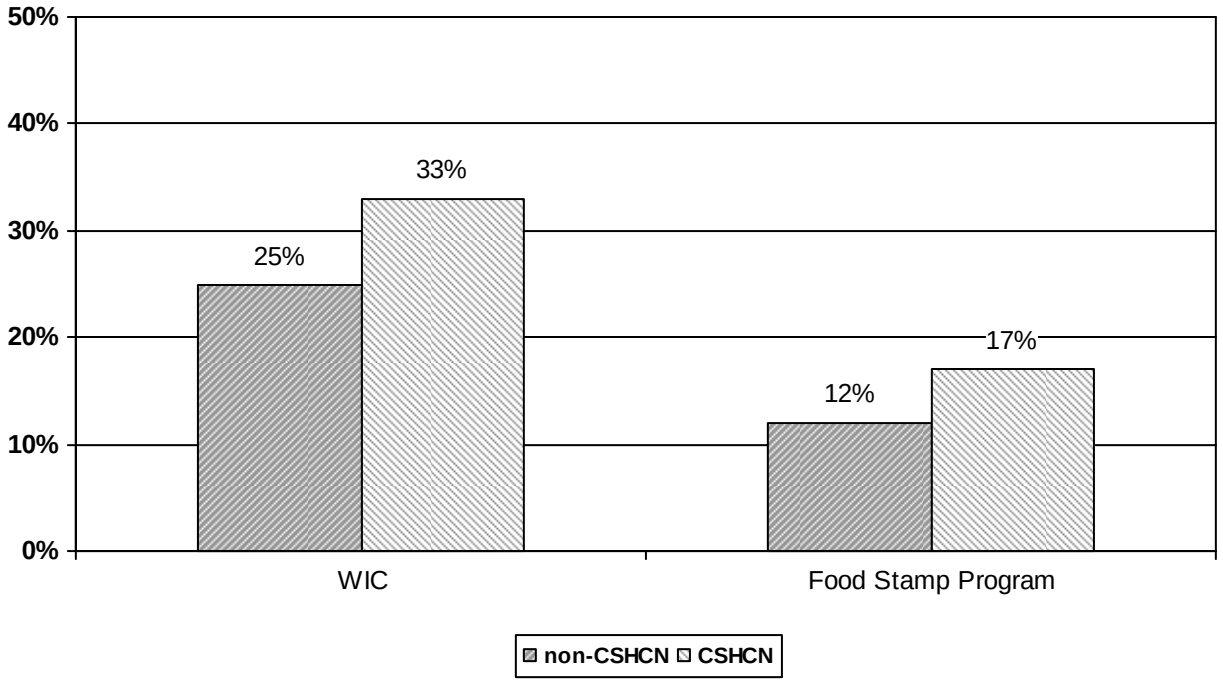
- 5.4% CSHCN and 4.2% non-CSHCN report having to cut the size of their child's meals because there wasn't enough money for food sometime during the past 12 months.

Table 11. WIC and Food Stamp Enrollment, 2006-2007

	Non-CSHCN			CSHCN		
	N	**Weighted %**	**95% CI**	**N**	**Weighted %**	**95% CI**
WIC[1]	323	24.8%	21.9, 27.7	63	32.7%	24.7, 40.7
Food Stamp Program	394	11.5%	10.2, 12.7	194	17.3%	14.6, 19.9
Rely on lost-cost food:						
Very Often	110	3.3%	2.6, 4.0	74	6.2%	4.5, 8.0
Often	109	3.2%	2.4, 3.9	69	5.5%	4.0, 7.1
Sometimes	361	9.6%	8.4, 10.7	174	13.3%	11.0, 15.5
Seldom	301	7.6%	6.6, 8.7	132	10.7%	8.6, 12.8
Never	3104	76.3%	74.6, 78.0	939	64.3%	61.0, 67.5
Cut size of meal due to costs:						
Yes	135	4.2%	3.3, 5.0	66	5.4%	3.9, 7.0
No	3861	95.8%	95.0, 96.7	1326	94.5%	93.0, 96.1

[1]Ages 0-4 years (non-CSHCN N = 1258; CSHCN N = 205).

Figure 7. Prevalence of Families Enrolled in WIC and the Food Stamp Program for Non-CSHCN and CSHCN, 2006-2007.



Child Discipline

Table 12 and Figure 8 present frequency counts for nine survey items on various methods of child discipline asked respondents if they themselves or anyone else in the household had used the method to teach their child the right behavior or to address a behavior problem in the past month.

- CSHCN parents are more likely than non-CSHCN parents to have taken away privileges, forbade something the child liked, such as not allowed to watch TV or grounded child (e.g. child not allowed to leave house) in the past month (76.2% vs. 70.3%; $p<.001$).

- CSHCN parents are more likely than non-CSHCN parents to have explained why something (i.e. a behavior) was wrong in the past month (92.5% vs. 89.5%; $p<.01$).

- 55.5% of CSHCN parents have shouted, yelled at, or screamed at their child in the past month, compared to 53.8% non-CSHCN parents.

- CSHCN parents are more likely than non-CSHCN parents to have insulted or called their child dumb, lazy, or another name in the past month (7.5% vs. 4.0%; $p<.0001$).

- CSHCN parents are more likely than non-CSHCN parents to have spanked their child on the bottom with a bare hand in the past month (29.5% vs. 25.0%; $p<.04$).

- 7.1% of CSHCN parents have hit their child on the bottom or legs with something like a belt, hairbrush, or other hard object in the past month, compared to 5.7% non-CSHCN parents.

- 15.8% of CSHCN parents have hit or slapped their child on the hand, arm or leg in the past month, compared to 13.4% non-CSHCN parents.

- 1.2% of CSHCN parents have slapped their child on the face, head or ears in the past month, compared to 1.1% non-CSHCN parents.

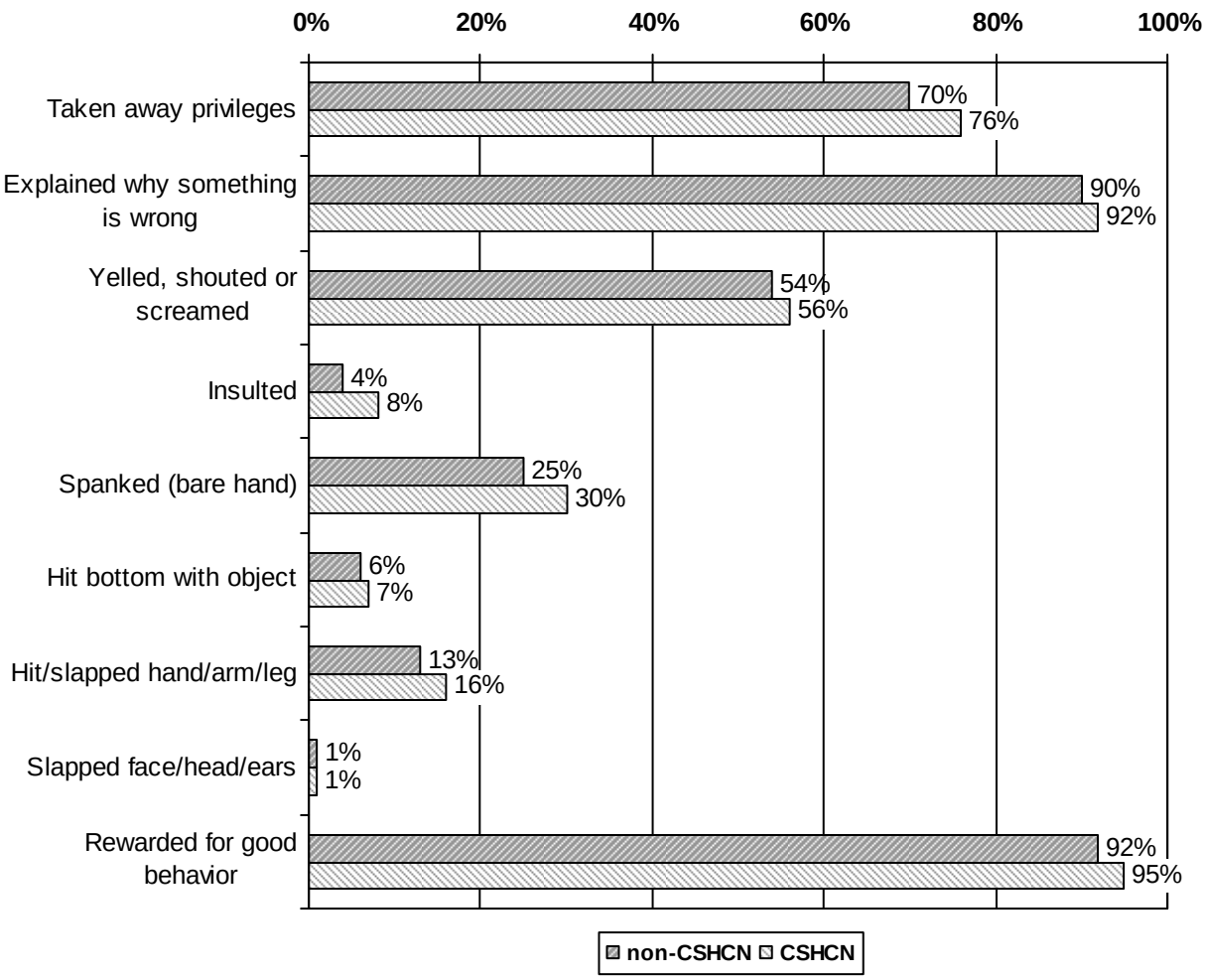
- CSHCN parents are more likely than non-CSHCN parents to have rewarded their child for good behavior such as giving their child a special privilege, a favorite food or taking the child to a favorite place in the past month (95.0% vs. 92.4%; $p<.05$).

Table 12. Methods of Child Discipline Used in Past Month, 2006-2007

	Non-CSHCN			CSHCN		
	N	Weighted %	95% CI	N	Weighted %	95% CI
Taken away privileges						
Yes	2526	70.3%	68.6, 72.1	1012	76.2%	73.4, 79.0
No	1225	29.7%	27.9, 26.6	343	23.8%	73.4, 79.0
Explained why something was wrong						
Yes	3289	89.5%	88.4, 90.7	1247	92.5%	90.6, 94.3
No	435	10.5%	9.3, 11.6	104	7.5%	5.7, 9.3
Yelled, shouted, or screamed						
Yes	1907	53.8%	51.9, 55.8	710	55.5%	52.5, 58.8
No	1964	46.2%	44.2, 48.1	655	44.5%	41.2, 47.8
Insulted						
Yes	159	4.0%	3.2, 4.8	90	7.5%	5.6, 9.3
No	3734	96.0%	95.2, 96.8	1277	92.5%	90.7, 94.4
Spanked (bare hand)						
Yes	648	25.0%	23.0, 27.0	231	29.5%	25.6, 33.4
No	1932	75.0%	73.0, 77.0	579	70.5%	66.6, 74.4
Hit bottom with object[†]						
Yes	74	5.7%	4.2, 7.3	36	7.1%	4.4, 9.8
No	1504	94.3%	92.7, 95.8	605	92.9%	90.2, 95.6
Hit/slapped hand/arm/leg[†]						
Yes	196	13.4%	11.2, 15.5	89	15.8%	12.0, 19.6
No	1381	86.6%	84.4, 88.8	551	84.2%	80.4, 88.0
Slapped on face/head/ears[†]						
Yes	14	1.1%	0.4, 1.8	7	1.2%	0.2, 2.2
No	1564	98.9%	98.2, 99.6	635	98.8%	97.8, 99.8
Rewarded for good behavior[†]						
Yes	1443	92.4%	90.8, 94.0	600	95.0%	93.2, 96.9
No	129	7.6%	6.0, 9.2	42	5.0%	3.1, 6.8

Note: use caution in interpreting cell sizes n < 50.
[†]2007 Survey only (non-CSHCN N = 1578; CSHCN N = 642).

Figure 8. Prevalence Rates for Methods of Child Discipline Used in Past Month, 2006-2007



Summary of Results

Health Care Access and Utilization

CSHCN are less likely than non-CSHCN to be without insurance at some point during the past 12 months.

CSHCN are more likely than non-CSHCN to:

- have health insurance through Medicaid or Health Choice;
- have someone they think of as their child's personal doctor or nurse;
- have had a preventive care visit or well child check-up within the past 12 months;
- report that they felt like their child did not receive all the medical care needed during the past 12 months;
- report that they delayed or did not get a medicine that a doctor prescribed for child because of cost or lack of insurance within the past 12 months.

General Health Status

CSHCN are more likely than non-CSHCN to be rated as having 'fair' or 'poor' general health and less likely to receive a general health rating of 'excellent'.

Weight and BMI Status

There was no significant difference between CSHCN and non-CSHCN on rates of weight status percentiles or rates of overweight and obesity.

Oral Health

CSHCN are more likely than non-CSHCN to have:

- a dentist or dental clinic that the child visits regularly;
- dental insurance;
- visited a dentist within the past 6 months.

Birth Characteristics

CSHCN are more likely than non-CSHCN to be:

- premature;
- low birth weight.

School Performance

Among children enrolled in public or private school, CSHCN are more likely than non-CSHCN to:

- have repeated a grade since entering kindergarten;
- be rated as 'below average' or 'poor' school performance;
- make mostly "C's", or "D's/F's" during the past school year;
- miss two or more weeks of school due to an illness or injury;
- receive Special Education Services.

Food Insecurity

CSHCN are more likely than non-CSHCN to:

- be enrolled in the Food Stamp program.
- rely on only a few kinds of low-cost food during the past 12 months due to running out of money to buy food.

There was no significant difference between CSHCN and non-CSHCN for:

- rates of enrollment in WIC.
- having to cut the size of their meals sometime during the past 12 months because there wasn't enough money for food.

Child Discipline

In the past month, CSHCN parents are more likely than non-CSHCN parents to:

- take away privileges or ground their child.
- explain why something (i.e. a behavior) was wrong to their child.
- insult or call their child dumb, lazy, or another name.
- spank their child on the bottom with a bare hand.
- reward their child for good behavior such as giving their child a special privilege, a favorite food or taking the child to a favorite place.

There were no significant differences between CSHCN and non-CSHCN for the rate at which parents, in the past month, have:

- shouted, yelled at, or screamed at their child.
- hit their child on the bottom or legs with something like a belt, hairbrush, or other hard object.
- hit or slapped their child on the hand, arm or leg.
- slapped their child on the face, head or ears.

Conclusion

The North Carolina Child Health Assessment and Monitoring Program (NC CHAMP) is a surveillance system that collects information about the health characteristics of children and adolescents from birth to age 17 in North Carolina on an annual basis. The focus of this report is Children with Special Health Care Needs. NC CHAMP 2006-2007 data suggest that there are significant differences between CSHCN and non-CSHCN on health care access and utilization, health status, birth characteristics, early childhood development, school performance, and child discipline. Results highlight the need for the continued study of CSHCN and the causes of these health disparities.