

# OHIO FAMILY HEALTH SURVEY

SPONSORED RESEARCH

## Stressors Associated with Caring for Children with Complex Health Conditions in Ohio

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 **OFHS**  
Ohio Family Health Survey



## **What is the Ohio Family Health Survey?**

The Ohio Family Health Survey (OFHS) is a phone survey that gathers information on health-related issues impacting Ohioans. It is considered one of the largest and most comprehensive state-level health and insurance surveys conducted in the nation. Four iterations of the survey (1998, 2003/04, 2008 and 2010) have been conducted and current survey sponsors include the Ohio departments of Insurance, Job and Family Services, Health, and Mental Health, the Health Foundation of Greater Cincinnati, the Health Policy Institute of Ohio, and The Ohio State University.

The OFHS Steering Committee partners decided to conduct a smaller interim survey in **2010**, with HPIO continuing its involvement as the disseminator of survey data. The emphasis for the 2010 survey was gauging the level of economic stress on Ohio families and how that stress was impacting Ohio's health system and indicators of health, in light of the severe economic downturn that began in late 2008. The 2010 OFHS included responses from 8,276 adults and proxy responses for 2,002 children.

Ohio Family Health Survey Web site (all sponsored research reports are available for download here):

**<http://grc.osu.edu/ofhs>**

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## Executive Summary

Based on results from the 2010 Ohio Family Health Survey (OFHS), 12 percent of all Ohioan children either have a functional limitation or a developmental, behavioral, or emotional problem that requires ongoing medical treatment or counseling. These children with complex health conditions (CCHC) require an increased commitment in caregiver time and financial resources. Caring for CCHC not only costs more but they also impact the ability of the parent to be employed to their maximum potential. The goal of this study was to identify and measure the impact of parental caregiver stress across financial, economic, and psychological stressors. Compared to parents raising non-CCHC and taking into account different child and parent demographics and socio-economic factors:

- Parents caring for children with functional limitations were 2.8 times as likely to be unable to pay for basic necessities, 2.0 times as likely to have used up most of their personal savings, 2.4 times as likely to be unable to pay rent, mortgage, or utility bills, and 2.1 times as likely to have received financial help to pay for rent, mortgage or utility bills.
- Parents of children with developmental, behavioral or emotional problems were 1.8 times as likely to have problems or were unable to pay for medical bills, 2.0 times as likely to be unable to pay for basic necessities, and 1.7 times as likely to have used up most of their personal savings.
- Parents of children with functional limitations were 2.7 times as likely to feel sad, 3.5 times as likely to feel nervous, 3.1 times as likely to feel restless, 3.3 times as likely to feel everything is hopeless, at least most of the time. Overall, they were 4.2 times as likely to be classified as having serious depression and 2.3 times as likely to need treatment or counseling for mental health, substance abuse or emotional problem.
- Parents of children with developmental, behavioral or emotional problems are 2.6 times as likely to need treatment or counseling for mental health, substance abuse or emotional problem.

Three distinct patterns of responses (or latent classes) to individual stressors were identified. Class 1 is predominantly characterized by parents with considerable stress across all financial, economic, and psychological stressors. Parents in Class 2 have stress across all financial and most economic stressors, but respond infrequently to having a psychological stressor. Class 3 is characterized mostly by parents with very low levels of stress exhibited across all financial, economic, and psychological stressors. Compared to parents caring for non-CCHC, those caring for CCHC were 3.4 times as likely to be assigned to latent class 1 than latent class 2 and 2.0 times as likely to be assigned to latent class 2 over latent class 3.

In light of these findings, we propose five policy recommendations, all aligned to providing more comprehensive respite care services to reduce the level of stress in parents caring for CCHC: 1) among existing waiver holders and those on waiting lists, conduct a thorough needs assessment for respite care that is incorporated as part of a medical home; 2) compile an inventory of existing respite care-givers (formal and informal) to gauge the impact on the existing respite care labor force prior to the expansion of respite care benefits under public programs. A respite care labor force must be able to be accessed in a timely manner; 3) Based on the results of a needs assessment, increase the allocation of respite care dollars available through the Medicaid waiver programs. If remuneration for formal respite care is a barrier to the supply of respite care, increase remuneration rates; 4) For parents and children on waiting lists, partition the benefits component of waivers to include the provision of respite care before full-benefit coverage waivers are secured; 5) Implement a number of demonstration projects to measure the benefits of respite care in reducing stress in parents caring for CCHC. This will include an on-going needs assessment and financial and psychological stressor measurement component.

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# 1. Introduction

In Ohio, an estimated 302,598 children 0-17 years of age either have a functional limitation (children who are limited or prevented in any way in their ability to do the things most children the same age do) or a developmental, behavioral, or emotional problem that requires ongoing treatment or counseling. These children with complex health conditions (CCHC) represent 12.3% of all children in Ohio. Caring for a CCHC requires an increased commitment in time and financial resources impacting all members of the family. In turn, these increased commitments negatively affect family members, especially parents. It has been established that families caring for children with complex health conditions report high levels of stress, distress, emotional problems, and even depression, as well as diminished rates of overall quality of life than parents of typically functioning children (Gupta 2007; Brehaut, Kohen et al. 2009; Hsieh, Huang et al. 2009; Lach, Kohen et al. 2009; Miodrag and Hodapp 2010). For many, these elevated levels are rooted in the extensive caregiving “burden”, namely time, money, employment constraints, and commitment required to care for these children. The existing limited state of knowledge suggests that little is known about the particular stressors that might be experienced by families caring for CCHC and even less is known about the combination of stressors experienced by parents caring for CCHC. Furthermore, the relationship between the child specific health condition, the type of stressors involved, and the children/parental characteristics remains unclear.

The goal of this study is to understand and to increase the knowledge of how caring for CCHC impacts the stress placed on families in Ohio. More specifically, our aim is first to identify and profile CCHC and non-CCHC and their families and describe any trends between 2008 and 2010. Second, we want to examine the differential impact of caring for a child with a specific complex health condition on families. That is, determine if families caring for children with a developmental, behavioral, or emotional condition have the same level of financial, economic, and psychological stress, or mental health needs as those caring for children with functional limitations (traditionally associated with physical disability). Our last goal is to distinguish distinct groups (classes) of families that are related to the pattern of responses for the financial, economic, and psychological stresses they experience.

It is well known that children (and parents) covered by Medicaid have a different profile compared to children covered by job-based insurance (Goudie, Fairbrother et al. 2009; Goudie, Fairbrother et al. 2010). This report also devotes a section to comparing the CCHC population covered by Medicaid and job-based insurance to determine if there are specific policy recommendations that can be crafted by insurance status.

Finally, we present a thorough policy discussion guided by a policy logic model. The model inputs are defined as the physical context, comparison groups, and the resources to be utilized. Hypothesis-based theory is presented to identify the problem and outline beliefs about the problem. The necessary actions needed to test and validate the hypotheses (statistical profile and multivariable analysis) are outlined. Outputs are in the form of a report containing results of the actions taken and findings. Expected outcomes are short, medium, and long-term programs that can be put in place to address implications of the study findings.

## 2. Methodology

### Data Source

We use data from the 2010 and 2008 Ohio Family Health Surveys (OFHS) to generate findings in this report. The Ohio Family Health Survey is designed to obtain statewide, regional and some county level data on health insurance coverage, health status, health risk behaviors, access to care, health care utilization, health care costs, and unmet health needs (Duffy and Muzzy 2008). The emphasis for the 2010 survey is on the level of economic stress on Ohio families and the impact on Ohio’s health system and indicators of health. The 2010 OFHS was conducted in approximately 5,200 Ohio households. One child, 0 to 17 years of age were surveyed in 1,998 of these households. In households with more than one child, one was randomly selected to participate in the survey. The 2008 Ohio Family Health Survey was more extensive and included surveys of 50,000 Ohio residents including approximately 13,000 children. Both surveys used stratified random digit dial survey from a list-assisted sampling frame that sampled respondents using random digit dialing computer assisted telephone interviewing (CATI) methods. Separate cell phone sample ensured good representation of younger people more often reached via cell phones.

### Constructed Variables

Children with Complex Health Conditions (CCHC): is the main variable of interest. It is compiled from the children with special health care needs screening tool (CSHCN Screener©). To qualify as having special health care needs, the

following criteria must be met: The child currently experiences a specific consequence; the consequence is due to a medical or other health condition; the duration or expected duration of the condition is 12 months or longer. The first part of each screener question asks whether a child experiences one of five different health consequences: 1) use or need of prescription medication; 2) above average use or need of medical, mental health or educational services; 3) functional limitations compared with others of same age; 4) use or need of specialized therapies (occupational, physical, and speech therapy, etc.); 5) treatment or counseling for emotional or developmental problems (Bethell, Read et al. 2002).

In our study, for a child to be qualified as a CCHC, a parent (for the purpose of this study we refer to all child proxy respondents as parents, who constitute the vast majority, but it is possible for a guardian or other adult to have responded for children) was required to respond Yes to “screening in” to one or both of the child having functional limitations or developmental, behavioral, or emotional problems. In multivariable analysis we distinguish CCHC by functional limitations, or developmental, behavioral or emotional problems. In the event a child “screens in” with both conditions, they will be assigned to the functional limitations (more complex) group.

### **Statistical Analysis**

The 2010 and 2008 OFHS data are analyzed using statistical procedures contained in SAS Enterprise Guide 4.2 that account for the population weighting scheme and stratification. All numbers cited in the body of the report that are not in tables or figures can be found in the cited Appendices. Significant differences between CCHC and non-CCHC subpopulations are made on the basis of a chi-square test of association using a significance level of  $\alpha = 0.05$ . Differences across survey year are concluded by non-overlapping 95% confidence intervals. Multivariable logistic regression models are used to determine statistical differences across CCHC and non-CCHC subpopulations as well as significant variables associated with families caring for CCHC. For the variables studied, and to address possible problems due to small sample sizes, we compute relative standard errors (RSE) by comparing the standard error with the actual estimate. For RSE equal to 30.0% or less, reported results have reasonable accuracy. However, as the RSE increases above this threshold, more caution needs to be taken when interpreting the results, as estimates with high RSE may not be stable.

To determine if there are distinct patterns of all aggregate stressors that impact parents caring for CCHC more than parents caring for non-CCHC we use latent class analysis. Latent class analysis will assign parents to discrete classes based on patterns of their responses to the financial, economic, and psychological stress indicators. Some parents will have no stress of any kind and are likely to be collectively represented in one latent class, whereas other parents will have many types of stress and will likely be represented in another latent class. How responses with a few or many stressors are assigned to one of these latent classes or form their own distinct middle latent class or latent classes of responses is the goal of latent class analysis. In the end, all parents will be assigned to one class only. We then identify the significant differences in characteristics that are associated with being assigned to one class compared to another. Parent caring for a CCHC or non-CCHC is our main predictor. This will answer the question of whether caring for a CCHC contributes to a pattern of aggregate stressors rather than looking at stressors individually. Latent class analysis is conducted using Mplus Version 6. All numbers in the latent class analysis incorporate population child weights.

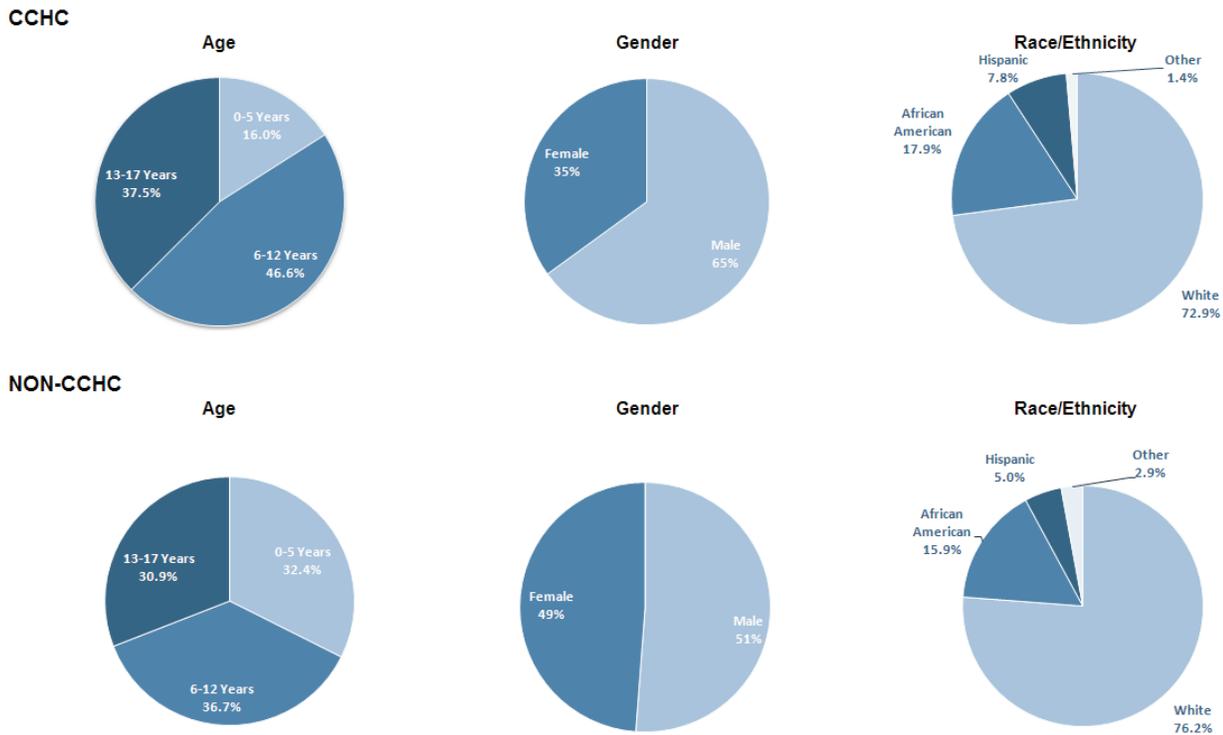
## **3. Profile of Children with Complex Health Conditions**

### **Demographics**

In 2010, an estimated 302,598 children under the age of 18 have a complex health condition in Ohio; representing 12.3% of all children in Ohio. Most CCHC get diagnosed after entering the school system. Almost one-half of all CCHC (46.6%) are between the ages of 6 and 12. Between 2008 and 2010 (see Table C1 in Appendix C) almost 3.0% more were diagnosed before the age of 6, up to 16.0% from 13.2%.

In 2010, noteworthy gender differences can be observed between CCHC and non-CCHC. CCHC tend to be more male (65.0%) compared to children without complex health conditions (51.2%). There are no significant difference in the distribution of race/ethnicity between CCHC and non-CCHC.

**Graph 1. Demographics of Children with and without CCHC**



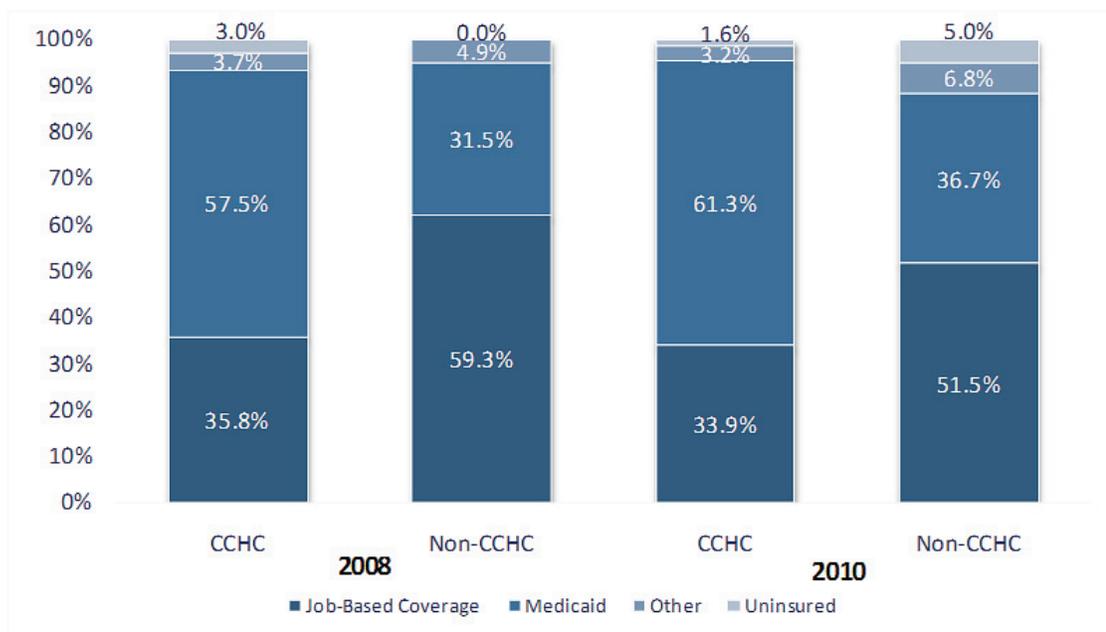
**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

**Health Insurance Coverage**

Based on estimates from the OFHS 2010, nearly one million (979,181) children 0-17 years of age were enrolled in the state Medicaid health insurance program. Of this total, an estimated 185,559 (19.0%) are CCHC, higher than the overall percentage of Ohio CCHC (12.3%). Slightly more than one-third (36.7%) of all non-CCHC are covered by Medicaid; however Medicaid covers 61.3% of all CCHC.

Further differences in job-based and Medicaid insured CCHC and non-CCHC is profiled in Section 8 of this report.

**Graph 2. Changes in Child Insurance Coverage, Ohio 2008 - 2010**

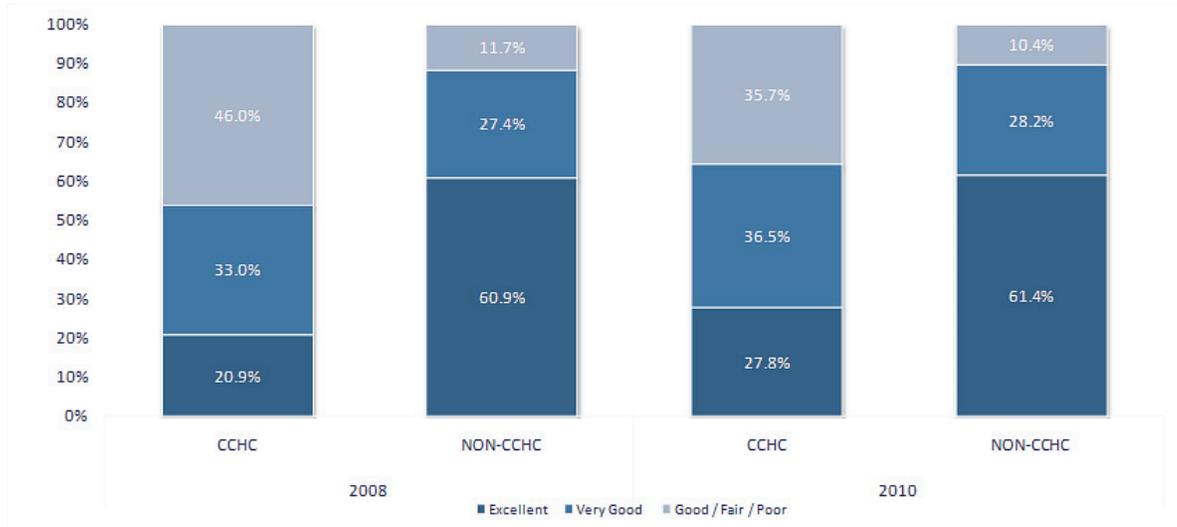


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

## Health Status of Children

More than one-third of all parents (35.7%) indicate that their child with a complex health condition has less than very good health status (Graph 3). This is an improvement from 46.0% of parents who reported similar less than very good health status in 2008, however small subcategory numbers do not allow us to conclude this difference is statistically significant.

**Graph 3. Changes in Child Health Status, Ohio 2008 - 2010**



**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

## 4. Profile of Parents Caring For Children With Complex Health Conditions

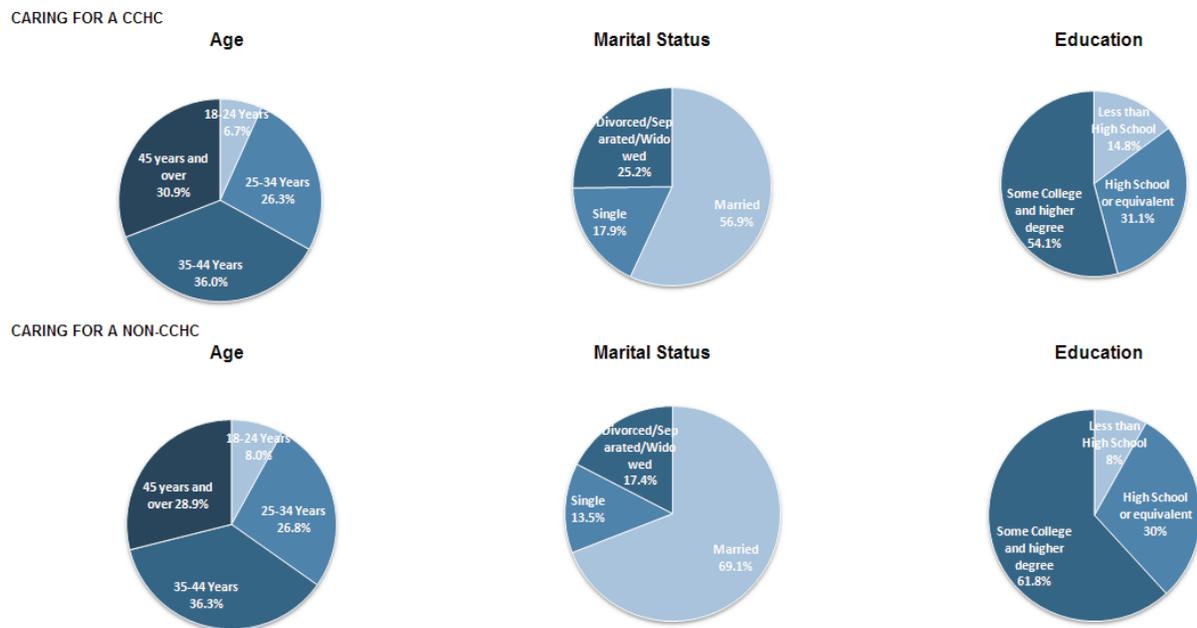
### Socio-Demographics

The age distribution for parents caring for CCHC and those caring for non-CCHC is similar. However, differences exist in the marital and education status between parents caring for CCHC and non-CCHC. The proportion of divorced/separated/widowed parents caring for CCHC is higher than it is for parents of children without complex health conditions (25.2% vs. 17.4%). Compared to families caring for non-CCHC, parents caring for CCHC tend to be less educated: 54.1% vs. 61.8% have at least some college education, and 14.8% vs. 8.1% have less than a high school education (Graph 4).

### Health Status of Parents

Parents caring for non-CCHC report better health status than parents caring for CCHC. Almost six out of ten (56.8%) indicate they have excellent or very good health compared to less than four out of ten (37.4%) who care for CCHC (Table D1 in Appendix D).

**Graph 4. Socio-demographics Characteristics of Parents Caring for CCHC and non-CCHC**



**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

### Changes in Income Dynamics Since 2008

In 2010, nearly one-half of all Ohioan families (46.4% - up from 36.4% in 2008) caring for a CCHC lived at or below the Federal Poverty Level (FPL)<sup>a</sup>, a 27.5% increase since 2008. In comparison, almost one-third of families (30.3% - up from 21.4% in 2008) caring for non-CCHC were at, or below the FPL in 2010, an increase of 41.6% since 2008. Ironically, the percentage of parents caring for CCHC earning more than 300% of FPL increased between 2008 to 2010, from 22.9% to 26.7% while the percentage of parents caring for non-CCHC earning more than 300% of FPL decreases between 2008 to 2010, from 39.8% to 31.2% (Table D1, Appendix D).

## 5. Financial, Economic, and Psychological Stress

Caring for a CCHC usually involves additional time, commitments, coordinating and providing care, and attending health care visits. In many instances this requires a parent to diminish the number of hours available for work or forgo working completely. Time to pursue higher education in order to attempt to secure higher paying employment can also be compromised. Even for parents caring for CCHC who remain full-time in the labor force, they earn less, on average, than parents caring for non-CCHC. So regardless, parents of CCHC are more prone to financial and economic stress (Goudie, Fairbrother et al. 2010).

Previous studies have found clear associations between family socioeconomic conditions and measures of children’s intellectual, behavioral, and emotional development (Emerson and Hatton 2007). For example, low-income parents may be more depressed or stressed and as a consequence they may have poorer parenting practices and become less responsive to a child’s needs. Moreover, children from families with lower socio-economic status are at greater risk than more economically-advantaged children for poor cognitive, behavioral and health outcomes (Emerson 2004).

The inability to pay bills or obtain basic necessities is likely to aggravate living conditions of families living in, or teetering on the brink of poverty. Families caring for a CCHC may be at greater risk of persistent financial and economic stress, and consistent psychological distress. Therefore, understanding the relationship between caring for CCHC and the family financial, economic and psychological stressors is essential.

<sup>a</sup> FPL - \$18,310 annual income for a family of 3, 2009 dollars and \$17,170 annual income for a family of 3, 2007 dollars. OFHS earnings are based on the year prior to the survey.

## Financial Stressors

In the OFHS 2010, all financial stressor questions are predicated on having a problem paying or the inability to pay for medical bills. For those indicating this was at least a problem, additional financial stress questions include: unable to pay for basic necessities, used up most of personal savings, incurred large credit card debt, and had to declare bankruptcy. In both 2008 and 2010, nearly one-half of all parents caring for CCHC indicated that they had problems paying or were unable to pay for medical bills (49.8% and 48.7%, respectively).

The percentages affected by financial stress in numbers presented in Table 1 are based on overall population numbers (i.e. including those that did not have problems paying or unable to pay for medical bills). It is important to note that the response to other financial stressor questions is a conservative representation of the actual rate. This is because parents could have experienced the particular financial stress but had responded No to having a problem or being unable to pay medical bills. More than one in four parents (27.8%) who care for a CCHC indicated that they had a problem paying for basic necessities. This is more than twice the rate (12.6%) of parents caring for non-CCHC who experienced the same problem. More than one in three (35.2%) parents caring for CCHC had used up most of their personal savings compared to 21.8% of parents caring for non-CCHC.

**Table 1. Financial Stressors by CCHC Status (n, %, significant difference)**

	2010				DIFFERENCE †
	CCHC		Non-CCHC		
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	
<b>Children Aged 0-17 Years</b>	302,598	12.3%	2,164,600	87.7%	
<b>FINANCIAL STRESSORS *</b>					
<b>Problems paying or unable to pay for medical bills</b>	146,318	48.7% 40.2-57.1	761,768	35.2% 32.3-38.2	Yes
<b>Unable to pay for basic necessities</b>	83,608	27.8% 19.8-35.8	272,949	12.6% 10.5-14.8	Yes
<b>Used up most of personal savings</b>	105,750	35.2% 26.9-43.4	469,598	21.8% 19.2-24.4	Yes
<b>Had large credit card debt or had to take a loan of any kind</b>	38,710	12.9% 7.4-18.3	224,166	10.4% 8.5-12.2	No
<b>Had to declare bankruptcy</b>	20,531	6.8% 2.5-11.1	103,593	4.8% 3.4-6.2	No

\* Results are shown for those who answered "Yes"

† statistically different at p<0.05

**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

## Economic Stressors

Economic stressors are defined as parents' inability to pay rent, mortgage or utility bills, and/or received help to cover these expenses. Children having to move in with others and having less than 6 months money reserves to cover expenses also indicate parental economic stress. Table 2 shows that a wide gap separates parents caring for CCHC and non-CCHC who indicate having problems paying rent, mortgage or utility bills (44.4% vs. 27.1%). Almost twice the proportion of parents caring for CCHC require financial help to pay for rent, mortgage or utility bill; 16.2% compared to 8.5% for parent who care for non-CCHC. Furthermore, of the parents of CCHC incapable of paying their rent, mortgage or utility bills, the vast majority (84.9%) do not have sufficient savings that would enable them to cover their expenses beyond 6 months.

The effect of economic stress is directly felt by many children. One in ten CCHC (10.1%) residing in households with economic stress are forced to move in with others due to the inability to pay bills. This is twice the rate experienced by non-CCHC (5.2%).

**Table 2. Economic Stressors by CCHC Status (n, %, significant difference)**

	2010				DIFFERENCE †
	CCHC		Non-CCHC		
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	
<b>Children Aged 0-17 Years</b>	302,598	12.3%	2,164,600	87.7%	
<b>ECONOMIC STRESSORS*</b>					
<b>Problems paying rent, mortgage, or utility bill</b>	134,209	44.4% 35.9-52.8	585,029	27.1% 24.2-30.0	Yes
<b>Received financial help to pay for rent, mortgage or utility bill</b>	49,121	16.2% 9.7-22.7	183,049	8.5% 6.6-10.3	Yes
<b>Children moved in with others due to inability to pay bills</b>	30,600	10.1% 4.5-15.7	112,569	5.2% 3.7-6.7	Yes
<b>Time savings will cover expenses (lesser than 6 months)</b>	256,132	84.9% 79.5-90.3	1,522,674	74.4% 71.7-77.0	Yes

\* Results are shown for those who answered "Yes"

† statistically different at p<0.05

**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

## Psychological Stressors

Parental psychological stressors are determined by the 6 Kessler items (K-6) on the psychological distress scale. K-6 is a screening instrument for non-specific psychological distress which contains six questions measuring symptoms over a one month period. It provides estimates of mental health disorders in a population, such as mood and anxiety.

Table 3 presents results for K-6 questions where parents have answered "all or most of the time" to experiencing the psychological condition in the prior 30 days. Significant differences are noted between parents caring for CCHC and non-CCHC. With the exception of "felt everything is an effort in the last 30 days", parents caring for CCHC are more than twice as likely, compared to parents caring for non-CCHC, to report experiencing the other five K-6 items all or most of the time in the past 30 days.

Responses to each of the Kessler psychological stressor items can be aggregated to form a measure of overall depression. A "none of the time" response is given a value of 0 and values increase by 1 unit as the duration of the psychological stressor impacts the respondent, through to a value of 4 for a response of "all of the time." Composite scores greater than 12 over the six K-6 items is an indication of serious depression. A total of 52,271 parents (17.3%) caring for CCHC are seriously depressed. This compares to 7.4% of parents who care for non-CCHC.

**Table 3. Psychological Stressors by CCHC Status (n, %, significant difference)**

	2010				DIFFERENCE †
	CCHC		Non-CCHC		
	Number of Children	Percent of Children	Number of Children	Percent of Children	
<b>Children Aged 0-17 Years</b>	302,598	12.3%	2,164,600	87.7%	
<b>PSYCHOLOGICAL STRESSORS*</b>					
<b>Feeling sad in last 30 days</b>	44,156	14.7%	146,329	6.8%	Yes
<b>Feeling nervous in last 30 days</b>	49,538	16.4%	174,148	8.1%	Yes
<b>Feel restless or fidgety in last 30 days</b>	71,383	23.7%	201,799	9.3%	Yes
<b>Feel hopeless in last 30 days</b>	32,702	10.9%	117,255	5.4%	Yes
<b>Feel everything is an effort in last 30 days</b>	69,606	23.0%	333,514	15.6%	Yes
<b>Feel worthless in last 30 days</b>	22,178	7.4%	70,078	3.2%	Yes
<b>‡ Kessler 6 ≤12</b>	250,327	82.7%	2,004,085	92.6%	Yes
<b>‡ Kessler 6 &gt;12</b>	52,271	17.3%	160,515	7.4%	Yes

\* Results are shown for those who answered "All or most of the time"

† statistically different at p<0.05

‡ K6 scale was recoded from 0 to 4 so that "all of the time" was coded 4, "most of the time" 3, "some of the time" 2, "a little of the time" 1, and "none of the time" 0. Summing across the transformed responses resulted in a score with a range from 0 to 24. Respondents with a total score of 13 or greater are classified as having past month Serious Psychological Distress.

**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

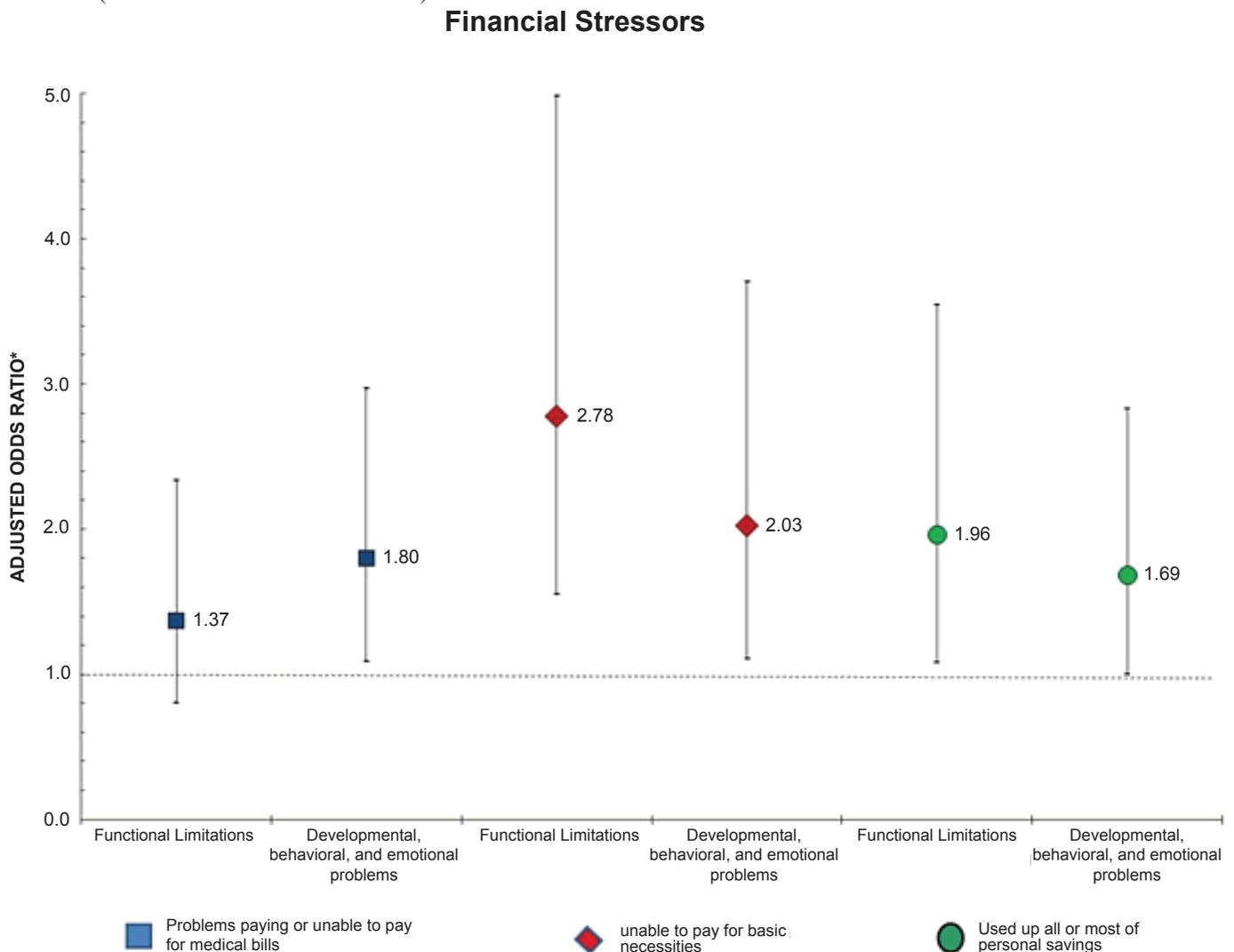
## 6. Examining the Likelihood That Caring For a CCHC Is Associated With Parental Stressors

### Overview

In the previous section, we identified differences across financial, economic, and psychological stress indicators between parents caring for CCHC and those caring for non-CCHC. These comparisons did not take into account underlying characteristics of the parents and children. This section will adjust for these characteristics so that a detected difference in stress levels between parent groups will most likely be associated with CCHC status. That is, the likelihood that caring for a CCHC independently predicts parental stress by controlling for the potential influence of parent and child characteristics. The main predictor variable is CCHC status. In the previous section we also compared children with functional limitations and developmental, behavioral, and emotional problems together (CCHC). In this section we will disaggregate CCHC into these two sets of conditions and compare both groups to non-CCHC. Separate multivariable logistic regression models are fitted with each of the stressors as a dichotomous dependent variable and we are modeling the probability that a parent experiences the stress. All models are adjusted for child's age group, gender, race/ethnicity, and insurance status, as well as parent's age group, marital status, education status, and region of residence.

In 2010, an estimated 161,894 Ohioan CCHC aged 0-17 years have developmental, behavioral, or emotional problems; 40,722 have functional limitations; and 86,347 have both health conditions. With very few exceptions, parents caring for children with functional limitations have higher levels of stress of all kinds compared to parents who care for children with developmental, behavioral or emotional problems (see Tables G1, G2, G3 in Appendix G).

**Graph 5. Association of Caring for a CCHC with Financial Stress**  
Odds Ratio (95% Confidence Interval Bars)



\* Adjusted for child's health insurance status, age, gender, race/ethnicity, and parents' age, marital status, education status, and county/region. Significant Odds Ratios are in bold and italic.

**Note:** The reference group for adjusted odds ratios is parents caring for non-CCHC.

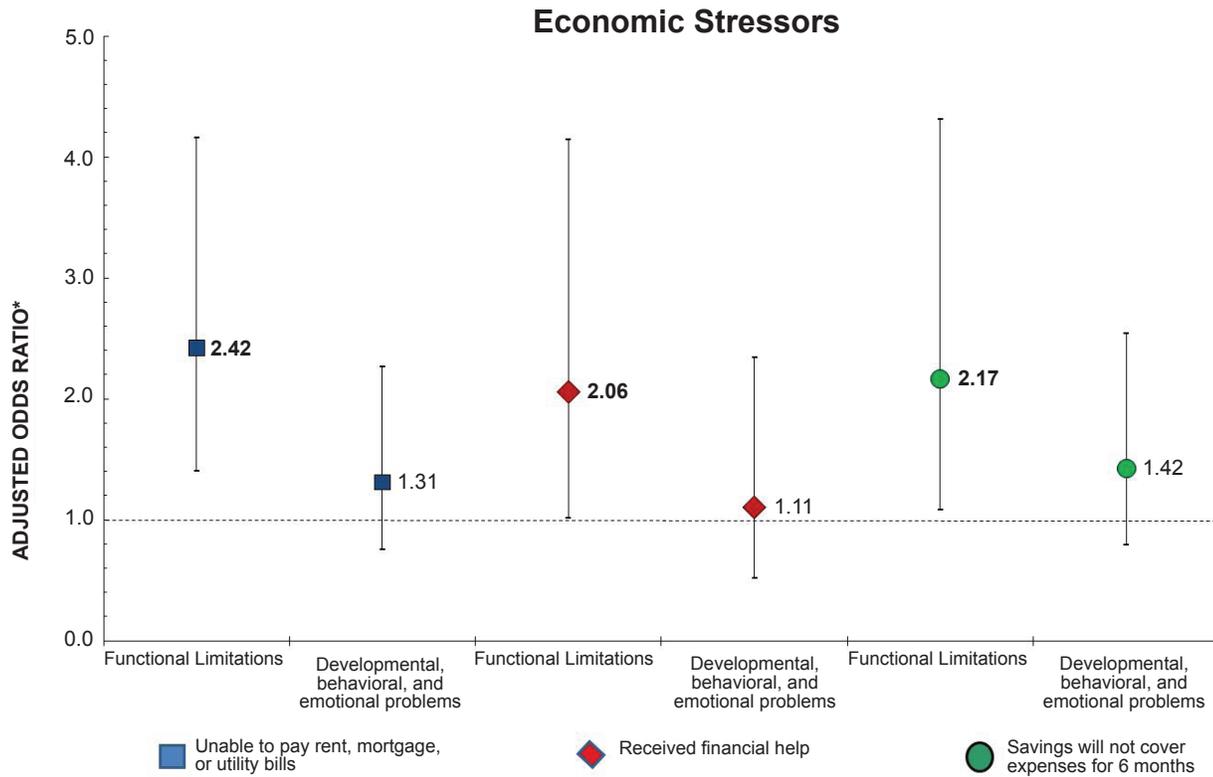
**Source:** OFHS, 2010

## Economic Stress

Compared to parents of non-CCHC, those caring for children with functional limitations were 2.4 times as likely to be unable to pay rent, mortgage, or utility bills, 2.1 times as likely to have received financial help to pay for rent, mortgage or utility bills and 2.2 times as likely to not have at least a 6 month monetary reserve to cover expenses. Of note is that parents caring for children with developmental, behavioral or emotional problems alone do not differ significantly across any economic stress indicators compared to parents caring for non-CCHC (Graph 6).

**Graph 6. Association of Caring for a CCHC on Economic Stress**

Odds Ratio (95% Confidence Interval Bars)



\* Adjusted for child’s health insurance status, age, gender, race/ethnicity, and parents’ age, marital status, education status, and county/region. Significant Odds Ratios are in bold and italic.

**Note:** The reference group for adjusted odds ratios is parents caring for non-CCHC.

**Source:** OFHS, 2010

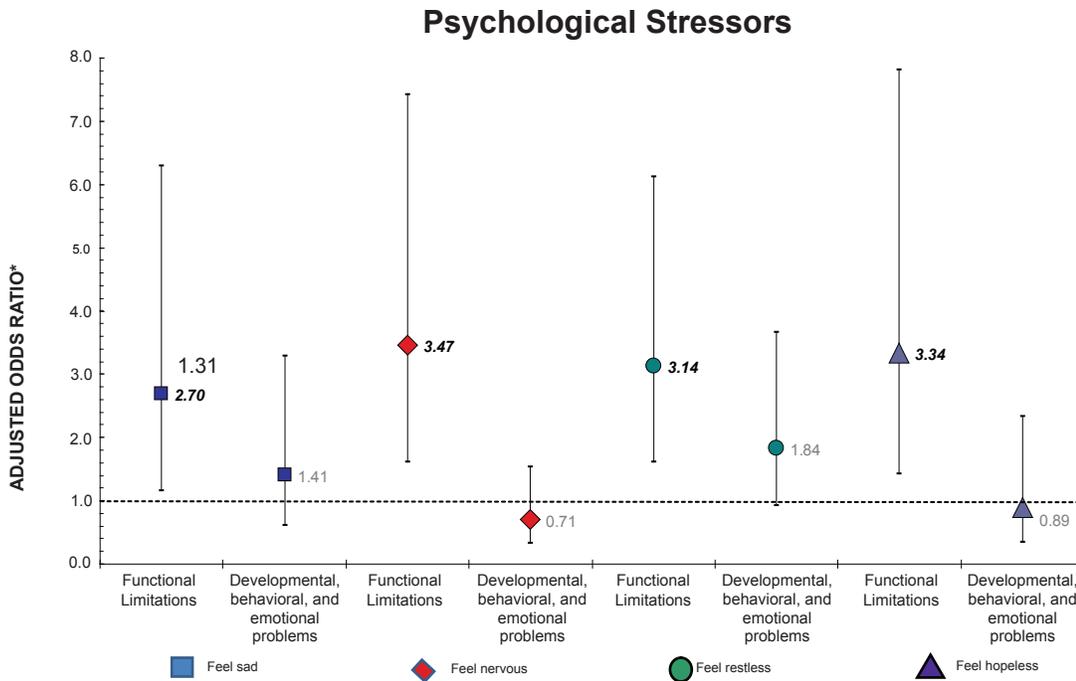
## Financial Stress

Compared to parents of non-CCHC, those caring for children with functional limitations were 2.8 times as likely to be unable to pay for basic necessities and 2.0 times as likely to have used up most of their personal savings. Also, compared to parents of non-CCHC, those caring for children with developmental, behavioral or emotional problems were 1.8 times as likely to have problems or were unable to pay for medical bills, 2.0 times as likely to be unable to pay for basic necessities, and 1.7 times as likely to have used up most of their personal savings (Graph 5).

## Psychological Stress

Compared to parents of non-CCHC, those caring for children with functional limitations were 2.7 times to always or most of the time feel sad, 3.5 times to always or most of the time feel nervous, 3.1 times to always or most of the time feel restless, and 3.3 times to always or most of the time feel hopeless (Graph 7). As in the case with economic stress indicators parents caring for children with developmental, behavioral or emotional problems alone do not differ significantly across any psychological stress indicators compared to parents caring for non-CCHC.

**Graph 7. Association of Caring for a CCHC on Psychological Stress**  
Odds Ratio (95% Confidence Interval Bars)



\* Adjusted for child's health insurance status, age, gender, race/ethnicity, and parents' age, marital status, education status, and county/region. Significant Odds Ratios are in bold and italic.

**Note:** The reference group for adjusted odds ratios is parents caring for non-CCHC.  
**Source:** OFHS, 2010

## Depression

Compared to parents caring for non-CCHC, those caring for a child with functional limitations are 4.1 times as likely to be classified as having serious depression (see Table E16 in Appendix E). The incidence of serious depression is not different between parents caring for non-CCHC and those caring for a child with developmental, behavioral, or emotional problems alone.

## The Effect of Caring for a CCHC on Patterns of Stressors

In this section we have identified individual stressors that appear to be independently triggered by caring for children with functional limitations or children with developmental, behavioral, or emotional problems alone. For the most part, each of these conditions impacts stress on parents differently. Using a latent class analysis we determine if particular patterns of stresses are triggered simultaneously by caring for CCHC (due to statistical power limitations we do not distinguish between children with functional limitations and those with developmental, behavioral, or emotional problems alone).

Table 4 presents a response distribution to having or not having a financial, economic, or psychological stressor. These numbers are for all 1,818 parent responses (CCHC and non-CCHC) and differ from the overall 1,998 child responses due to missing values in stressor responses or the independent variables that are used to control for CCHC and non-CCHC effect when responses across latent classes are compared.

**Table 4. Response Distribution to Experiencing a Financial, Economic, or Psychological Stressor**

Stressor	Response	
	Yes	No
<b>Financial</b>		
1. Problems paying or unable to pay for medical bills	37.0	63.0
2. Unable to pay for basic necessities	14.5	85.5
3. Used up most of personal savings	23.5	76.5
4. Had large credit card debt or had to take out loan to cover bills	10.7	89.3
5. Has to declare bankruptcy	5.0	95.0
<b>Economic</b>		
6. Problems paying rent, mortgage, or utility bill	29.3	70.7
7. Received financial help to pay rent, mortgage, or utility bill	9.5	90.5
8. Children moved in with others due to inability to pay bills	5.8	94.2
9. Savings will cover paying bills for 6 months or more	24.3	75.7
<b>Psychological (responded feeling this way all or most of the time in the last 30 days)</b>		
10. Sad	7.8	92.2
11. Nervous	9.1	90.9
12. Restless or fidgety	11.1	88.9
13. Hopeless	6.1	93.9
14. Everything is an effort	16.5	83.5
15. Worthless	3.8	96.2

Note: Percentages represent weighted population estimates. Unweighted N=1,818.

Source: OFHS, 2010

Latent class analysis identifies three latent classes where patterns of responses within each cluster. The probability of responding Yes to having a stressor is calculated within each latent class and the results are presented in Table 5. All parents are assigned to a one latent class only.

**Table 5. Probability of Responding Yes Given Respondents are Assigned to Latent Class**

Stressor	Yes	Latent Class		
		1	2	3
<b>Financial</b>				
1. Problems paying or unable to pay for medical bills	37.0	10.2%	24.9%	64.9%
2. Unable to pay for basic necessities	14.5	67.0	100.0	7.5
3. Used up most of personal savings	23.5	42.2	40.2	0.0
4. Had large credit card debt or had to take out loan to cover bills	10.7	49.7	73.1	0.0
5. Has to declare bankruptcy	5.0	19.0	34.6	0.0
<b>Economic</b>				
6. Problems paying rent, mortgage, or utility bill	29.3	13.3	14.6	0.0
7. Received financial help to pay rent, mortgage, or utility bill	9.5	66.1	53.7	13.8
8. Children moved in with others due to inability to pay bills	5.8	20.9	16.9	4.7
9. Savings will cover paying bills for 6 months or more	24.3	24.7	7.7	2.1
<b>Psychological (responded feeling this way all or most of the time in the last 30 days)</b>				
10. Sad	7.8	8.3	10.5	32.3
11. Nervous	9.1	60.4	1.3	1.9
12. Restless or fidgety	11.1	69.1	3.4	1.7
13. Hopeless	6.1	71.7	8.0	2.7
14. Everything is an effort	16.5	52.1	2.9	0.0
15. Worthless	3.8	74.5	14.4	8.1
		3.8	0.2	0.0

Source: OFHS, 2010

Parents assigned to Latent Class 1 (10.2% of all parents) are much as likely to have responded Yes to having stress across multiple financial, economic, and psychological stressors. Parents assigned to Latent Class 2 (24.9% of all parents) have stress across all financial and most economic stressors, but respond infrequently to experiencing a psychological stressor. The majority of parents are assigned to Latent Class 3 (64.9% of all parents). This latent class is synonymous with very low levels of stress exhibited across all financial, economic, and psychological stressors.

**Table 6. Adjusted odds ratio (95% confidence interval) for Independent Variables by Latent Class Assignment Comparison**

Independent Variable	Category	Latent Class Comparison		
		1 v 2	1 v 3	2 v 3
Caring for a Child with Complex Health Conditions	No			
	Yes	1.73 (0.84, 3.55)	<b>3.41 (1.75, 6.66)</b>	<b>1.98 (1.23, 3.19)</b>
Child Age	0-5		reference	
	6-12	1.17 (0.60, 2.29)	0.96 (0.51, 1.79)	0.81 (0.54, 1.23)
	13-17	0.86 (0.41, 1.82)	0.89 (0.43, 1.80)	1.03 (0.67, 1.58)
Gender	Male		reference	
	Female	0.94 (0.55, 1.63)	0.93 (0.56, 1.54)	0.98 (0.72, 1.35)
Race/Ethnicity	White		reference	
	Black	0.87 (0.40, 1.92)	0.76 (0.36, 1.58)	0.87 (0.53, 1.44)
	Hispanic	0.87 (0.25, 3.03)	0.48 (0.17, 1.39)	0.56 (0.26, 1.19)
	Other	---	---	0.20 (0.04, 1.02)
Insurance Status	Job-Based		reference	
	Medicaid	1.51 (0.63, 3.67)	2.18 (0.97, 4.90)	1.44 (0.94, 2.19)
	Other	2.53 (0.90, 7.18)	<b>2.82 (1.09, 7.30)</b>	1.11 (0.65, 1.92)
	Uninsured	2.87 (0.87, 9.45)	<b>9.27 (3.05, 28.23)</b>	<b>3.23 (1.51, 6.92)</b>
Parent's Age	18-24		reference	
	25-34	1.10 (0.30, 3.96)	1.47 (0.44, 4.89)	1.34 (0.66, 2.69)
	35-44	1.80 (0.51, 6.30)	<b>3.35 (1.05, 10.73)</b>	1.86 (0.91, 3.79)
	45 +	1.76 (0.49, 6.24)	2.94 (0.92, 9.45)	1.68 (0.80, 3.53)
Parent's Education	< High School		reference	
	High School or GED	0.60 (0.23, 1.55)	1.70 (0.76, 3.79)	<b>2.82 (1.41, 5.64)</b>
	At Least Some College	0.53 (0.21, 1.33)	1.33 (0.61, 2.90)	<b>2.49 (1.24, 4.98)</b>
Parent's Marital Status	Married/Cohabiting		reference	
	Single	2.42 (0.98, 5.99)	1.73 (0.76, 3.79)	0.72 (0.40, 1.29)
	Divorced/Separated	1.02 (0.52, 2.01)	1.57 (0.85, 2.91)	<b>1.54 (1.02, 2.32)</b>
Poverty Level	<100%		reference	
	101 - 200%	<b>0.28 (0.14, 0.56)</b>	<b>0.50 (0.25, 0.98)</b>	<b>1.83 (1.18, 2.84)</b>
	201 - 300%	<b>0.22 (0.08, 0.61)</b>	<b>0.18 (0.07, 0.46)</b>	0.81 (0.48, 1.36)
	301% +	<b>0.28 (0.09, 0.87)</b>	<b>0.08 (0.03, 0.23)</b>	<b>0.29 (0.17, 0.49)</b>

Note: Odds ratios depicted in bold italics are significant at  $\alpha=0.05$ .

Source: OFHS, 2010

Table 6 demonstrates that after adjusting for other variables that may also influence the stress levels in parents, and compared to parents caring for non-CCHC, those caring for CCHC are 3.4 times as likely to be assigned to Latent Class 1 (all financial, economic, and psychological stressors) over Latent Class 3 (no stressors). Compared to parents caring for non-CCHC, those caring for CCHC are 2.0 times as likely to be assigned to Latent Class 2 (financial and economic stressors) over Latent Class 3 (no stressors). Caring for a CCHC is associated with differential levels of stress and demonstrates that parents caring for CCHC are as likely to experience many types of stressors simultaneously.

## 7. Examining the Relationship Between Mental Health Needs And CCHC Status

### Overview

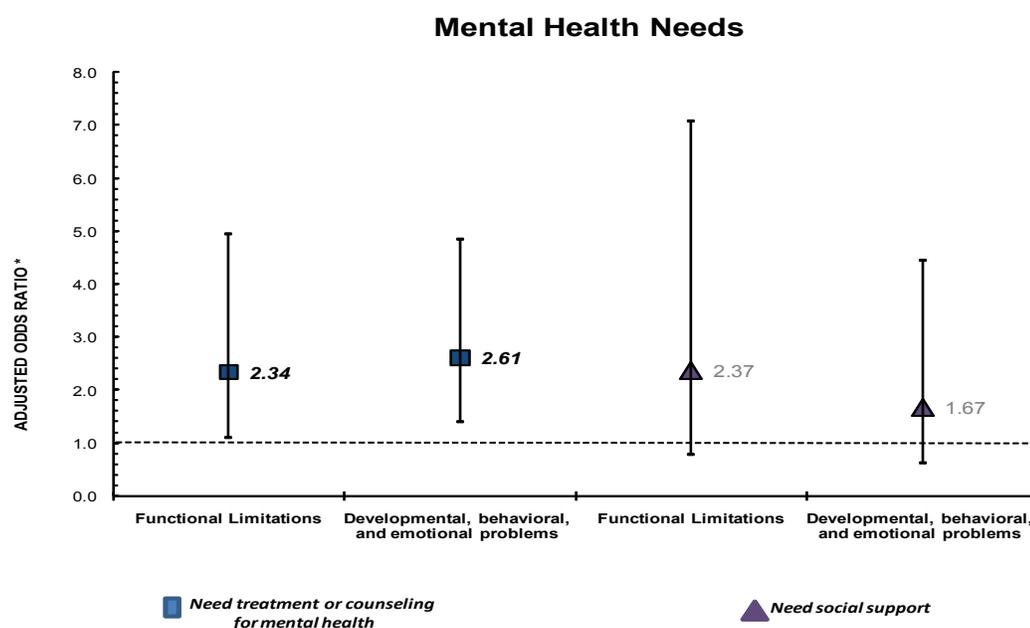
For parents, caring for a CCHC requires extra time commitments and responsibilities that are associated with greater stress levels of many types. Besides financial and economic stress, the family's coping resources and the formal and informal social supports it can muster can influence the level of parenting stress (Hewitt-Taylor 2005; Gupta 2007). Stress endured over time may jeopardize parents' mental health.

In this section, we assess the independent effect of caring for a CCHC (functional limitations and/or developmental, behavioral, or emotional problems) on the parent's mental health needs compared to the mental health needs of parents who care for a non-CCHC. Mental health needs indicators include the need for treatment or counseling for mental health and the need of social and emotional support.

After controlling for child and parent characteristics, parents of children with functional limitations are 2.3 times as likely

to need treatment or counseling for mental health, substance abuse or an emotional problem. Similarly, parents who care for children with developmental, behavioral or emotional problems are 2.6 times as likely to need treatment or counseling for mental health, substance abuse or an emotional problem (Graph 8).

**Graph 8. Association of Caring for a CCHC on Mental Health Needs**  
Odds Ratio (95% Confidence Interval Bars)



\* Adjusted for child's health insurance status, age, gender, race/ethnicity, and parents' age, marital status, education status, and county/region. Significant Odds Ratios are in bold and italic.

**Note:** The reference group for adjusted odds ratios is parents caring for non-CCHC.

**Source:** OFHS, 2010

In the majority of the statistical models presented in Section 6 and this section, insurance status was a strong predictor of financial, economic, or psychological stressors. This highlights the need to profile children (and their parents) covered by job-based and Medicaid insurance separately. Differences across insurance types will identify challenges and opportunities for policy agendas.

## 8. Caring for Children with Complex Health Conditions: Implications for Medicaid in Ohio

### Overview

Medicaid is Ohio's single largest payer of health services; it covers almost one out of four children aged 0-19 years (Health Policy Institute of Ohio 2011). On December 2007, the unemployment rate in Ohio was 5.8% (Ohio Department of Job and Family Services 2008). Three years later the rate had increased 75% where nearly one in ten Ohioans (9.6%) in the labor market was unemployed (Ohio Department of Job and Family Services 2011). During this period, unstable job markets and lost jobs resulted in dramatic shifts in the demand for publicly-funded child health insurance (Medicaid). Since the start of this economic downturn, Medicaid enrollment has escalated to 17.8% nationwide, resulting in a record high of 50.3 million children enrolled as of June 2010 (The Kaiser Commission on Medicaid and the Uninsured 2011).

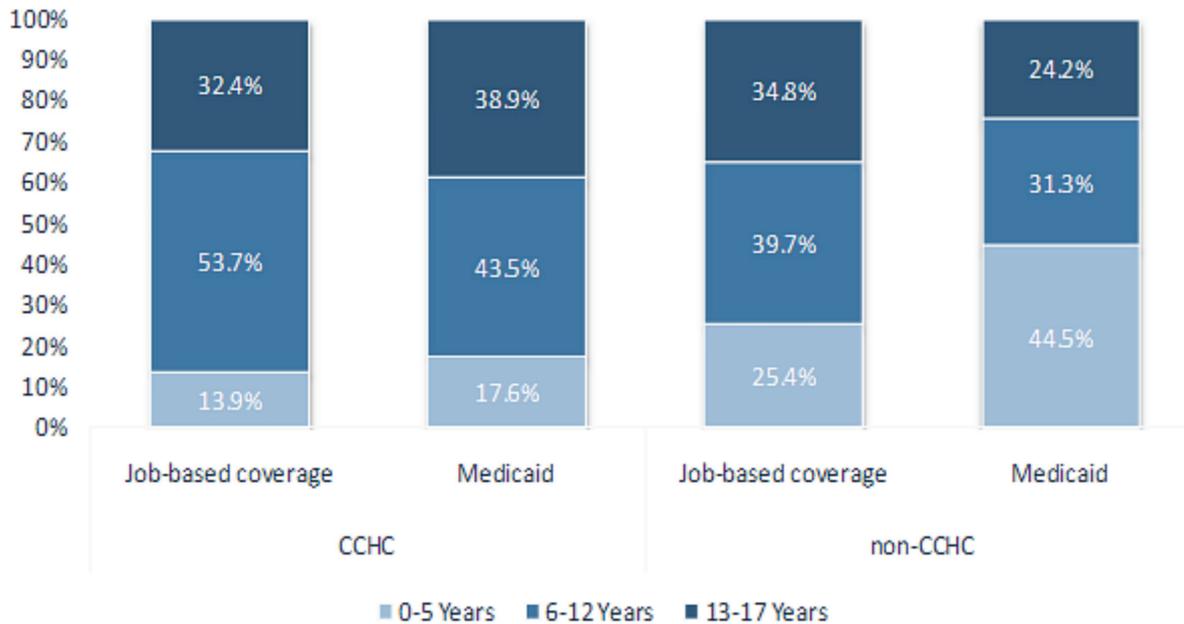
In Ohio, the proportion of working-age adults receiving coverage through employers has fallen in all income categories (Ohio Colleges of Medicine Government Resource Center 2010). Between 2008 and 2010, an estimated 212,777 fewer Ohioan children were covered with job-based coverage. More than one-half of these children account for the estimated increase of 110,747 children enrolled in Medicaid over the same period. This increase is not due to eligibility policy changes or population demographic shifts.

In Section 3, we outlined the increasing trend in Medicaid coverage, and the decreasing trend in employer-sponsored insurance coverage among CCHC and non-CCHC. In this section, we present a sub-profile of the CCHC and non-CCHC populations by the two major health insurance types (Job-Based and Medicaid).

## Child Insurance Status by Age and Race/Ethnicity

The age distribution of CCHC covered by Medicaid is significantly different than those covered by job-based insurance and the age distribution compared to non-CCHC is even more different. Within the CCHC population, Medicaid covers a higher percentage of children 13-17 years of age than job-based insurance (38.9% vs. 32.4%). This has implications in the type of services demanded and even policy-relevant issues like the promotion of transition of care to adult providers and aging out of Medicaid insurance coverage. Within children covered by Medicaid, 82.4% of CCHC are school-aged (6-17 years of age) compared to 55.5% of non-CCHC (Graph 9).

**Graph 9. Age Distribution of CCHC and Non-CCHC by Health Insurance Type**

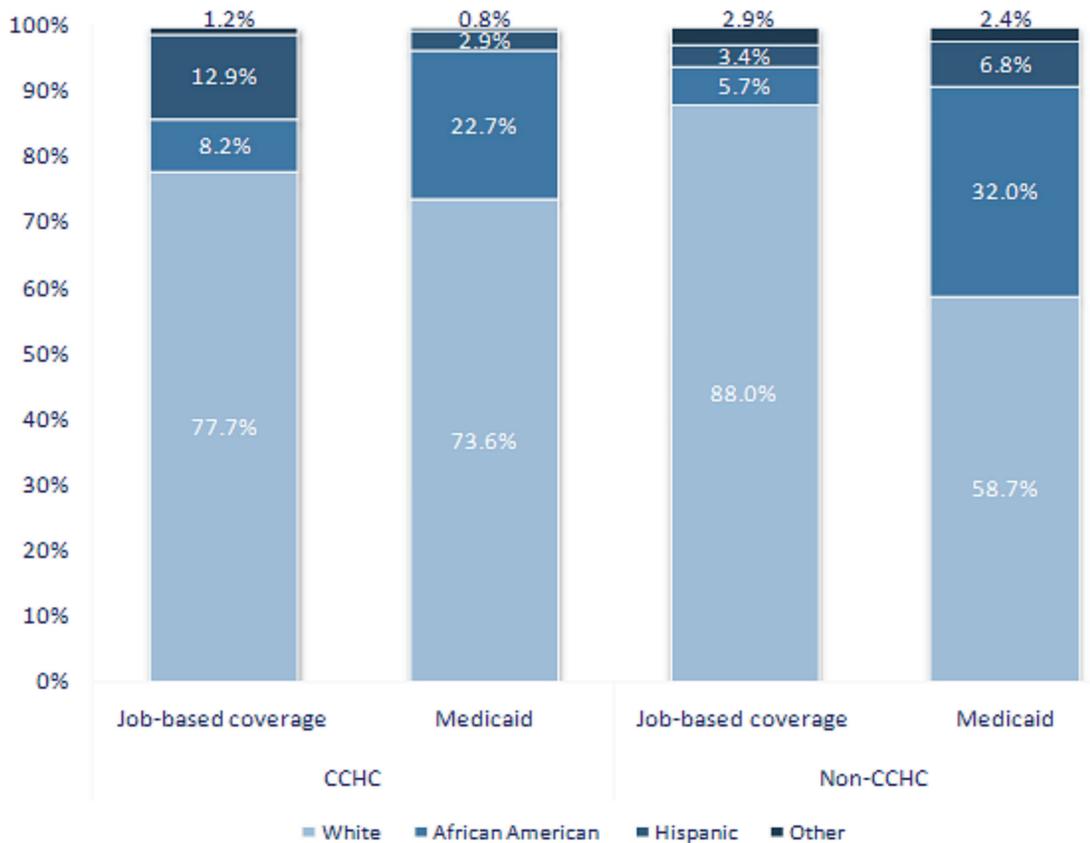


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

There are also differences in race/ethnicity distribution across CCHC and non-CCHC populations with job-based insurance and Medicaid coverage (Graph 10). Nearly one out of four CCHC (22.7%) covered by Medicaid is African American compared to only 8.2% with job-based insurance. This is an over-representative of the African American population percentage as a whole in Ohio, but is actually lower than the percentage of non-CCHC African Americans covered by Medicaid (32.0%). The high percentage of Hispanics with job-based insurance is an artifact of the low number of respondents in this population and the confidence intervals for these percentages are large (see Table F1 in Appendix F).

**Graph 10. Racial/Ethnic Distribution of CCHC and Non-CCHC by Health Insurance Type**

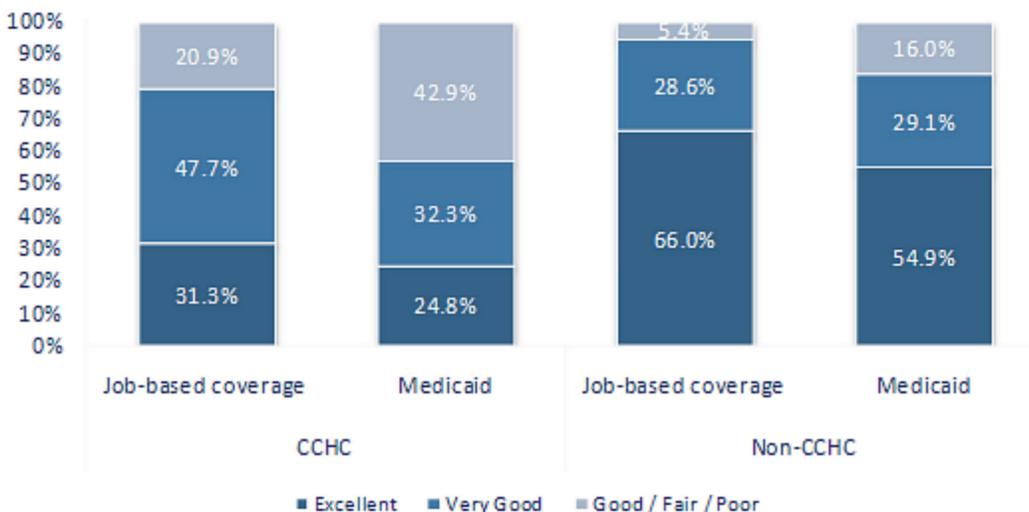


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

**Medicaid Covers Sicker Children Including CCHC**

Approximately four out of five CCHC (79.0%) covered by job-based insurance are described as having excellent or very good health status. For CCHC covered by Medicaid fewer than three out of five parents (57.1%) responded that their child with complex health conditions had the same health status. Graph 11 depicts the health status distribution by insurance and CCHC status. Even for non-CCHC, the Medicaid population have an approximately three times higher rate (at 16.0%) of responding to only good, fair, or poor health status compared to the non-CCHC population covered by job-based insurance (5.4%).

**Graph 11. Health Status Distribution of CCHC and non-CCHC by Health Insurance Type**

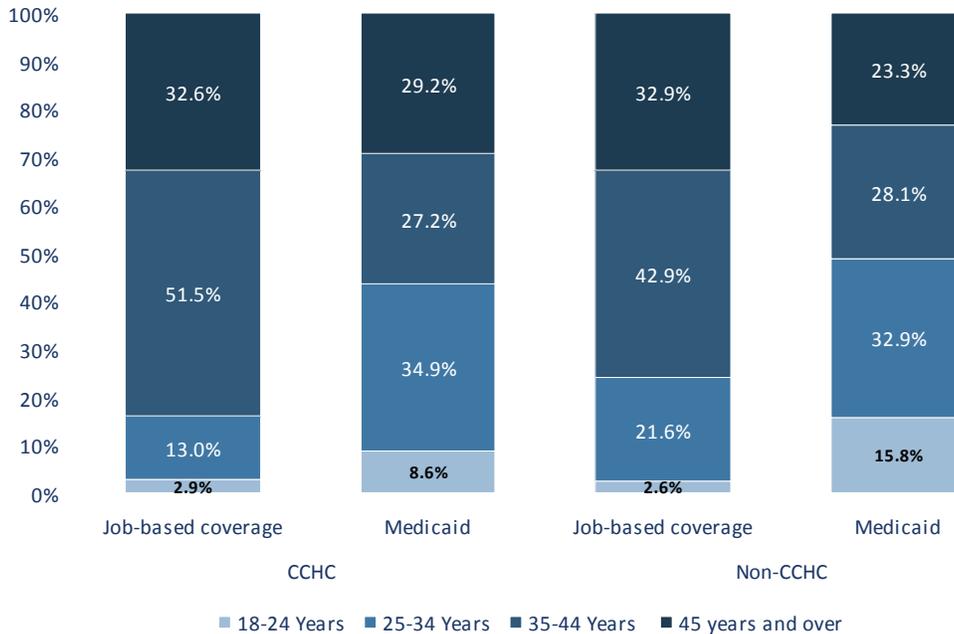


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

## Parents Characteristics Differ by Insurance Status of Children

As noticed previously, the age distribution for parents caring for CCHC and for those caring for non-CCHC is similar. However, an age group profile of parents caring for CCHC identifies differences across insurance status (Graph 12). There are a lower proportion of parents aged 34 years and younger with CCHC covered through job-based insurance than parents caring for CCHC covered under Medicaid (15.9% vs. 43.5%).

**Graph 12. Age Distribution of Parents Caring for CCHC and Non-CCHC by Health Insurance Type**

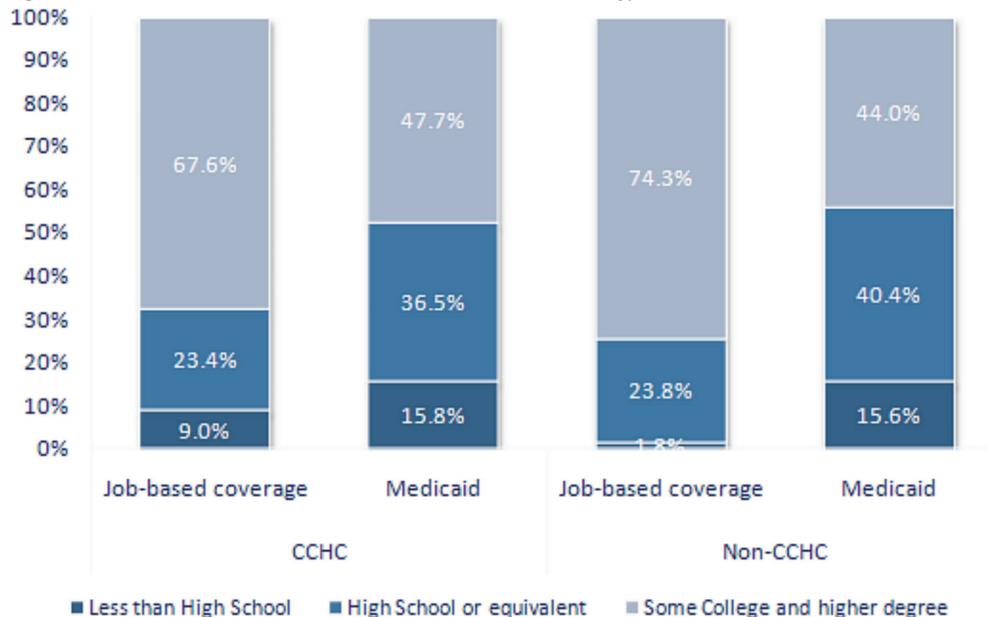


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

Previously we noticed that overall, compared to families caring for children who do not have complex health conditions, parents caring for CCHC tended to be less educated (Graph 4). However, when we stratify by health insurance coverage, a different picture emerges. Examining the education distribution of parents of CCHC vs. non-CCHC covered by job-based insurance, the gap in parental education has narrowed considerably. Differences in parental education distribution are more prominent between the type of insurance under which the child is covered (Job-based vs. Medicaid) than they are between the child health condition per se (i.e. CCHC vs. non-CCHC) (Graph 13).

**Graph 13. Education Distribution of Parents Caring for CCHC and Non-CCHC by Health Insurance Type**

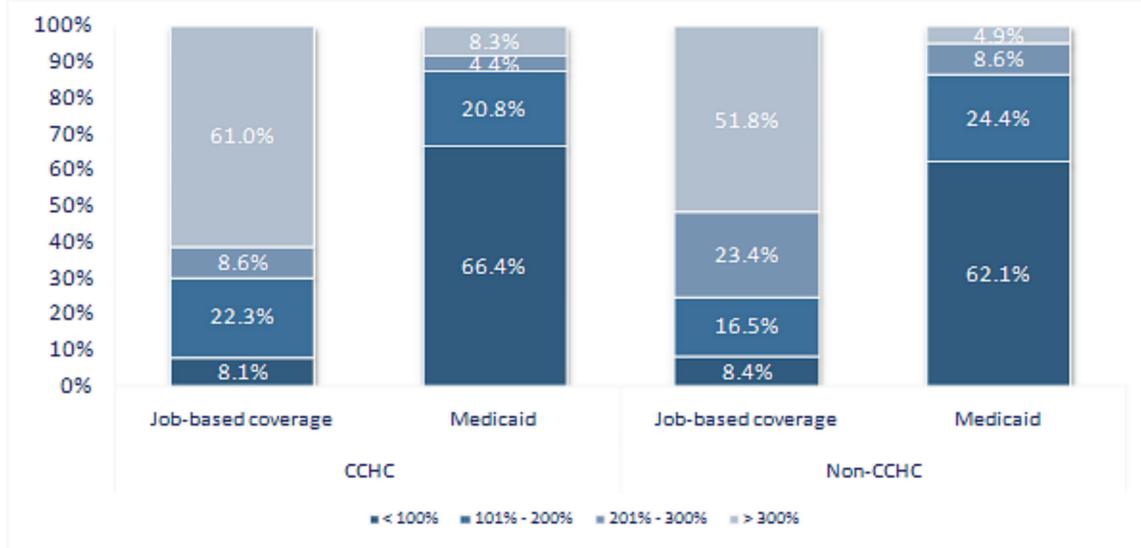


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

As with education status, when we look at poverty status for children with job-based insurance and Medicaid separately we note that the distinction between CCHC and non-CCHC populations do not differ substantially (Graph 14). This is not surprising given the means-tested eligibility for Medicaid. However, almost 9 out of 10 parents (87.2%) caring for a CCHC with Medicaid insurance earn at most 200% of the Federal poverty limit (FPL) and this does highlight the challenge these parents face in paying for additional services not covered by Medicaid (e.g. respite care).

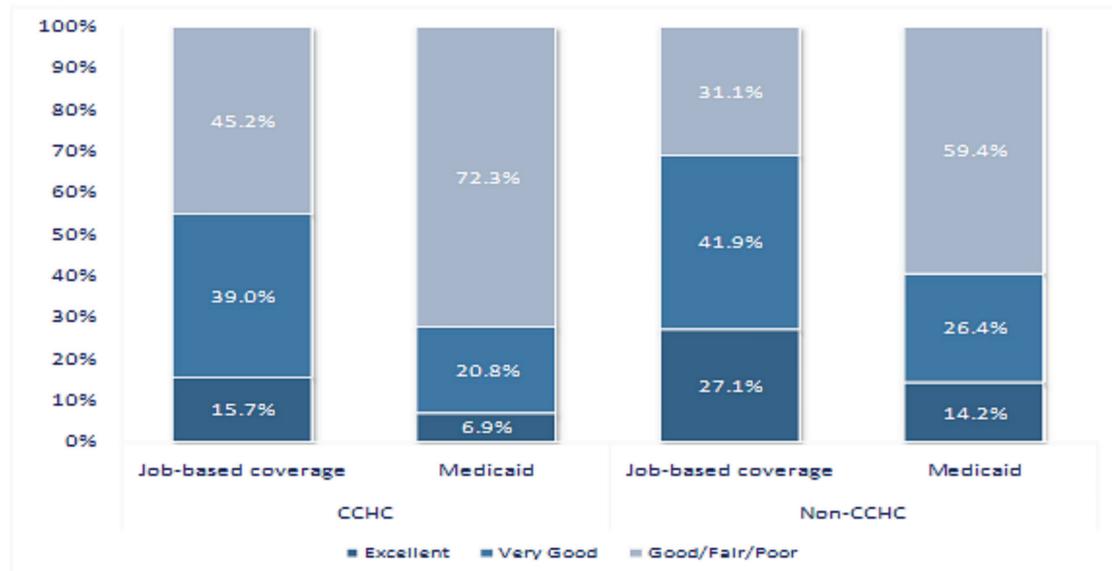
**Graph 14. Poverty Distribution of Parents Caring for CCHC and Non-CCHC by Health Insurance Type**



**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

Differences are also noted in the underlying health status of parents caring for children with job-based and Medicaid coverage. Only 27.7% of parents of CCHC on Medicaid report having excellent or very good health status compared to 54.7% of similar parents of CCHC with job-based insurance.

**Graph 15. Health Status Distribution of Parents Caring for CCHC and Non-CCHC by Health Insurance Type**

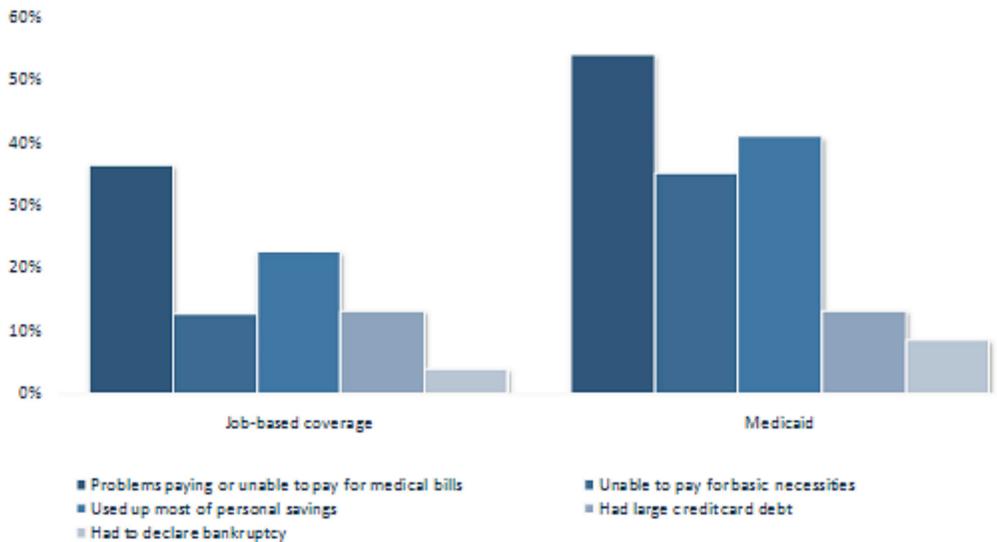


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions  
**Source:** OFHS, 2010

## Parental Stressors and Child Insurance Status

In this section, we demonstrate that parental stressors are significantly different by those with CCHC with job-based and Medicaid insurance. In Graph 16, we can see that with the exception of financial stress related to large credit card debts, parents of CCHC with job-based insurance have lower stress levels than parents of CCHC with Medicaid.

**Graph 16. Rate of Financial Stress Among Parents Caring for CCHC by Health Insurance Type**

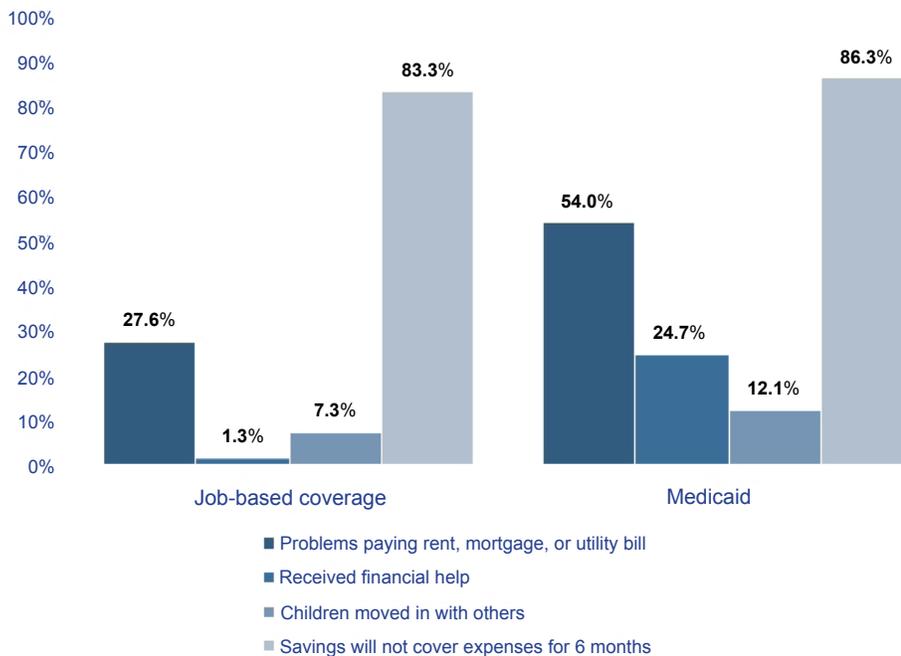


**Note:** CCHC=Children with complex health conditions; Non-CCHC=Children without complex health conditions

**Source:** OFHS, 2010

Twice as many parents of CCHC with Medicaid coverage have problems paying their rent, and mortgage than parents of CCHC with job-based insurance coverage (54.0% vs. 27.6%).

**Graph 17. Rate of Economic Stress of Parents Caring for CCHC by Health Insurance Type**

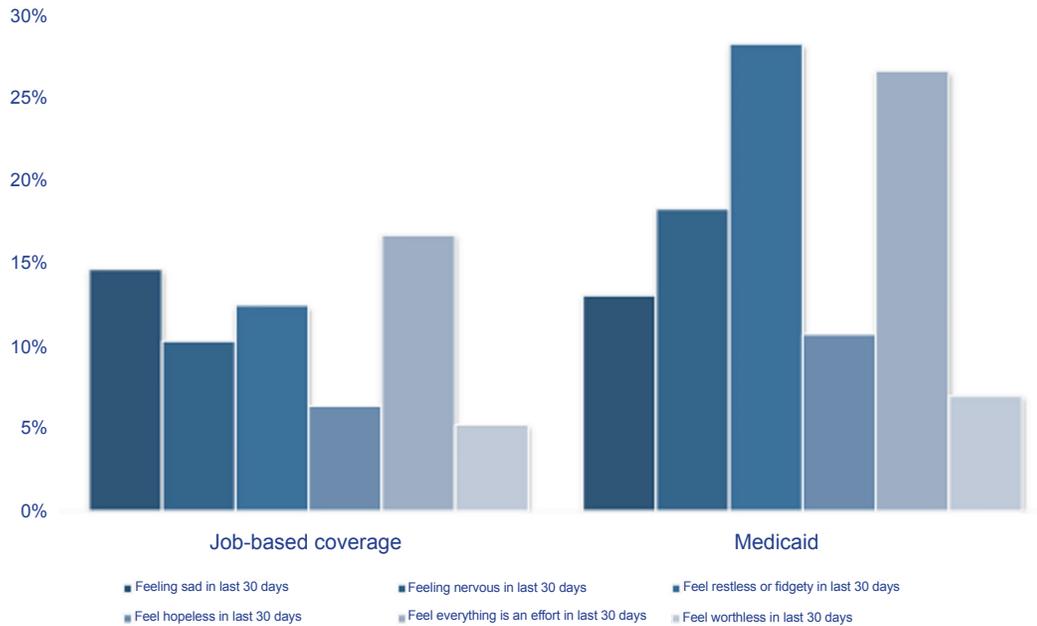


**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

With the exception of feeling sad, parents caring for CCHC on Medicaid had higher psychological stress levels of all types than parents caring for CCHC with job-based insurance. More than one in four parents caring for CCHC on Medicaid indicate feeling restless or fidgety (28.4%), or feeling everything is an effort (26.7%) all or most of time in the last 30 days (Graph 18).

**Graph 18. Psychological Stress of Parents Caring for CCHC**



**Note:** CCHC=Children with complex health conditions; Non-CCHC= Children without complex health conditions

**Source:** OFHS, 2010

## 9. Caring for Children with Complex Health Conditions – Policy Implications

### Situation Statement

In Ohio, economic uncertainty is contributing to an increase in financial stress for all families. In particular, among families caring for CCHC there has been an 18.8% increase between 2008 and 2010 in those unable to pay for basic necessities due to having problems or unable to pay for medical bills. The earning potential of families caring for CCHC is constrained due to time stress, employment proximity, job lock, and fatigue (Goudie, Fairbrother et al. 2010). More than 2 in 5 parents (44.4%) caring for CCHC have had difficulty paying rent, mortgage or utility bills. A significant proportion of these parents have received financial help to pay for these bills. More than 30,000 Ohioan families caring for CCHC have had children move in with others due to an inability to pay bills in the twelve months preceding the OFHS 2010 interview. Results in this report have also demonstrated that families caring for CCHC incur an inordinate amount of stress of all types. Stress due to caring for CCHC is independent of other conditions and realities that also contribute to levels of stress (e.g. poverty).

Stakeholders of policy change to help remedy the differential stress among families caring for CCHC and non-CCHC include: families caring for CCHC, developmental disability agencies and advocates, health care professionals, and in a broad sense legislators and taxpayers who must wrestle social justice with fiscal realities.

The results of this study are compelling and are supported by the technical acuity in which the data were collected and analyzed. We have used a weighted representative random sample of all families caring for children in Ohio. By identifying families with CCHC we are able to compare them to families caring for non-CCHC. Where possible we were able to compare results of 2008 and 2010 to demonstrate changes in outcomes during a difficult economic period.

### Hypothesis-Driven Theory

Before conducting this study and based on prior research we believed that families caring for CCHC would experience high rates of financial and emotional stress (Goudie, Fairbrother et al. 2010). We also hypothesized that they would have a higher incidence of psychological stresses compared to families with non-CCHC. Despite incurring a differential level of stress we also believed that there are proven interventions that can help alleviate the added stress of caring for a CCHC.

### Review of the Literature and Analysis of the Problem

Raising a child with disability contributes negatively to financial, economic, and psychological stress on parents (Goudie, Fairbrother et al. 2010). Increased levels of stress are either directly related or associated with a cascade of other

negative health consequences. Caring for a child with disability long-term has been associated with increased levels of cardiovascular, immune, and gastrointestinal problems (Miodrag and Hodapp 2010). Confirming our result of the decreased health status of parents caring for CCHC, Brehaut and colleagues (Brehaut, Kohen et al. 2009) state that these parents are twice as likely to report chronic conditions (or poorer health status) themselves, had limitations in at least one domain of activity, and reported higher rates of depression. Parents performing high levels of care-giving tend to get little sleep, spend little time socializing or participating in leisure activities (Smith, Hong et al. 2009). Lack of social support is a risk factor for morbidity and mortality. It is also associated with poor sleep and diet and increase levels of alcohol and tobacco use in particular (House, Landis et al. 1988). Each of these negative health activities are associated with systemic inflammation which is a risk factor for diseases such as type II diabetes, arthritis, and cancer (Keicolt-Glaser, Gouin et al. 2009).

One manner to curb increasing levels of stress in parents caring for CCHC is through the provision of respite care. Respite care is defined as a service designed to provide temporary residence for a person with a disability who ordinarily lives with family or friends, or to assume temporary responsibility for care of the person in his or her own home. This service provides back-up support, and in some cases relief, to people responsible for care of an ill or disabled person who ordinarily lives in their household.

On the basis of a literature review on studies related to caregiver stress, Strunck (2010) concludes that the comprehensive care needs of children and their families' inability to meet or cope with these needs are major factors contributing to high stress levels among the parent caregiver(s). As a coping mechanism for caregiver stress, respite care has been demonstrated to produce significant reductions in stress levels. Respite is an important contribution that offers short-breaks to families who care for children with multiple disabilities and appears to result in reductions in psychological distress in parents of children with developmental disabilities in particular (Mullins, Aniol et al. 2002). Respite care may be considered an intervention for child abuse, especially for those children suffering from challenging behaviors. Conclusions of the literature review reveal that that despite the severity of the disability, parental income level, or geographic location, respite is a needed support service for families of children with special needs (Folden and Coffman 1993; Treneman, Corkery et al. 1997; Abelson 1999; Chan and Sigafoos 2000; Cocks 2000; Chan and Sigafoos 2001; Neufeld, Query et al. 2001; Olsen and Maslin-Prothero 2001; Chadwick, Beecham et al. 2002; Cowen and Reed 2002; Mullins, Aniol et al. 2002; Hartrey and Wells 2003; MacDonald and Callery 2004; Jeon, Brodaty et al. 2005; Johnson and Kastner 2005; McGill, Papachristoforou et al. 2006; Cramer and Carlin 2008; Eaton 2008; Macdonald and Callery 2008; Wilkie and Barr 2008; Doig, McLennan et al. 2009; Nageswaran 2009; Neff 2009; Strunk 2010; McConkey, Truesdale et al. 2011).

Families who have children with long-term chronic conditions are faced with considerable economic stress, which increases according to the severity and complexity of the condition. If a family is faced with the unexpected circumstance of having a child with a complex chronic condition, a family member may need to stop or decrease work hours to provide home care, and income needs will increase to meet out-of-pocket expenses. There are powerful economic and social arguments for providing more respite care, and this need could become quite urgent. Failure to pay attention to the growing need for respite care could lead to an increase in the disintegration of the family structure and an increase in preventable child health care costs for society (Neff 2009).

In Ohio, results from the 2005/06 National Survey of Children with Special Health Care Needs (NS-CSHCN) revealed that 5.8% of CSHCN aged 0-17 years, or their families, needed respite care as compared to 4.5% nationwide (The Child and Adolescent Health Measurement Initiative 2005-2006). More importantly, of the individuals and families who needed care, 43.8% stated they did not receive all the respite care they wanted. Disparities exist among CSHCN in access to respite care: 8.3% of Ohioan CSHCN living in poor households (0%-99% FPL) needed respite care as compared to only 1.4% of CSHCN living in wealthier households (400% or higher); 11.3% of CSHCN covered by Medicaid in Ohio needed respite services as compared to 7.7% nationwide. Only 2.6% of CSHCN covered with private insurance needed respite care. Approximately 17.0% of children with functional limitations or their families needed respite care and 16.5% of children with one or more developmental, behavioral or emotional issue also needed respite care.

These results are based on responses from parents who care for children with all levels of special health care needs. The children profiled in this study are among the most complex, requiring the most care, and are associated with higher caregiver demands. Hence, a higher proportion of these caregivers are likely to need respite care.

Medicaid covers 61.0% of all CCHC in Ohio and 72.2% of all parents caring for CCHC covered by Medicaid report a health status less than very good (i.e. good, fair, or poor). As previously demonstrated, compared to parents of job-based insured CCHC, parents of Medicaid CCHC are more likely to have problems paying or unable to pay for medical bills, unable to pay for basic necessities, and used up most of their personal savings. They are also more likely to have had problems paying rent, mortgage, or utility bills, and had children move in with others due to an inability to pay bills. In addition, they are also more likely to have felt nervous, restless or fidgety, or hopeless in the 30 days prior to the survey interview. Increasing the number of Medicaid children and families eligible for respite care and the scope of that care will be the policy recommendation focus of the remainder of this section.

### Best-Practice Respite Care Interventions

Medicaid waivers for children and their families are programs offered through the Ohio Department of Job and Family Services (ODJFS) and administered by county-level Ohio Department of Developmental Disabilities (DODD) agencies. There are many factors that determine a person’s eligibility for a waiver, such as the type and extent of their disability, the prognosis, and the family and child’s financial assets. Each waiver provides different types of services. Currently there are eight waivers offered in Ohio, but only three waivers contain provisions for respite care services for children and their families: the Ohio Home Care, the Individual Options and the Level One. The definition and contents of these waivers, including a description of the eligibility requirements, services covered, and the entity who administers them can be found in Table H1, Appendix H.

Over the past years, the amount of money Medicaid allocated to waivers has fluctuated year-to-year (Table 7). Since 2004 Level One has experienced the highest average increase in funding levels. Despite increases in Level One waivers the waiting list in most counties for coverage is very long.

**Table 7. Yearly Percentage Change in Ohio Medicaid Waiver Expenditures, FY 2004-2009**

Waiver	04-05	05-06	06-07	07-08	08-09	ACRG*
Individual Options	20.3%	55.5%	9.9%	3.3%	18.6%	20.3%
Level One	144.9%	1669.0%	100.4%	-10.3%	33.9%	153.3%
Ohio Home Care Waiver	10.8%	-0.3%	17.8%	-18.5%	-5.9%	-0.1%

\*ACRG = Annual Compound Rate of Growth since FY 2004 or the waiver’s first year, whichever is earlier.

**Source:** Medicaid HCBS Waiver Expenditures FY 2004 through FY 2009. <http://hcbs.org>

In 2002, national spending for long-term care was almost \$160 billion, representing about 12% of all personal health care expenditures. Almost one-half of this spending was through the Federal-State Medicaid program, primarily paying for care in nursing homes (U.S Senate- Special Committee on Aging 2006). The Government Accountability Office estimates that by 2020 the number of adults requiring assistance with daily living will increase to almost 40 million and the number of elderly persons requiring long-term care will double. Respite care, offered as part of a comprehensive range of in home and community-based care, can present sick, elderly, and disabled individuals and their families with less expensive alternatives to nursing home care. No estimates of the actual savings for public programs such as Medicaid were available (U.S Senate- Special Committee on Aging 2006).

We contend that respite care for children and their parents is also a less expensive alternative compared to costs associated with the health care ravages of chronic stress, displaced potential workforce contributions, and institutionalization of a disabled child.

Rather than choose to move multiple parts at one time in an attempt to decrease the stress that parents caring for CCHC incur, we have focused on one practice (respite care) where the evidence is strong (based on a literature review) and where we can modify the process (level and scope of respite care provided). The three waivers that are available for children and their families in Ohio presented in Table 7 have provisions for respite care. These waivers provide the basis for proposing incremental policy shifts to achieve the desired outcome – less stress while caring for CCHC.

## Policy Implications and Recommendations

Overall, the interest in the findings of this report needs to be gauged in advocacy and legislative circles to determine the timing and traction for the implementation of policy recommendations. Further research is needed on how to best reduce the level of harmful stress on parents caring for CCHC. As part of this research, new policies need to be evaluated to determine their benefit to beneficiaries and society. Despite the over-riding economic climate making it difficult to expand public programs and increase additional Medicaid expenditures, we propose the following policy recommendations, all aligned to providing more comprehensive respite care services to reduce the level of stress in parents caring for CCHC covered by Medicaid:

### Recommendation One

Among existing waiver holders and those on waiting lists, conduct a thorough needs assessment for respite care that is incorporated as part of a medical home.

### Recommendation Two

Compile an inventory of existing respite care-givers (formal and informal) to gauge the impact on the existing respite care labor force prior to the expansion of respite care benefits under public programs. A respite care labor force must be able to be accessed in a timely manner.

### Recommendation Three

Based on the results of a needs assessment, increase the allocation of respite care dollars available through the Medicaid waiver programs. If remuneration for formal respite care is a barrier to the supply of respite care, increase remuneration rates.

### Recommendation Four

For parents and children on waiting lists, partition the benefits component of waivers to include the provision of respite care before full-benefit coverage waivers are secured.

### Recommendation Five

Implement a number of demonstration projects to measure the benefits of respite care in reducing stress in parents caring for CCHC. This will include an on-going needs assessment and financial and psychological stressor measurement component.

## 10. Conclusions

Key lessons learned from this study in terms of the financial, economic, and psychological stress experienced by parents caring for children with complex conditions as compared to parents of children without complex conditions can be summarized as followed:

### LESSON 1: Overall, the prevalence of stress is higher among families caring for children with complex health conditions than it is for families caring for children without complex health conditions.

- **Financial stressors:** Compared to parents caring for non-CCHC, a higher proportion of parents caring for CCHC have difficulties paying or are unable to pay for medical bills. Important disparities exist between parents caring for CCHC and non-CCHC depending on the insurance coverage status of the child. More than one-half of parents caring for CCHC with Medicaid coverage have difficulties paying for family medical bills while parents of non-CCHC covered by Medicaid face these financial consequences to a lesser extent. Parents caring for CCHC covered by job-based insurance also have more trouble paying for medical bills and basic necessities than parents caring for non-CCHC also covered with job-based insurance. In 2010, the most common hurdle faced by parents of both CCHC and non-CCHC covered with job-based insurance is the high rate of elimination of their personal savings.
- **Economic stressors:** A wide gap separates parents of CCHC and non-CCHC in their ability to pay rent, mortgage or utility bills, with the former group being affected to a high degree. Twice as many parents of CCHC with Medicaid coverage have problems paying their rent, and mortgage than parents of CCHC with job-based insurance coverage.
- **Psychological stressors:** There are marked differences in the prevalence of psychological stressors between parents caring for CCHC vs. non-CCHC. More specifically, parents caring for CCHC covered with Medicaid coverage, reportedly experience psychological stress (e.g. feeling nervous, hopeless, restless, or worthless) at a higher rate than

parents of CCHC covered with job-based insurance. By comparison, a relatively small percentage of parents of non-CCHC with job-based coverage report any psychological stress.

**LESSON 2: There are statistically significant differences between parents caring for CCHC vs. non-CCHC across most indicators of financial stress, and all indicators of economic, and psychological stress.**

**LESSON 3: Caring for a CCHC has a differential impact on parental stress depending on the complexity of the child health condition:**

- Parents caring for children with functional limitations were 2.8 times as likely to be unable to pay for basic necessities, 2.0 times as likely to have used up most of their personal savings, 2.4 times as likely to be unable to pay rent, mortgage, or utility bills, and 2.1 times as likely to have received financial help to pay for rent, mortgage or utility bills.
- Parents of children with developmental, behavioral or emotional problems were 1.8 times as likely to have problems or were unable to pay for medical bills, 2.0 times as likely to be unable to pay for basic necessities, and 1.7 times as likely to have used up most of their personal savings.
- Parents of children with functional limitations were 2.7 times as likely to feel sad, 3.5 times as likely to feel nervous, 3.1 times as likely to feel restless, 3.3 times as likely to feel everything is hopeless, at least most of the time. Overall, they were 4.2 times as likely to be classified as having serious depression and 2.3 times as likely to need treatment or counseling for mental health, substance abuse or emotional problem.
- Parents of children with developmental, behavioral or emotional problems are 2.6 times as likely to need treatment or counseling for mental health, substance abuse or emotional problem.

**LESSON 4: Parents caring for CCHC are not a homogenous group. Distinct patterns of overall stress of parents can be identified based on their patterns of responses to all financial, economic, and psychological stressors.**

In summary, what this report highlights is the disproportionate levels of caregiver stress associated with raising a child with complex health conditions compared to a child without complex health conditions. This is identified across individual stressors but is also shown to be manifested among the one in ten Ohio parents caring for children who have a higher probability of experience of experiencing a large number of stressors combined. Parents caring for a CCHC are much more likely to be highly stressed than have low levels of all stressors than parents caring for non-CCHC.

Consequently, from a health policy perspective, it is essential that child caregivers receive sufficient resources to access the stress reducing services they require. In this report we have focused on the benefit of augmenting access to respite care to aid in this function. Recommendations have been put forth to incrementally change existing waiver policies to help parents raising children with disabilities in Ohio.

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## **APPENDICES**

- A. Policy Logic Model
- B. Child and Parent Study Variable
- C. Profile of Children with Complex Health Conditions
- D. Profile of Parents Caring for Children with Complex Health Conditions
- E. Association Between Caring for CCHC and Parental Stress – Multivariable Logistic Regression (Adjusted Odds Ratio, 95% CI), 2010
- F. Comparison of Children and Parent Demographics and Stress Based by Job-Based and Medicaid Child Health Insurance Coverage
- G. Parental Stress by Complex Condition of Children (Functional Limitations or Developmental, Behavioral, Emotional Problems)
- H. Description of Waivers

## APPENDIX A: Policy Logic Model

Table A1: Caring for Children with Complex Conditions: Policy Logic Model

Situation Statement	Inputs	Throughputs – Hypothesis-Based Theory	Throughputs – Action	Outputs	Outcomes
<p><i>Macro-Economic context:</i> - Economic uncertainty is contributing to an increase in financial stress for all families especially those caring for CCHC.</p> <p><i>Micro-Economic context:</i> - Earning potential of families caring for CCHC is not maximized.</p> <p><i>Psychological/Emotional/Social context:</i> Families caring for CCHC experience greater stress of all types.</p> <p><i>Stakeholders:</i> OFHS Executive Committee, developmental disability program advocates, families caring for CCHC, taxpayers.</p>	<p><i>Physical context:</i> All families caring for children in Ohio.</p> <p><i>Comparison groups:</i> Families caring for (CCHC) and families caring for non-CCHC.</p> <p><i>Resources:</i> OFHS 2010, 2008, and 2004 data, OFHS 2010 grant funding, and investigator time and effort.</p>	<p><i>Identify problem:</i> Families caring for CCHC experience high rates of all types of stress.</p> <p><i>Beliefs about problem:</i> - Families caring for CCHC will experience greater stress than seemingly identical families caring for non-CCHC. - Families caring for CCHC earn less than seemingly identical families caring for non-CCHC. - There are known interventions that will help alleviate the added stress of caring for CCHC.</p>	<p>Conduct thorough literature review with a focus on the problem and successful best-practice intervention strategies.</p> <p>Perform profile analysis to identify comparison group characteristics and the magnitude of stress across groups.</p> <p>Present bivariate comparison of levels of stress by child insurance coverage.</p> <p>Use risk-adjusted multivariable analysis to determine if stress is more prevalent in families caring for CCHC with insurance coverage as a main predictor of interest.</p>	<p>Create a report and present findings to main stakeholders.</p> <p>Along with input from a policy expert, draft policy implications based on findings.</p> <p>Identify best-practice interventions and disseminate to CCHC program stakeholders in Ohio.</p> <p>Disseminate findings broadly by incorporating them on an established and accessible on-line source for Ohio child health data.</p>	<p><i>Short term:</i> The analysis, findings, and report will identify and highlight the extent of the problem and present policy implications.</p> <p><i>Intermediate:</i> Identify additional funding opportunities to test best-practice interventions in Ohio setting.</p> <p><i>Long-term:</i> Implement successful programs that close the gap for all stresses due to caring for a child with a complex health condition.</p>

## APPENDIX B: Child and Parent Study Variables

Table B1. 2008, and 2010 OFHS Demographic and Health Status Variables for CCHC and Parents

Child and Parent Variables	Categories
<i>Child</i>	
Age	0-5, 6-12, 13-17
Gender	Male, Female
Race and ethnicity	White, African American, Hispanic, Other
Health Insurance	Job-based insurance, Medicaid, Other insurance, Uninsured
General Health	Excellent, Very Good, Good/ Fair/ Poor
<i>Parents Caring for CCHC</i>	
Age	18-25, 26-34, 35-45, 46 and over
Marital Status	Single, Married/Cohabitate, Divorced/Separated, Widowed
Education Status	< High School, High School or equivalent, Some College and higher
Poverty Status (as % of FPL)	<100%, 101-200%, 201-300%, >300+
Health Insurance	Job-based insurance, Medicaid, Other insurance, Uninsured
Region of Residence	Metropolitan, Suburban, Appalachian, Rural
General Health	Excellent, Very Good, Good/ Fair/ Poor

FPL = Federal Poverty Level

**Table B2. 2008, and 2010 OFHS Financial, Economic, Psychological Stressors and Mental Health Needs**

Financial, Economic, Psychological Stressors and Mental Health Needs	Categories
<i>Financial Stressors</i>	
Problems paying or unable to pay for medical bills	Yes, No
If yes to unable to pay for medical bills ...	
...Unable to pay for basic necessities	Yes, No
...Used up most of personal savings	Yes, No
...Had large credit card debt or had to take a loan of any kind	Yes, No
...Had to declare bankruptcy <sup>a</sup>	Yes, No
<i>Economic Stressors</i> <sup>a</sup>	
Unable to pay rent, mortgage, or utility bill	Yes, No
If yes to unable to rent, mortgage, or bills ...	
...Received financial help to pay for rent, mortgage or utility bill	Yes, No
...Children moved in with others due to inability to pay bills	Yes, No
...Time savings will cover expenses	Yes, No
<i>Psychological Stressors</i> <sup>a</sup>	
Feeling sad in last 30 days	1 – All of the time
Feeling nervous in last 30 days	2 – Most of the time
Feel restless or fidgety in last 30 days	3 – Some of the time
Feel hopeless in last 30 days	4 – A little of the time
Feel everything is an effort in last 30 days	5 – None of the time
Feel worthless in last 30 days	
Kessler 6 Total Score	Range 0- 24 (continuous)
<i>Other Mental Health Care Needs</i>	
Number of days in past month prevented from doing work or usual activities due to mental health condition or emotional issue	Days (continuous)
Need assistance with personal care, such as bathing, dressing, toileting, or feeding <sup>a</sup>	Yes, No
Need domestic assistance, such as shopping, laundry, housekeeping, cooking, or transportation <sup>a</sup>	Yes, No
Need treatment of counseling for mental health, substance abuse or emotional problem	Yes, No
Need social support <sup>a</sup>	Yes, No

FPL = Federal Poverty Level, <sup>a</sup> Variables not available in 2008 OFHS.

**Table B3. Multivariable Logistic Regression Models**

Multivariable Logistic Regression Model Number and Dependent Variable	Dichotomous Categories	Primary Predictor	Risk-Adjusting Variables		
<b>Financial Stressors</b>					
(1) Problems paying or unable to pay for medical bills	<b>Yes, No</b>	<b>Non-CCHC,</b> Functional Limitations, Mental Health	<u>CHILD</u>  <u>Health Insurance Status:</u> <b>Job-based</b> , Medicaid, Other, Uninsured  <u>Age:</u> 0-5, 6-12, <b>13-17</b>  <u>Sex:</u> Male, <b>Female</b>  <u>Race:</u> Black, Hispanic, Other, <b>White</b>  <u>PARENT</u>  <u>Age:</u> 18-25, 26-34, <b>35-45</b> , 46 and over  <u>Sex:</u> Male, <b>Female</b>  <u>Marital Status:</u> Single, Divorced/Separated, Widowed, <b>Married/Cohabitate</b>  <u>Education Status:</u> < High School, High School or GED, Some College, Associate Degree, <b>College Degree</b>  <u>Health Insurance Status:</u> <b>Job-based</b> , Medicaid, Other, Uninsured  <u>Region of Residence:</u> <b>Metropolitan</b> , Suburban, Appalachian, Rural (non-Appalachian)		
(2) Unable to pay for basic necessities	<b>Yes, No</b>				
(3) Used up most of personal savings	<b>Yes, No</b>				
(4) Had large credit card debt or had to take out loan	<b>Yes, No</b>				
(5) Had to declare bankruptcy	<b>Yes, No</b>				
<b>Economic Stressors</b>					
(6) Unable to pay rent, mortgage, or utility bill	<b>Yes, No</b>				
(7) Received financial help to pay for rent, mortgage or utility bill	<b>Yes, No</b>				
(8) Children moved in with others due to inability to pay bills	<b>Yes, No</b>				
(9) Time savings will cover expenses	<b>6 months or less, More than 6 months</b>				
<b>Psychological Stressors</b>					
(10) Feel sad	<b>All or most of the time, Some of the time or less</b>				
(11) Feel nervous					
(12) Feel restless or fidgety					
(13) Feel hopeless					
(14) Feel everything is an effort					
(15) Feel worthless					
(16) Kessler 6 *	<b>&gt; 12, &lt;=12</b>				
<b>Other Mental Health-Related Needs</b>					
(17) Mental health condition or emotional issue prevented doing work or usual activities *	<b>0 days, 1 or more</b>				
(18) Need assistance to do day-to-day activities	<b>Yes, No</b>				
(19) Need treatment or counseling for mental health, substance abuse or emotional problem	<b>Yes, No</b>				
(20) Need social support	<b>Yes, No</b>				

Note: For adjusting variables, the referent category is depicted in bold italics. For the dependent variables, the event being modeled is depicted in bold italics.

## APPENDIX C: Profile of Children with Complex Health Conditions

Table C1. Demographics, Health and Insurance Status

	2008				2010			
	CCHC Number of Children	CCHC Percent of Children 95% CI	Non-CCHC Number of Children	Non-CCHC Percent of Children 95% CI	CCHC Number of Children	CCHC Percent of Children 95% CI	Non-CCHC Number of Children	Non-CCHC Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>	287,520	11.3%	2,251,989	88.7%	302,598	12.3%	2,164,600	87.7%
<b>Age Category</b> <sup>8,10</sup>								
0-5 Years	37,972	13.2% 10.8-15.6	723,663	32.1% 30.9-33.3	48,336	16.0% 9.4-22.5	701,857	32.4% 29.5-35.4
6-12 Years	134,805	46.9% 43.3-50.5	840,264	37.3% 36.0-38.5	140,923	46.6% 38.1-55.0	794,554	36.7% 33.8-39.7
13-17 Years	114,743	39.9% 36.4-43.4	688,062	30.6% 29.4-31.7	113,339	37.5% 29.5-45.4	668,189	30.9% 28.2-33.6
<b>Gender</b> <sup>8,10</sup>								
Male	175,201	61.5% 58.0-60.6	1,112,870	50.0% 48.7-51.2	196,583	65.0% 57.0-72.9	1,108,018	51.2% 48.1-54.2
Female	109,676	38.5% 35.0-42.0	1,114,167	50.0% 48.8-51.3	106,015	35.0% 27.1-43.0	1,056,582	48.8% 45.8-51.9
<b>Race and Ethnicity</b> <sup>8</sup>								
White (Only, Not Hispanic)	215,496	75.5% 72.5-78.6	1,802,102	80.5% 79.6-81.4	216,282	72.9% 65.7-80.0	1,629,988	76.2% 73.6-78.8
African American (Only, Not Hispanic)	53,545	18.8% 15.9-21.6	306,938	13.7% 12.9-14.6	53,197	17.9% 12.0-23.8	339,851	15.9% 13.6-18.2
Hispanic (Any Race)	11,261	3.9% 3.0-4.9	80,512	3.6% 3.3-3.9	23,268	7.8% 3.2-12.5	107,144	5.0% 3.6-6.4
Other (Includes Multiracial, Not Hispanic)	5,024	1.8% 0.8-2.7	49,118	2.2% 1.8-2.6	4,116	1.4% 0.1-2.7	62,398	2.9% 2.1-3.8
<b>Health Insurance</b> <sup>8,10</sup>								
Job-Based Coverage	102,152	35.8% 32.4-39.2	1,327,958	59.3% 58.1-60.6	102,535	33.9% 25.9-41.9	1,114,798	51.5% 48.4-54.6
Medicaid	164,052	57.5% 54.0-61.0	704,382	31.5% 30.3-32.7	185,559	61.3% 53.1-69.5	793,622	36.7% 33.6-39.7
Other	10,506	3.7% 2.5-4.9	108,800	4.9% 4.3-5.4	9,773	3.2% 1.0-5.5	148,247	6.8% 5.5-8.2
Uninsured	8,666	3.0% 1.9-4.2	95,721	4.3% 3.8-4.8	4,731	1.6% 0.0-4.1	107,933	5.0% 3.6-6.4
<b>General Health</b> <sup>8,10</sup>								
Excellent	59,986	20.9% 17.9-23.9	1,371,194	60.9% 59.7-62.2	83,412	27.8% 20.3-35.3	1,328,516	61.4% 58.4-64.4
Very Good	94,761	33.0% 29.6-36.5	615,753	27.4% 26.2-28.5	109,652	36.5% 28.3-44.7	610,786	28.2% 25.4-31.0
Good / Fair / Poor	132,068	46.0% 42.4-49.7	263,541	11.7% 10.9-12.5	107,128	35.7% 27.6-43.8	225,298	10.4% 8.4-12.4

Note: Shaded cells, RSE>30

<sup>8</sup> p<0.05 for 2008 difference between CCHC status and predisposing factor; <sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor.

<sup>a</sup> p<0.05 for difference across prevalence for CCHC between 2008 and 2010.

# APPENDIX D: Profile of Parents Caring for Children with Complex Health Conditions

Table D1. Sociodemographics, Health and Insurance Status

	2008				2010			
	CCHC		Non-CCHC		CCHC		Non-CCHC	
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>	287,520	11.3%	2,251,989	88.7%	302,598	12.3%	2,164,600	87.7%
<b>Age Category <sup>8</sup></b>								
18-24 Years	12,783	4.4% 2.9-6.0	146,131	6.5% 5.9-7.1	20,385	6.7% 2.4-11.1	173,142	8.0% 6.2-9.8
25-34 Years	70,491	24.5% 21.3-27.7	624,103	27.7% 26.6-28.9	79,572	26.3% 18.1-34.5	579,953	26.8% 23.9-29.6
35-44 Years	114,255	39.7% 36.2-43.3	893,743	39.7% 38.5-40.9	109,074	36.0% 27.9-44.2	786,765	36.3% 33.4-39.3
45 years and over	89,990	31.3% 28.0-34.6	588,011	26.1% 25.0-27.2	93,567	30.9% 23.8-38.1	624,739	28.9% 36.3-31.5
<b>Marital Status <sup>8,10</sup></b>								
Married	161,659	56.6% 52.8-60.0	1,590,738	70.7% 69.6-71.9	172,294	56.9% 48.6-65.3	1,492,435	69.1% 66.2-72.0
Single	47,606	16.6% 13.9-19.3	288,492	12.8% 12.0-13.7	54,118	17.9% 11.7-24.1	290,410	13.5% 11.3-15.6
Divorced/Separated/Widow ed	77,575	27.0% 23.8-30.3	370,168	16.5% 15.5-17.4	76,186	25.2% 17.8-32.5	376,001	17.4% 15.0-19.8
<b>Education Status <sup>8,10</sup></b>								
Less than High School	29,347	10.2% 8.0-12.4	153,866	6.8% 6.2-7.5	44,661	14.8% 8.5-21.0	175,299	8.1% 6.3-9.9
High School or equivalent	99,386	34.6% 31.3-38.1	671,314	29.8% 28.7-31.0	94,227	31.1% 23.3-38.9	650,276	30.1% 27.3-32.9
Some College and higher degree	158,416	55.2% 51.6-58.8	1,423,967	63.3% 62.1-64.5	163,710	54.1% 45.7-62.5	1,335,851	61.8% 58.8-64.8
<b>Poverty Status (as % of FPL) <sup>8,10</sup></b>								
< 100%	105,072	36.4% 33.0-40.1	481,281	21.4% 20.3-22.4	140,256	46.4% 37.9-54.8	655,884	30.3% 27.3-33.3
101% - 200%	78,054	27.1% 23.9-30.4	466,803	20.7% 19.7-21.8	62,097	20.5% 13.8-27.3	461,673	21.3% 18.8-23.9
201% - 300% <sup>a</sup>	38,672	13.5% 11.1-15.8	407,418	18.1% 17.1-19.1	19,486	6.4% 3.0-9.9	370,846	17.1% 14.9-19.4
> 300%	65,721	22.9% 19.9-25.8	896,486	39.8% 38.6-41.0	80,758	26.7% 19.4-33.9	676,196	31.2% 28.6-33.8
<b>Health Insurance <sup>8,10</sup></b>								
Job-Based Coverage	126,681	44.3% 40.8-47.9	1,394,198	62.4% 61.2-63.6	113,866	38.4% 30.1-46.6	1,172,122	54.8% 51.7-57.9
Medicaid	99,711	34.9% 31.3-38.5	426,085	19.1% 18.0-20.1	109,214	36.8% 28.4-45.2	512,390	24.0% 21.1-26.8
Other	21,644	7.6% 5.8-9.3	144,048	6.4% 5.8-7.1	19,311	6.5% 3.3-9.7	168,872	7.9% 6.4-9.4
Uninsured	37,648	13.1% 10.6-15.7	270,307	12.1% 11.3-12.9	54,380	18.3% 11.5-25.2	285,743	13.4% 11.1-15.6
<b>Health Status <sup>8,10</sup></b>								
Excellent	28,241	9.8% 7.7-11.9	506,298	22.5% 21.4-23.6	31,784	10.5% 6.0-15.0	471,701	21.8% 19.4-24.3
Very Good	78,507	27.3% 24.0-30.6	857,121	38.1% 36.9-39.3	81,291	26.9% 19.3-34.5	757,419	35.0% 32.2-37.9
Good/Fair/Poor	180,771	62.9% 59.4-66.4	887,317	39.4% 38.2-40.71	189,018	62.6% 54.5-70.6	933,146	43.2% 40.1-46.2
<b>Region of Residence</b>								
Appalachian	35,500	12.3% 10.4-14.3	281,188	12.5% 12.0-13.0	42,979	14.2% 8.5-19.9	339,970	15.7% 14.3-17.1
Metropolitan	158,876	55.3% 51.8-58.7	1,239,179	55.0% 54.1-56.0	181,317	59.9% 51.9-67.9	1,173,299	54.2% 52.2-56.2
Rural (Non-Appalachian)	42,371	14.7% 12.5-17.0	327,400	14.5% 13.9-15.1	45,252	15.0% 8.9-21.0	289,216	13.4% 12.1-14.6
Suburban	50,772	17.7% 14.7-20.6	404,222	17.9% 17.2-18.7	33,051	10.9% 5.9-16.1	362,115	16.7% 15.3-18.2

Note: FPL = Federal Poverty Level

<sup>8</sup> p<0.05 for 2008 difference between CCHC status and predisposing factor; <sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor.

<sup>a</sup> p<0.05 for difference across prevalence for CCHC between 2008 and 2010.

**Table D2. Financial Stressors**

		2008				2010			
		CCHC		Non-CCHC		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		287,520	11.3%	2,251,989	88.7%	302,598	12.3%	2,164,600	87.7%
<b>FINANCIAL STRESSORS</b>									
<b>Problems paying or unable to pay for medical bills<sup>8,10</sup></b>	<b>Yes</b>	143,054	49.8% 46.1-53.4	702,477	31.2% 30.1-32.4	146,318	48.7% 40.2-57.1	761,768	35.2% 32.3-38.2
	<b>No</b>	144,325	50.2% 46.6-53.9	1,546,501	68.8% 67.6-69.9	154,437	51.3% 42.9-59.8	1,400,015	64.8% 61.8-67.7
<b>Unable to pay for basic necessities<sup>8,10</sup></b>	<b>Yes</b>	67,274	23.4% 20.4-26.4	249,326	11.1% 10.3-11.9	83,608	27.8% 19.8-35.8	272,949	12.6% 10.5-14.8
	<b>No</b>	220,105	76.6% 73.6-79.6	1,998,509	88.9% 88.1-89.7	217,146	72.2% 61.4-80.2	1,888,194	87.4% 85.2-89.5
<b>Used up most of personal savings<sup>8,10</sup></b>	<b>Yes</b>	100,757	35.2% 31.7-38.7	424,249	18.9% 17.9-19.9	105,750	35.2% 26.9-43.4	469,598	21.8% 19.2-24.4
	<b>No</b>	185,541	64.8% 61.3-68.3	1,823,174	81.1% 80.1-82.1	195,005	64.8% 56.6-73.1	1,684,631	78.2% 75.6-80.8
<b>Had large credit card debt or had to take a loan of any kind<sup>8</sup></b>	<b>Yes</b>	58,604	20.4% 17.4-23.6	2,035,291	90.5% 89.8-91.3	38,710	12.9% 7.4-18.3	224,166	10.4% 8.5-12.2
	<b>No</b>	228,755	79.6% 76.6-82.6	213,068	9.5% 8.7-10.2	262,045	87.1% 81.7-92.6	1,937,617	89.6% 87.8-91.5
<b>Had to declare bankruptcy</b>	<b>Yes</b>					20,531	6.8% 2.5-11.1	103,593	4.8% 3.4-6.2
	<b>No</b>					280,223	93.2% 88.8-97.5	2,058,190	95.2% 93.8-96.6

Note: Shaded cells, RSE>30

<sup>8</sup> p<0.05 for 2008 difference between CCHC status and predisposing factor; <sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor.

<sup>a</sup> p<0.05 for difference across prevalence for CCHC between 2008 and 2010.

**Table D3. Economic Stressors**

		2010			
		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		302,598	12.3%	2,164,600	87.7%
<b>ECONOMIC STRESSORS</b>					
<b>Problems paying rent, mortgage, or utility bill <sup>10</sup></b>	<b>Yes</b>	134,209	44.4% 35.9-52.8	585,029	27.1% 24.2-30.0
	<b>No</b>	168,389	55.6% 47.2-64.1	1,574,615	72.9% 70.0-75.8
<b>Received financial help to pay for rent, mortgage or utility bill <sup>10</sup></b>	<b>Yes</b>	49,121	16.2% 9.7-22.7	183,049	8.5% 6.6-10.3
	<b>No</b>	253,478	83.8% 77.3-90.2	1,975,891	91.5% 89.7-93.4
<b>Children moved in with others due to inability to pay bills <sup>10</sup></b>	<b>Yes</b>	30,600	10.1% 4.5-15.7	112,569	5.2% 3.7-6.7
	<b>No</b>	271,998	89.9% 84.3-95.5	2,047,076	94.8% 93.3-96.3
<b>Time savings will cover expenses <sup>10</sup></b>	<b>Lesser than 6 months</b>	256,132	84.9% 79.5-90.3	1,522,674	74.4% 71.7-77.0
	<b>Greater than 6 months</b>	45,529	15.1% 9.7-20.5	525,094	25.6% 23.0-28.3

Note: <sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor

**Table D4. Psychological Stressors**

		2010			
		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		302,598	12.3%	2,164,600	87.7%
<b>PSYCHOLOGICAL STRESSORS</b>					
Feeling sad in last 30 days <sup>10</sup>	All or most of the time	44,156	14.7% 8.5-21.0	146,329	6.8% 5.1-8.4
	Some or little of the time	89,398	29.9% 22.0-37.7	484,458	22.4% 19.8-25.1
	None of the time	165,927	55.4% 46.9-63.9	1,528,837	70.8% 67.9-73.7
Feeling nervous in last 30 days <sup>10</sup>	All or most of the time	49,538	16.4% 9.9-23.0	174,148	8.1% 6.3-9.8
	Some or little of the time	116,322	38.6% 30.4-46.9	761,040	35.2% 32.3-38.1
	None of the time	135,332	44.9% 36.5-53.3	1,226,415	56.7% 53.7-59.8
Feel restless or fidgety in last 30 days <sup>10</sup>	All or most of the time	71,383	23.7% 16.2-31.2	201,799	9.3% 7.5-11.2
	Some or little of the time	103,054	34.2% 26.2-42.3	674,337	31.2% 28.3-34.1
	None of the time	126,754	42.1% 33.8-50.3	1,285,098	59.5% 56.4-62.5
Feel hopeless in last 30 days <sup>10</sup>	All or most of the time	32,702	10.9% 5.6-16.2	117,255	5.4% 3.9-7.0
	Some or little of the time	69,622	23.1% 16.0-30.2	305,763	14.2% 11.9-16.4
	None of the time	198,867	66.0% 58.0-74.1	1,737,298	80.4% 77.8-83.0
Feel everything is an effort in last 30 days <sup>10</sup>	All or most of the time	69,606	23.0% 16.2-29.9	333,514	15.6% 13.3-18.0
	Some or little of the time	114,759	38.0% 29.7-46.3	559,461	26.2% 23.5-28.9
	None of the time	117,902	39.0% 30.8-47.3	1,241,181	58.2% 55.1-61.2
Feel worthless in last 30 days <sup>10</sup>	All or most of the time	22,178	7.4% 3.0-11.7	70,078	3.2% 2.1-4.4
	Some or little of the time	61,468	20.4% 13.4-27.4	267,908	12.4% 10.2-14.5
	None of the time	217,545	72.2% 64.5-79.9	1,824,188	84.4% 82.0-86.7
Kessler 6 <sup>10</sup>	<=12	250,327	82.7% 76.1-89.3	2,004,085	92.6% 90.9-94.3
	>12	52,271	17.3% 10.7-23.9	160,515	7.4% 5.7-9.1

Note: Shaded cells, RSE>30

<sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor

**Table D5. Mental Health Needs**

	2008				2010				
	CCHC		Non-CCHC		CCHC		Non-CCHC		
	Number of Children	Percent of Children	Number of Children	Percent of Children	Number of Children	Percent of Children	Number of Children	Percent of Children	
		95% CI		95% CI		95% CI		95% CI	
<b>Children Aged 0-17 Years</b>	287,520	11.3%	2,251,989	88.7%	302,598	12.3%	2,164,600	87.7%	
<b>Other Mental Health Care Needs</b>									
<b>Number of days in past month prevented from doing work or usual activities due to mental health condition or emotional issue<sup>8,10</sup></b>	<b>0 day</b>	194,195	67.9% 64.5-71.4	1,935,860	86.3% 85.4-87.2	208,367	69.2% 61.2-77.1	1,789,215	82.9% 80.5-85.4
	<b>At least 1 day</b>	91,781	32.1% 28.7-35.5	306,702	13.7% 12.8-14.6	92,913	30.8% 22.9-38.8	367,802	17.1% 14.6-19.5
<b>Need assistance with personal care, such as bathing, dressing, toileting, or feeding<sup>10</sup></b>	<b>Yes</b>					2,724	2.5% 0.2-4.7	26,183	8.9% 3.9-13.9
	<b>No</b>					107,459	97.5% 95.3-99.8	267,738	91.1% 86.1-96.1
<b>Need domestic assistance, such as shopping, laundry, housekeeping, cooking, or transportation</b>	<b>Yes</b>					33,712	67.4% 59.2-75.5	95,318	32.6% 24.5-40.8
	<b>No</b>					76,471	30.6% 18.2-43.0	196,893	67.4% 59.2-75.5
<b>Need treatment of counseling for mental health, substance abuse or emotional problem<sup>8,10</sup></b>	<b>Yes</b>	62,845	21.9% 18.7-25.0	157,019	7.0% 6.3-7.6	72,585	24.0% 16.7-31.3	210,137	9.7% 7.9-11.6
	<b>No</b>	224,416	78.1% 75.0-81.3	2,091,264	93.0% 92.4-93.7	230,013	76.0% 68.7-83.3	1,952,631	90.3% 88.4-92.1
<b>Need social support<sup>8,10</sup></b>	<b>Yes</b>					44,958	41.3% 27.5-55.2	75,509	25.6% 18.0-33.2
	<b>No</b>					63,818	58.7% 44.8-72.5	219,299	74.4% 66.8-82.0

Note:

<sup>8</sup> p<0.05 for 2008 difference between CCHC status and predisposing factor; <sup>10</sup> p<0.05 for 2010 difference between CCHC status and predisposing factor.

<sup>a</sup> p<0.05 for difference across prevalence for CSHCN between 2008 and 2010

**APPENDIX E: Association Between Caring for CCHC and Parental Stress –  
Multivariable Logistic Regression (Adjusted Odds Ratio, 95% CI), 2010**

**Table E1. Financial Stressors: Problems Paying or Unable to Pay for Medical Bills**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	1.37	0.81	2.34
	Developmental, behavioral, and emotional problems		<b>1.80</b>	1.09	2.97
Health Insurance Status	Medicaid,	Job-based	<b>2.15</b>	1.53	3.02
	Other		1.08	0.68	1.71
	Uninsured		<b>6.33</b>	3.36	11.94
Age	0-5	13-17	0.85	0.59	1.22
	6-12		0.76	0.55	1.04
Gender	Male	Female	1.09	0.84	1.40
Race/Ethnicity	Black	White	0.93	0.61	1.42
	Hispanic		0.77	0.42	1.40
	Other		0.82	0.43	1.55
<b>PARENT</b>					
Age	18-25	35-45	0.81	0.46	1.45
	26-34		1.03	0.72	1.47
	46 and over		0.83	0.61	1.13
Marital Status	Single	Married/Cohabitate	0.80	0.50	1.28
	Divorced/Separated/Widowed		<b>1.57</b>	1.11	2.22
Education Status	Less than High School	Some College and higher degree	0.60	0.36	1.00
	High School or equivalent		1.13	0.83	1.52
County/Region	Appalacian	Metropolitan	0.89	0.61	1.29
	Rural (Non-Appalacian)		1.29	0.90	1.86
	Suburban		0.72	0.49	1.05

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.64

**Table E2. Financial Stressors: Unable to Pay for Basic Necessities**

			2010		
Variables	Category	Reference	Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>2.78</b>	1.55	4.99
	Developmental, behavioral, and emotional problems		<b>2.03</b>	1.11	3.70
Health Insurance Status	Medicaid,	Job-based	<b>2.60</b>	1.57	4.31
	Other		0.84	0.37	1.94
	Uninsured		<b>7.84</b>	3.73	16.49
Age	0-5	13-17	0.84	0.49	1.42
	6-12		0.89	0.58	1.36
Gender	Male	Female	0.98	0.68	1.41
Race/Ethnicity	Black	White	0.92	0.54	1.55
	Hispanic		0.82	0.39	1.74
	Other		0.92	0.38	2.25
<b>PARENT</b>					
Age	18-25	35-45	0.70	0.30	1.59
	26-34		0.83	0.50	1.37
	46 and over		0.69	0.44	1.07
Marital Status	Single	Married/Cohabitate	1.11	0.61	2.02
	Divorced/Separated/Widowed		<b>2.08</b>	1.32	3.27
Education Status	Less than High School	Some College and higher degree	0.59	0.31	1.13
	High School or equivalent		1.18	0.76	1.82
County/Region	Appalacian	Metropolitan	1.11	0.68	1.84
	Rural (Non-Appalacian)		1.24	0.72	2.12
	Suburban		<b>0.52</b>	0.29	0.92

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
 C-statistic Value=0.69

**Table E3. Financial Stressors: Used Up Most of Personal Savings**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>1.96</b>	1.09	3.55
	Developmental, behavioral, and emotional problems		<b>1.69</b>	1.00	2.83
Health Insurance Status	Medicaid,	Job-based	<b>1.54</b>	1.04	2.30
	Other		1.03	0.61	1.74
	Uninsured		<b>2.53</b>	1.29	4.97
Age	0-5	13-17	0.85	0.57	1.27
	6-12		0.76	0.54	1.08
Gender	Male	Female	1.05	0.79	1.41
	Black	White	0.98	0.63	1.53
Hispanic	0.76		0.38	1.50	
Other	0.58		0.27	1.25	
<b>PARENT</b>					
Age	18-25	35-45	0.67	0.33	1.33
	26-34		0.94	0.63	1.41
	46 and over		1.14	0.81	1.62
Marital Status	Single	Married/Cohabitate	1.15	0.70	1.90
	Divorced/Separated/Widowed		<b>1.60</b>	1.09	2.36
Education Status	Less than High School	Some College and higher degree	0.76	0.43	1.33
	High School or equivalent		1.39	0.99	1.93
County/Region	Appalacian	Metropolitan	1.00	0.66	1.52
	Rural (Non-Appalacian)		1.34	0.88	2.04
	Suburban		0.85	0.55	1.31

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.63

**Table E4. Financial Stressors: Had Large Credit Card Debt or Had to Take Out Loan**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	2.01	0.98	4.11
	Developmental, behavioral, and emotional problems		0.94	0.45	1.99
Health Insurance Status	Medicaid,	Job-based	1.37	0.82	2.27
	Other		0.85	0.40	1.78
	Uninsured		1.62	0.65	4.02
Age	0-5	13-17	0.98	0.61	1.55
	6-12		0.98	0.61	1.55
Gender	Male	Female	0.98	0.67	1.42
	Black	White	0.76	0.42	1.36
Hispanic	0.42		0.13	1.34	
Other	1.06		0.44	2.54	
<b>PARENT</b>					
Age	18-25	35-45	0.59	0.22	1.55
	26-34		0.72	0.43	1.21
	46 and over		0.85	0.54	1.33
Marital Status	Single	Married/Cohabitate	0.85	0.43	1.68
	Divorced/Separated/Widowed		1.00	0.58	1.73
Education Status	Less than High School	Some College and higher degree	<b>0.24</b>	0.09	0.61
	High School or equivalent		1.23	0.79	1.90
County/Region	Appalacian	Metropolitan	1.42	0.83	2.43
	Rural (Non-Appalacian)		1.40	0.81	2.42
	Suburban		1.13	0.66	1.94

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.58

**Table E5. Financial Stressors: Had to Declare Bankruptcy**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	1.24	0.38	4.03
	Developmental, behavioral, and emotional problems		1.25	0.46	3.44
Health Insurance Status	Medicaid,	Job-based	1.53	0.73	3.20
	Other		0.39	0.13	1.20
	Uninsured		2.27	0.67	7.69
Age	0-5	13-17	1.40	0.63	3.14
	6-12		1.13	0.58	2.19
Gender	Male	Female	1.02	0.57	1.85
Race/Ethnicity	Black	White	0.85	0.35	2.09
	Hispanic		0.70	0.16	3.01
	Other		—	—	—
<b>PARENT</b>					
Age	18-25	35-45	—	—	—
	26-34		1.06	0.48	2.36
	46 and over		1.32	0.66	2.62
Marital Status	Single	Married/Cohabitate	0.43	0.14	1.26
	Divorced/Separated/Widowed		1.88	0.94	3.75
Education Status	Less than High School	Some College and higher degree	1.61	0.62	4.18
	High School or equivalent		1.70	0.86	3.38
County/Region	Appalacian	Metropolitan	0.66	0.28	1.57
	Rural (Non-Appalacian)		1.42	0.62	3.24
	Suburban		0.67	0.24	1.85

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.69

Note:— n too small to generate stable coefficients

**Table E6. Economic Stressors: Unable to Pay Rent, Mortgage, or Utility Bill**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>2.42</b>	1.41	4.16
	Developmental, behavioral, and emotional problems		1.31	0.76	2.27
Health Insurance Status	Medicaid,	Job-based	<b>3.52</b>	2.40	5.17
	Other		1.10	0.62	1.93
	Uninsured		<b>2.67</b>	1.31	5.44
Age	0-5	13-17	1.21	0.80	1.84
	6-12		1.30	0.90	1.87
Gender	Male	Female	1.16	0.86	1.57
Race/Ethnicity	Black	White	<b>1.62</b>	1.03	2.55
	Hispanic		0.71	0.34	1.48
	Other		1.04	0.50	2.17
<b>PARENT</b>					
Age	18-25	35-45	1.02	0.55	1.89
	26-34		1.05	0.70	1.57
	46 and over		<b>0.57</b>	0.39	0.83
Marital Status	Single	Married/Cohabitate	0.86	0.52	1.42
	Divorced/Separated/Widowed		<b>2.44</b>	1.67	3.55
Education Status	Less than High School	Some College and higher degree	1.13	0.67	1.91
	High School or equivalent		1.39	0.98	1.98
County/Region	Appalacian	Metropolitan	0.95	0.62	1.45
	Rural (Non-Appalacian)		0.74	0.48	1.15
	Suburban		0.70	0.45	1.10

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.76

**Table E7. Economic Stressors: Received Financial Help to Pay for Rent, Mortgage or Utility Bill**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations		<b>2.06</b>	1.02	4.15
	Developmental, behavioral, and emotional problems	Non-CCHC	1.11	0.52	2.34
Health Insurance Status	Medicaid,		<b>10.07</b>	5.08	19.97
	Other	Job-based	<b>2.77</b>	1.08	7.08
	Uninsured		2.83	0.81	9.83
Age	0-5	13-17	1.14	0.62	2.09
	6-12		1.30	0.75	2.24
Gender	Male	Female	0.86	0.54	1.36
Race/Ethnicity	Black		1.33	0.73	2.43
	Hispanic	White	1.20	0.43	3.37
	Other		1.07	0.24	4.79
<b>PARENT</b>					
Age	18-25		0.70	0.27	1.80
	26-34	35-45	0.95	0.54	1.69
	46 and over		0.61	0.33	1.11
Marital Status	Single	Married/Cohabitate	0.79	0.40	1.56
	Divorced/Separated/Widowed		1.32	0.77	2.27
Education Status	Less than High School	Some College and higher degree	0.74	0.32	1.71
	High School or equivalent		1.08	0.64	1.85
County/Region	Appalacian	Metropolitan	1.34	0.72	2.49
	Rural (Non-Appalacian)		1.26	0.64	2.46
	Suburban		0.81	0.38	1.73

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.79

**Table E8. Economic Stressors: Children Moved in With Others Due to Inability to Pay Bills**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	2.08	0.65	6.62
	Developmental, behavioral, and emotional problems		1.76	0.63	4.86
Health Insurance Status	Medicaid,	Job-based	<b>4.88</b>	1.54	15.43
	Other		2.07	0.57	7.51
	Uninsured		<b>10.63</b>	3.06	36.88
Age	0-5	13-17	1.33	0.58	3.07
	6-12		1.75	0.80	3.86
Gender	Male	Female	0.73	0.39	1.36
	Black		White	1.84	0.85
Race/Ethnicity	Hispanic	2.23		0.71	7.05
	Other	1.17		0.23	5.94
<b>PARENT</b>					
Age	18-25	35-45	2.39	0.79	7.17
	26-34		1.36	0.59	3.14
	46 and over		0.80	0.34	1.87
Marital Status	Single	Married/Cohabitate	1.64	0.73	3.71
	Divorced/Separated/Widowed		<b>2.53</b>	1.12	5.72
Education Status	Less than High School	Some College and higher degree	0.86	0.31	2.41
	High School or equivalent		0.79	0.42	1.48
County/Region	Appalacian	Metropolitan	1.37	0.61	3.11
	Rural (Non-Appalacian)		0.55	0.19	1.61
	Suburban		1.54	0.67	3.55

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
 C-statistic Value=0.84

**Table E9. Economic Stressors: Savings Will Cover Expenses for Less Than 6 Months**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>2.17</b>	1.09	4.32
	Developmental, behavioral, and emotional problems		1.42	0.80	2.55
Health Insurance Status	Medicaid,	Job-based	<b>1.65</b>	1.16	2.36
	Other		0.82	0.50	1.35
	Uninsured		<b>2.66</b>	1.18	5.98
Age	0-5	13-17	0.77	0.51	1.15
	6-12		0.91	0.66	1.26
Gender	Male	Female	0.98	0.74	1.28
Race/Ethnicity	Black	White	1.11	0.70	1.77
	Hispanic		0.63	0.32	1.21
	Other		0.75	0.41	1.38
<b>PARENT</b>					
Age	18-25	35-45	1.24	0.58	2.63
	26-34		1.07	0.71	1.62
	46 and over		<b>0.47</b>	0.34	0.66
Marital Status	Single	Married/Cohabitate	0.67	0.39	1.15
	Divorced/Separated/Widowed		<b>1.67</b>	1.09	2.57
Education Status	Less than High School	Some College and higher degree	1.79	0.99	3.22
	High School or equivalent		1.31	0.95	1.81
County/Region	Appalacian	Metropolitan	1.27	0.86	1.87
	Rural (Non-Appalacian)		1.29	0.85	1.93
	Suburban		0.98	0.66	1.44

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.65

**Table E10. Psychological Stressors: Feeling Sad All or Most of the Time in the Past 30 Days**

			2010		
Variables	Category	Reference	Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>2.70</b>	1.16	6.29
	Developmental, behavioral, and emotional problems		1.41	0.61	3.29
Health Insurance Status	Medicaid,	Job-based	<b>2.49</b>	1.21	5.15
	Other		2.14	0.86	5.33
	Uninsured		<b>5.66</b>	2.20	14.56
Age	0-5	13-17	0.95	0.48	1.89
	6-12		0.94	0.52	1.69
Gender	Male	Female	1.02	0.62	1.66
Race/Ethnicity	Black	White	1.51	0.79	2.89
	Hispanic		0.76	0.27	2.15
	Other		1.03	0.32	3.38
<b>PARENT</b>					
Age	18-25	35-45	0.29	0.08	1.02
	26-34		<b>0.36</b>	0.17	0.75
	46 and over		0.86	0.50	1.48
Marital Status	Single	Married/Cohabitate	2.01	0.93	4.37
	Divorced/Separated/Widowed		<b>1.83</b>	1.00	3.34
Education Status	Less than High School	Some College and higher degree	<b>2.52</b>	1.25	5.06
	High School or equivalent		1.44	0.77	2.71
County/Region	Appalacian	Metropolitan	0.71	0.34	1.47
	Rural (Non-Appalacian)		0.93	0.39	2.21
	Suburban		0.85	0.39	1.85

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.76

**Table E11. Psychological Stressors: Feeling Nervous All or Most of the Time in the Past 30 Days**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>3.47</b>	1.62	7.42
	Developmental, behavioral, and emotional problems		0.71	0.33	1.54
Health Insurance Status	Medicaid,	Job-based	<b>3.34</b>	1.67	6.69
	Other		1.77	0.79	3.96
	Uninsured		<b>7.43</b>	3.12	17.73
Age	0-5	13-17	1.07	0.57	2.00
	6-12		1.34	0.79	2.29
Gender	Male	Female	1.37	0.86	2.19
Race/Ethnicity	Black	White	0.77	0.40	1.50
	Hispanic		0.53	0.20	1.43
	Other		0.26	0.06	1.11
<b>PARENT</b>					
Age	18-25	35-45	<b>0.34</b>	0.12	0.98
	26-34		<b>0.54</b>	0.29	1.00
	46 and over		0.67	0.39	1.15
Marital Status	Single	Married/Cohabitate	<b>2.32</b>	1.18	4.59
	Divorced/Separated/Widowed		<b>1.97</b>	1.08	3.59
Education Status	Less than High School	Some College and higher degree	1.58	0.79	3.18
	High School or equivalent		1.25	0.72	2.17
County/Region	Appalacian	Metropolitan	1.19	0.66	2.17
	Rural (Non-Appalacian)		0.85	0.39	1.88
	Suburban		0.87	0.44	1.74

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.76

**Table E12. Psychological Stressors: Feeling Restless All or Most of the Time in the Past 30 Days**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>3.14</b>	1.61	6.13
	Developmental, behavioral, and emotional problems		1.84	0.92	3.66
Health Insurance Status	Medicaid,	Job-based	<b>3.24</b>	1.81	5.81
	Other		1.49	0.66	3.34
	Uninsured		<b>4.90</b>	2.09	11.49
Age	0-5	13-17	0.85	0.48	1.48
	6-12		0.99	0.61	1.60
Gender	Male	Female	1.37	0.90	2.07
	Black		White	0.99	0.55
Race/Ethnicity	Hispanic	0.68		0.25	1.88
	Other	1.00		0.33	2.97
<b>PARENT</b>					
Age	18-25	35-45	0.72	0.32	1.64
	26-34		0.91	0.53	1.59
	46 and over		0.76	0.46	1.26
Marital Status	Single	Married/Cohabitate	1.35	0.70	2.63
	Divorced/Separated/Widowed		<b>1.84</b>	1.12	3.02
Education Status	Less than High School	Some College and higher degree	<b>3.02</b>	1.65	5.53
	High School or equivalent		1.58	0.98	2.54
County/Region	Appalacian	Metropolitan	1.62	0.94	2.80
	Rural (Non-Appalacian)		0.69	0.34	1.42
	Suburban		1.08	0.58	2.03

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.77

**Table E13. Psychological Stressors: Feeling Hopeless All or Most of the Time in the Past 30 Days**

			2010		
Variables	Category	Reference	Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>3.34</b>	1.43	7.81
	Developmental, behavioral, and emotional problems		0.89	0.34	2.34
Health Insurance Status	Medicaid,	Job-based	<b>4.81</b>	1.90	12.20
	Other		<b>6.33</b>	2.45	16.32
	Uninsured		<b>14.61</b>	5.14	41.55
Age	0-5	13-17	<b>0.42</b>	0.18	0.95
	6-12		0.69	0.37	1.29
Gender	Male	Female			
Race/Ethnicity	Black	White	1.07	0.49	2.34
	Hispanic		0.84	0.27	2.59
	Other		0.43	0.05	3.60
<b>PARENT</b>					
Age	18-25	35-45	0.52	0.12	2.22
	26-34		0.72	0.33	1.58
	46 and over		0.68	0.36	1.30
Marital Status	Single	Married/Cohabitate	1.31	0.53	3.23
	Divorced/Separated/Widowed		1.90	0.96	3.78
Education Status	Less than High School	Some College and higher degree	1.18	0.50	2.80
	High School or equivalent		1.47	0.73	2.97
County/Region	Appalacian	Metropolitan	0.96	0.46	1.99
	Rural (Non-Appalacian)		0.74	0.25	2.16
	Suburban		1.22	0.53	2.78

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.79

**Table E14. Psychological Stressors: Everything is an Effort All or Most of the Time in the Past 30 Days**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	1.01	0.45	2.25
	Developmental, behavioral, and emotional problems		1.82	0.99	3.36
Health Insurance Status	Medicaid,	Job-based	<b>2.37</b>	1.45	3.88
	Other		<b>2.15</b>	1.11	4.20
	Uninsured		<b>5.23</b>	2.39	11.40
Age	0-5	13-17	1.05	0.63	1.76
	6-12		1.09	0.70	1.71
Gender	Male	Female	1.30	0.91	1.86
Race/Ethnicity	Black	White	<b>1.65</b>	1.01	2.70
	Hispanic		<b>0.32</b>	0.11	0.91
	Other		1.07	0.45	2.58
<b>PARENT</b>					
Age	18-25	35-45	0.90	0.45	1.78
	26-34		0.95	0.58	1.55
	46 and over		0.77	0.49	1.21
Marital Status	Single	Married/Cohabitate	<b>1.78</b>	1.05	3.02
	Divorced/Separated/Widowed		<b>1.69</b>	1.08	2.65
Education Status	Less than High School	Some College and higher degree	<b>1.89</b>	1.04	3.43
	High School or equivalent		1.39	0.92	2.08
County/Region	Appalacian	Metropolitan	1.11	0.66	1.86
	Rural (Non-Appalacian)		0.47	0.25	0.90
	Suburban		1.36	0.81	2.29

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.77

**Table E15. Psychological Stressors: Feeling Worthless All or Most of the Time in the Past 30 Days**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	2.61	0.90	7.56
	Developmental, behavioral, and emotional problems		1.14	0.38	3.46
Health Insurance Status	Medicaid,	Job-based	<b>6.85</b>	2.23	21.05
	Other		<b>4.87</b>	1.39	17.03
	Uninsured		<b>14.43</b>	4.22	49.28
Age	0-5	13-17	<b>0.17</b>	0.05	0.52
	6-12		0.69	0.32	1.51
Gender	Male	Female	0.73	0.37	1.44
Race/Ethnicity	Black	White	1.21	0.50	2.93
	Hispanic		0.80	0.23	2.82
	Other		1.27	0.20	7.98
<b>PARENT</b>					
Age	18-25	35-45	<b>0.06</b>	0.01	0.53
	26-34		0.47	0.17	1.30
	46 and over		<b>0.45</b>	0.21	0.95
Marital Status	Single	Married/Cohabitate	1.30	0.51	3.33
	Divorced/Separated/Widowed		1.33	0.58	3.03
Education Status	Less than High School	Some College and higher degree	2.26	0.82	6.25
	High School or equivalent		1.54	0.74	3.22
County/Region	Appalacian	Metropolitan	0.98	0.40	2.43
	Rural (Non-Appalacian)		0.28	0.08	1.03
	Suburban		1.17	0.47	2.94

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval

C-statistic Value=0.81

**Table E16. Kessler 6 Composite Score > 12**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>4.08</b>	1.89	8.81
	Developmental, behavioral, and emotional problems		0.85	0.39	1.85
Health Insurance Status	Medicaid,	Job-based	<b>4.40</b>	2.19	8.86
	Other		<b>2.94</b>	1.30	6.63
	Uninsured		<b>10.50</b>	4.48	24.63
Age	0-5	13-17	0.82	0.43	1.59
	6-12		1.18	0.68	2.03
Gender	Male	Female	1.10	0.68	1.78
	Black	White	0.85	0.45	1.60
Hispanic	0.69		0.25	1.86	
Other	0.44		0.09	2.14	
<b>PARENT</b>					
Age	18-25	35-45	0.41	0.13	1.33
	26-34		0.68	0.35	1.31
	46 and over		1.06	0.62	1.81
Gender	Male	Female	1.10	0.68	1.78
Marital Status	Single	Married/Cohabitate	<b>2.12</b>	1.01	4.46
	Divorced/Separated/Widowed		<b>1.99</b>	1.12	3.56
Education Status	Less than High School	Some College and higher degree	1.74	0.86	3.53
	High School or equivalent		1.72	0.97	3.05
County/Region	Appalacian	Metropolitan	0.94	0.49	1.81
	Rural (Non-Appalacian)		0.89	0.39	2.02
	Suburban		0.97	0.47	1.98

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.80

**Table E17. Need Treatment or Counseling for Mental Health**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	<b>2.34</b>	1.10	4.96
	Developmental, behavioral, and emotional problems		<b>2.61</b>	1.40	4.84
Health Insurance Status	Medicaid,	Job-based	<b>2.89</b>	1.67	5.00
	Other		<b>2.22</b>	1.16	4.23
	Uninsured		2.31	0.83	6.47
Age	0-5	13-17	0.83	0.46	1.50
	6-12		1.06	0.67	1.68
Gender	Male	Female	0.78	0.52	1.15
	Black		White	1.09	0.59
Race/Ethnicity	Hispanic	0.50		0.18	1.36
	Other	<b>0.23</b>		0.06	0.95
<b>PARENT</b>					
Age	18-25	35-45	0.73	0.32	1.69
	26-34		0.60	0.34	1.07
	46 and over		<b>0.60</b>	0.37	0.97
Marital Status	Single	Married/Cohabitate	1.75	0.88	3.49
	Divorced/Separated/Widowed		1.28	0.77	2.13
Education Status	Less than High School	Some College and higher degree	0.84	0.44	1.61
	High School or equivalent		0.64	0.39	1.05
County/Region	Appalacian	Metropolitan	0.77	0.44	1.34
	Rural (Non-Appalacian)		<b>0.50</b>	0.25	0.98
	Suburban		0.74	0.41	1.32

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
 C-statistic Value=0.71

**Table E18. Need Social Support**

Variables	Category	Reference	2010		
			Odds	95% CI	
<b>CHILD</b>					
CCHC status	Functional Limitations	Non-CCHC	2.37	0.79	7.08
	Developmental, behavioral, and emotional problems		1.67	0.62	4.45
Health Insurance Status	Medicaid,	Job-based	1.25	0.51	3.11
	Other		0.34	0.09	1.37
	Uninsured		0.15	0.01	2.12
Age	0-5	13-17	1.91	0.73	4.97
	6-12		<b>3.48</b>	1.46	8.26
Gender	Male	Female	1.74	0.83	3.64
	Race/Ethnicity	Black	White	<b>4.42</b>	1.85
	Hispanic		1.70	0.25	11.46
	Other		0.43	0.03	6.06
<b>PARENT</b>					
Age	18-25	35-45	0.97	0.18	5.23
	26-34		0.65	0.22	1.91
	46 and over		0.69	0.32	1.48
Marital Status	Single	Married/Cohabitate	1.00	0.34	2.96
	Divorced/Separated/Widowed		1.40	0.61	3.21
Education Status	Less than High School	Some College and higher degree	1.05	0.36	3.06
	High School or equivalent		0.47	0.20	1.10
County/Region	Appalacian	Metropolitan	1.49	0.50	4.38
	Rural (Non-Appalacian)		0.51	0.11	2.39
	Suburban		0.59	0.17	1.99

Odds = adjusted odds ratio (significant difference from reference highlighted in bold, italics, and cell shaded grey); CI = confidence interval  
C-statistic Value=0.67

## APPENDIX F: Comparison of Children and Parent Demographics and Stress Based by Job-Based and Medicaid Child Health Insurance Coverage

Table F1. Child Demographics and Health by Insurance Status

	Job-based coverage				Medicaid			
	CCHC		Non-CCHC		CCHC		Non-CCHC	
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>	102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%
<b>Age Category <sup>0</sup></b>								
0-5 Years	14,288	13.9% 2.5-2.4	284,039	25.4% 22.0-29.0	32,729	17.6% 9.0-26.3	353,493	44.5% 38.9-50.2
6-12 Years	55,035	53.7% 39.0-67.3	442,655	39.7% 35.8-43.5	80,668	43.5% 32.6-54.7	248,188	31.3% 26.0-36.5
13-17 Years	33,212	32.4% 19.3-45.5	388,104	34.8% 31.2-38.4	72,162	38.9% 28.4-49.3	191,941	24.2% 19.6-28.8
<b>Gender</b>								
Male	71,487	69.7% 56.6-82.9	567,705	50.9% 47.0-54.8	114,697	61.8% 56.6-82.9	399,503	50.3% 44.7-56.0
Female	31,048	30.3% 17.1-43.4	547,093	49.1% 45.2-53.0	70,862	38.2% 27.7-48.7	394,119	49.7% 44.0-55.3
<b>Race and Ethnicity <sup>0,1</sup></b>								
White (Only, Not Hispanic)	75,217	77.7% 65.0-90.4	973,000	88.0% 85.7-90.4	136,594	73.6% 65.5-81.7	459,956	58.7% 53.3-64.2
African American (Only, Not Hispanic)	7,903	8.2% 0.0-16.9	62,539	5.7% 3.9-7.4	42,119	22.7% 15.1-30.3	250,743	32.0% 26.8-37.2
Hispanic (Any Race)	12,476	12.9% 2.4-23.4	37,863	3.4% 2.1-4.8	5,368	2.9% 0.0-5.9	53,468	6.8% 3.7-9.9
Other (Includes Multiracial, Not Hispanic)	1,204	1.2% 0.0-3.0	31,846	2.9% 1.9-3.9	1,478	0.8% 0.0-1.9	19,149	2.4% 0.9-4.0
<b>General Health <sup>0,1</sup></b>								
Excellent	32,172	31.3% 18.4-44.4	736,087	66.0% 62.3-69.8	45,428	24.8% 15.4-34.2	435,658	54.9% 49.3-60.5
Very Good	48,899	47.7% 33.1-62.3	318,910	28.6% 25.0-32.2	59,104	32.3% 22.1-24.5	230,927	29.1% 24.0-34.2
Good / Fair / Poor	21,464	20.9% 9.6-32.2	59,800	5.4% 3.7-7.1	78,620	42.9% 32.1-53.7	127,036	16.0% 11.8-20.2

Note: Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

**Table F2. Parents Socio-demographics and Health by Child Insurance Status**

	Job-based coverage				Medicaid			
	CCHC		Non-CCHC		CCHC		Non-CCHC	
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>	102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%
<b>Age Category <sup>0,1</sup></b>								
18-24 Years	2,939	2.9% 0.0-6.9	28,962	2.6% 1.2-4.0	15,985	8.6% 2.2-15.0	125,026	15.8% 11.7-19.8
25-34 Years	13,313	13.0% 1.2-24.8	240,825	21.6% 18.3-24.9	64,823	34.9% 23.8-46.1	261,098	32.9% 27.5-38.3
35-44 Years	52,814	51.5% 36.8-66.2	478,274	42.9% 39.0-46.8	50,539	27.2% 17.8-36.6	222,706	28.1% 22.9-33.2
45 years and over	33,469	32.6% 19.6-45.7	366,736	32.9% 29.4-36.4	54,211	29.2% 20.3-38.1	184,792	23.3% 18.8-27.8
<b>Marital Status <sup>0,1</sup></b>								
Married	76,262	74.4% 61.5-87.3	959,126	86.0% 83.3-88.7	90,293	48.7% 37.8-59.5	367,336	46.6% 41.0-52.3
Single	7,520	7.3% 0.0-15.5	46,707	4.2% 2.6-5.8	43,818	23.6% 14.8-32.4	195,910	24.9% 20.0-29.7
Divorced/Separated/Widowed	18,754	18.3% 7.1-29.5	108,964	9.8% 7.5-12.0	51,448	27.7% 17.9-37.5	224,622	28.5% 23.5-33.6
<b>Education Status <sup>0</sup></b>								
Less than High School	9,255	9.0% 0.0-18.9	20,573	1.8% 0.8-2.9	29,342	15.8% 8.0-23.7	123,529	15.6% 11.4-19.8
High School or equivalent	23,967	23.4% 11.2-35.5	265,377	23.8% 20.5-27.2	67,688	36.5% 25.8-47.2	319,828	40.4% 34.9-45.9
Some College and higher degree	69,313	67.6% 53.5-81.7	828,848	74.3% 70.9-77.8	88,530	47.7% 36.6-58.8	348,575	44.0% 38.4-49.6
<b>Poverty Status (as % of FPL) <sup>0,1</sup></b>								
< 100%	8,287	8.1% 0.0-16.6	93,393	8.4% 5.9-10.9	123,205	66.4% 56.4-76.4	493,112	62.1% 56.8-67.5
101% - 200%	22,839	22.3% 10.2-34.3	183,503	16.5% 13.5-19.5	38,656	20.8% 12.0-29.6	193,508	24.4% 19.7-29.1
201% - 300%	8,867	8.6% 1.3-16.0	260,577	23.4% 20.0-26.8	8,216	4.4% 1.0-7.9	68,420	8.6% 5.7-11.5
> 300%	62,542	61.0% 46.7-75.3	577,324	51.8% 47.9-55.7	15,482	8.3% 3.7-13.0	38,582	4.9% 2.8-6.9
<b>Health Insurance <sup>0,1</sup></b>								
Job-Based Coverage	89,413	88.0% 79.1-97.0	1,048,699	94.2% 92.4-96.1	22,803	12.4% 5.8-19.0	98,417	12.5% 9.0-15.9
Medicaid	2,595	2.6% 0.0-6.5	7,442	0.7% 0.1-1.2	100,129	54.5% 43.8-65.3	503,432	63.8% 58.5-69.1
Other	1,868	1.8% 0.0-4.1	21,819	2.0% 1.0-2.9	14,690	8.0% 3.2-12.8	34,409	4.4% 2.2-6.5
Uninsured	7,690	7.6% 0.0-15.5	34,521	3.1% 1.6-4.7	46,087	25.1% 15.3-34.9	152,621	19.3% 14.9-23.8
<b>Health Status <sup>0,1</sup></b>								
Excellent	16,134	15.7% 6.3-25.2	301,733	27.1% 23.6-30.5	12,781	6.9% 2.1-11.7	112,541	14.2% 10.4-18.1
Very Good	40,012	39.0% 24.8-53.3	466,625	41.9% 38.0-45.7	38,522	20.8% 11.5-30.1	208,669	26.4% 21.4-31.3
Good/Fair/Poor	46,389	45.2% 30.6-59.9	346,439	31.1% 27.5-34.7	133,751	72.3% 62.4-82.1	470,079	59.4% 54.0-64.9
<b>Region of Residence <sup>0</sup></b>								
Appalachian	10,061	9.8% 3.0-16.6	148,550	13.3% 11.3-15.3	32,089	17.3% 10.7-23.8	143,767	18.1% 14.5-21.8
Metropolitan	64,823	63.2% 51.1-75.3	569,575	51.1% 48.2-54.0	106,668	57.5% 49.0-65.9	472,642	59.6% 54.7-64.4
Rural (Non-Appalachian)	11,077	10.8% 3.6-18.0	184,077	16.5% 14.5-18.6	31,900	17.2% 10.2-24.2	72,141	9.1% 6.4-11.8
Suburban	16,574	16.2% 6.5-25.8	212,596	19.1% 16.9-21.2	14,902	8.0% 3.2-12.8	105,071	13.2% 9.7-16.8

Note: FPL = Federal Poverty Level  
Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

**Table F3. Financial Stressors on Parents by Child Insurance Status**

		Job-based coverage				Medicaid			
		CCHC		Non-CCHC		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%
<b>FINANCIAL STRESSORS</b>									
<b>Problems paying or unable to pay for medical bills</b> <sup>0,1</sup>	<b>Yes</b>	36,881	36.6% 22.5-50.8	302,498	27.2% 23.6-30.7	100,630	54.2% 43.3-65.1	345,792	43.6% 38.0-49.2
	<b>No</b>	63,810	63.4% 49.2-77.5	811,058	72.8% 69.3-76.4	84,928	45.8% 34.8-56.7	447,830	56.4% 50.8-62.0
<b>Unable to pay for basic necessities</b> <sup>0,1</sup>	<b>Yes</b>	12,832	12.7% 3.5-22.0	83,019	7.5% 5.4-9.5	65,442	35.3% 24.3-46.3	138,875	17.5% 13.2-21.8
	<b>No</b>	87,859	87.3% 78.0-96.5	1,030,537	92.5% 90.5-94.6	120,116	64.7% 53.7-75.7	654,747	82.5% 78.2-86.8
<b>Used up most of personal savings</b> <sup>0,1</sup>	<b>Yes</b>	22,741	22.6% 10.6-34.6	201,142	18.1% 15.0-21.2	76,214	41.1% 30.0-52.1	203,943	25.8% 20.8-30.7
	<b>No</b>	77,950	77.4% 65.4-89.4	911,095	81.9% 78.8-85.0	109,345	58.9% 47.8-70.0	587,419	74.2% 69.3-79.2
<b>Had large credit card debt or had to take a loan of any kind</b>	<b>Yes</b>	13,354	13.3% 3.7-22.8	111,290	10.0% 7.6-12.4	24,753	13.3% 6.2-20.5	87,077	11.0% 7.5-14.4
	<b>No</b>	87,337	86.7% 77.2-96.3	1,002,265	90.0% 87.6-92.4	160,806	86.7% 79.5-93.8	706,544	89.0% 85.6-92.5
<b>Had to declare bankruptcy</b>	<b>Yes</b>	4,011	4.0% 0.0-9.4	44,936	4.0% 2.3-5.8	15,918	8.6% 2.2-15.0	47,256	6.0% 3.3-8.6
	<b>No</b>	96,681	96.0% 90.6-100.0	1,068,619	96.0% 94.2-97.7	169,641	91.4% 85.0-97.8	298,536	94.0% 91.4-96.7

Note: Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

**Table F4. Economic Stressors on Parents by Child Insurance Status**

		Job-based coverage				Medicaid			
		CCHC		Non-CCHC		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%
<b>ECONOMIC STRESSORS</b>									
<b>Problems paying rent, mortgage, or utility bill</b> <sup>0,1</sup>	<b>Yes</b>	28,322	27.6% 14.3-40.9	155,083	13.9% 11.0-16.9	100,256	54.0% 43.2-64.9	366,453	46.3% 40.6-52.0
	<b>No</b>	74,213	72.4% 59.1-85.7	956,907	86.1% 83.1-89.0	85,302	46.0% 35.1-56.8	425,021	53.7% 8.0-59.4
<b>Received financial help to pay for rent, mortgage or utility bill</b> <sup>0,1</sup>	<b>Yes</b>	1,372	1.3% 0.0-3.4	24,752	2.2% 1.0-3.4	45,893	24.7% 15.0-34.5	144,888	18.3% 13.9-22.8
	<b>No</b>	101,163	98.7% 96.6-100.0	1,087,238	97.8% 96.6-99.0	139,666	75.3% 65.5-85.0	645,881	81.7% 77.2-86.1
<b>Children moved in with others due to inability to pay bills</b> <sup>0</sup>	<b>Yes</b>	7,511	7.3% 0.0-17.1	8,779	0.8% 0.1-1.5	22,487	12.1% 4.5-19.8	80,073	10.1% 6.8-13.4
	<b>No</b>	95,024	92.7% 82.9-100.0	1,103,211	99.2% 98.5-99.9	163,072	87.9% 80.2-95.5	711,402	89.9% 86.6-93.2
<b>Time savings will cover expenses</b> <sup>0</sup>	<b>Yes</b>	85,395	83.3% 72.9-93.6	748,644	69.2% 65.7-72.7	159,942	86.3% 80.0-92.7	596,418	81.7% 77.0-86.3
	<b>No</b>	17,140	16.7% 6.4-27.1	333,340	30.8% 27.3-34.3	25,286	13.7% 7.3-20.0	134,016	18.3% 13.7-23.0

Note: Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

**Table F5. Psychological Stressors on Parents by Child Insurance Status**

		Job-based coverage				Medicaid			
		CCHC		Non-CCHC		CCHC		Non-CCHC	
		Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI
<b>Children Aged 0-17 Years</b>		102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%
<b>PSYCHOLOGICAL STRESSORS</b>									
Feeling sad in last 30 days <sup>0,1</sup>	All or most of the time	15,119	14.7% 3.2-26.3	28,559	2.6% 1.3-3.8	24,009	13.2% 6.1-20.2	89,807	11.3% 7.6-15.0
	Some or little of the time	13,178	12.9% 3.2-22.5	170,831	15.4% 12.5-18.5	73,440	40.3% 29.3-51.2	233,136	29.4% 24.2-34.6
	None of the time	74,238	72.4% 58.8-86.0	910,897	82.0% 79.0-85.1	84,993	46.6% 35.4-57.7	470,215	59.3% 53.7-64.9
Feeling nervous in last 30 days <sup>0</sup>	All or most of the time	10,577	10.3% 1.0-19.7	35,897	3.2% 1.8-4.6	33,867	18.4% 9.7-27.1	103,041	13.0% 9.2-16.8
	Some or little of the time	36,860	35.9% 22.2-49.7	387,561	34.8% 31.1-38.6	77,605	42.1% 31.1-53.2	278,449	35.1% 29.7-40.5
	None of the time	55,098	53.7% 39.3-68.1	688,914	61.9% 58.1-65.7	72,679	39.5% 28.6-50.3	411,560	51.9% 46.3-57.5
Feel restless or fidgety in last 30 days <sup>0,1</sup>	All or most of the time	12,804	12.5% 1.9-23.1	40,480	3.6% 2.1-5.2	52,232	28.4% 18.3-38.5	130,108	16.4% 12.3-20.5
	Some or little of the time	32,547	31.7% 17.8-45.7	309,044	27.8% 24.3-31.3	68,256	37.1% 26.6-47.5	275,724	34.8% 29.3-40.3
	None of the time	57,185	55.8% 40.9-70.6	762,848	68.6% 65.0-72.2	63,664	34.6% 24.3-44.9	386,850	48.8% 43.2-54.4
Feel hopeless in last 30 days <sup>0,1</sup>	All or most of the time	6,556	6.4% 0.0-13.9	13,953	1.3% 0.4-2.1	19,799	10.8% 4.3-17.2	70,040	8.8% 5.6-12.1
	Some or little of the time	9,176	8.9% 1.4-16.5	106,969	9.6% 7.2-12.1	59,844	32.6% 22.1-42.9	153,845	19.4% 14.9-23.9
	None of the time	86,803	84.7% 74.4-95.0	990,296	89.1% 86.5-91.7	104,510	56.8% 45.8-67.7	569,032	71.8% 66.6-76.9
Feel everything is an effort in last 30 days <sup>0,1</sup>	All or most of the time	17,255	16.8% 5.6-28.1	79,879	7.3% 5.0-19.5	49,457	26.7% 17.8-35.6	189,815	24.4% 19.5-29.2
	Some or little of the time	27,708	27.0% 14.4-39.6	263,143	23.9% 20.6-27.3	80,561	43.5% 32.5-54.5	231,895	29.8% 24.5-35.0
	None of the time	57,571	56.1% 41.8-70.5	755,938	68.8% 65.1-72.5	55,209	29.8% 19.5-40.1	357,557	45.9% 40.2-51.6
Feel worthless in last 30 days <sup>0,1</sup>	All or most of the time	5,401	5.3% 0.0-12.6	5,638	0.5% 0.1-0.9	13,002	7.1% 2.5-11.6	47,840	6.0% 3.4-8.6
	Some or little of the time	4,368	4.3% 0.6-8.0	100,238	9.0% 6.6-11.4	52,953	28.8% 18.3-39.2	133,704	16.8% 12.5-21.2
	None of the time	92,766	90.5% 82.3-98.6	1,006,496	90.5% 88.1-92.9	118,197	64.2% 53.4-75.0	612,078	77.1% 72.3-81.9
Kessler 6 <sup>0</sup>	<=12	92,379	90.1% 81.0-99.2	1,091,306	97.9% 96.8-99.0	149,791	80.7% 71.9-89.5	692,670	87.3% 83.6-91.0
	>12	10,157	9.9% 0.8-19.0	23,492	2.1% 1.0-3.2	35,767	19.3% 10.5-28.0	100,952	12.7% 9.0-16.4

Note: Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

**Table F6. Mental Health Needs for Parents Caring by Child Insurance Status**

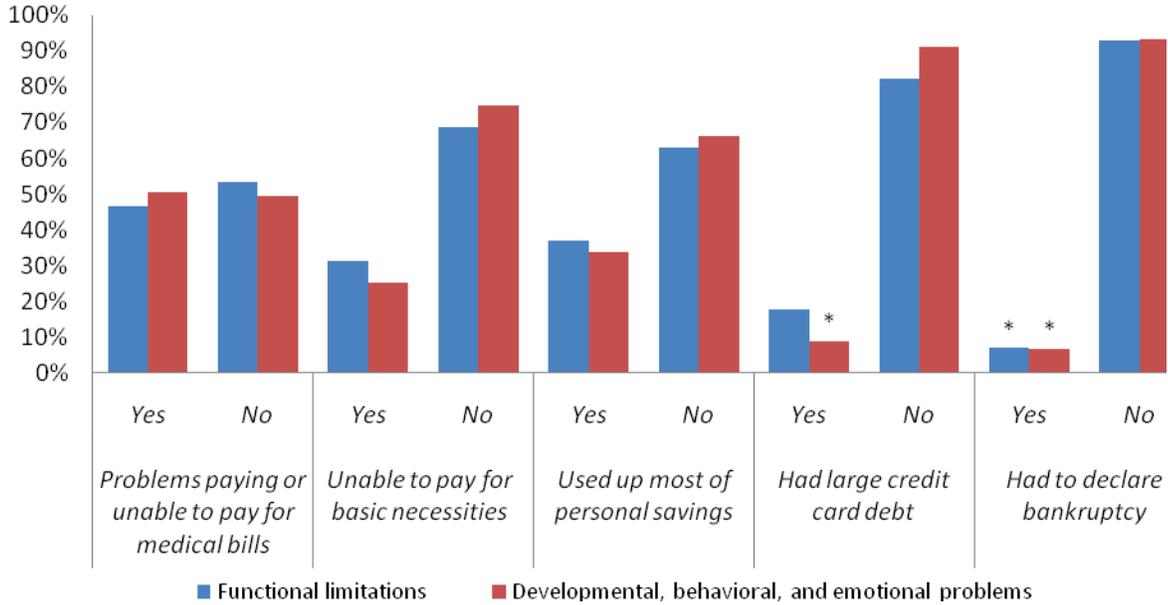
	Job-based coverage				Medicaid				
	CCHC		Non-CCHC		CCHC		Non-CCHC		
	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	Number of Children	Percent of Children 95% CI	
<b>Children Aged 0-17 Years</b>	102,535	8.4%	1,114,798	91.6%	185,559	19.0%	793,622	81.0%	
<b>Other Mental Health Care Needs</b>									
Number of days in past month prevented from doing work or usual activities due to mental health condition or emotional issue <sup>0,1</sup>	<b>0 days</b>	92,144	89.9% 80.9-98.9	1,005,296	90.5% 88.1-93.0	108,066	58.2% 47.4-69.1	587,855	74.2% 69.1-79.2
	<b>At least 1 day</b>	10,391	10.1% 1.1-19.1	105,094	9.5% 7.0-11.9	77,493	41.8% 30.9-52.6	20,613	25.8% 20.8-30.9
Need assistance with personal care, such as bathing, dressing, toileting, or feeding <sup>0</sup>	<b>Yes</b>	721	3.0% 0.0-9.2	3,726	3.8% 0.0-8.0	2,004	2.5% 0.1-4.9	20,613	12.5% 4.2-20.7
	<b>No</b>	23,475	97.0% 90.8-100.0	93,346	96.2% 91.9-100.0	78,388	97.5% 95.1-99.9	144,859	87.5% 79.3-95.8
Need domestic assistance, such as shopping, laundry, housekeeping, cooking, or transportation <sup>0</sup>	<b>Yes</b>	4,003	16.5% 0.0-39.4	20,295	20.9% 10.2-31.6	27,137	33.8% 18.3-49.2	65,609	40.1% 27.8-52.3
	<b>No</b>	20,192	83.5% 60.8- 100.0	76,778	79.1% 68.4-89.8	53,254	66.2% 50.7-81.7	98,154	59.9% 47.7-72.1
Need treatment of counseling for mental health, substance abuse or emotional problem <sup>0</sup>	<b>Yes</b>	17,835	17.4% 5.8-28.9	58,369	5.2% 3.6-6.9	51,428	27.7% 17.8-37.6	122,563	15.4% 11.4-19.5
	<b>No</b>	84,700	82.6% 71.0-94.1	1,055,245	94.8% 93.1-96.4	134,131	72.3% 62.4-82.2	671,059	84.6% 80.5-88.6
Need social support	<b>Yes</b>	7,303	30.2% 1.5-58.8	22,155	23.1% 10.8-35.3	36,401	46.1% 29.6-62.5	49,070	29.3% 18.2-40.4
	<b>No</b>	16,893	69.8% 41.2-98.5	73,843	76.9% 64.6-89.2	42,583	53.9% 37.4-70.4	118,363	70.7% 59.6-81.7

Note: Shaded cells, RSE>30

<sup>0</sup> p<0.05 for difference between Non-CCHC and child insurance status; <sup>1</sup> p<0.05 for 2010 difference between CCHC and child insurance status

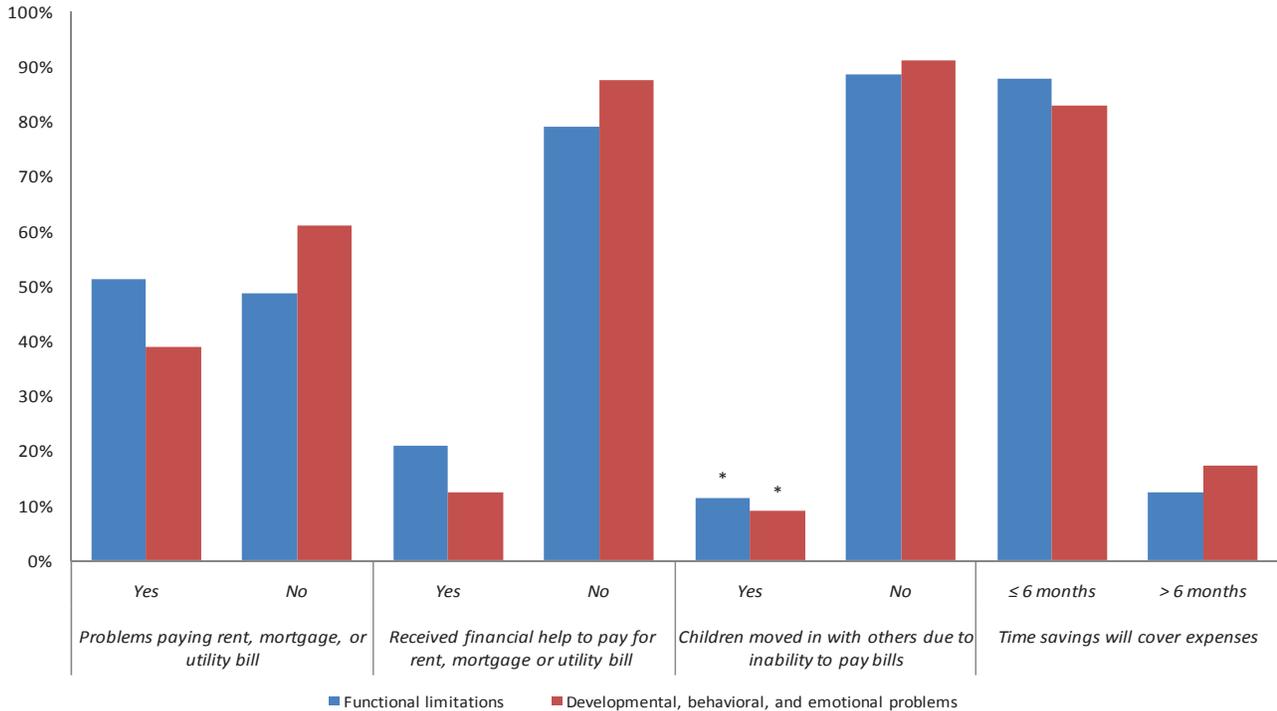
## APPENDIX G: Parental Stress by Complex Condition of Children (Functional Limitations or Developmental, Behavioral, Emotional Problems)

**Graph G1. Prevalence of Financial Stress among Parents of Children with Functional limitations vs. Parents of Children with Developmental, Behavioral and Emotional Problems**



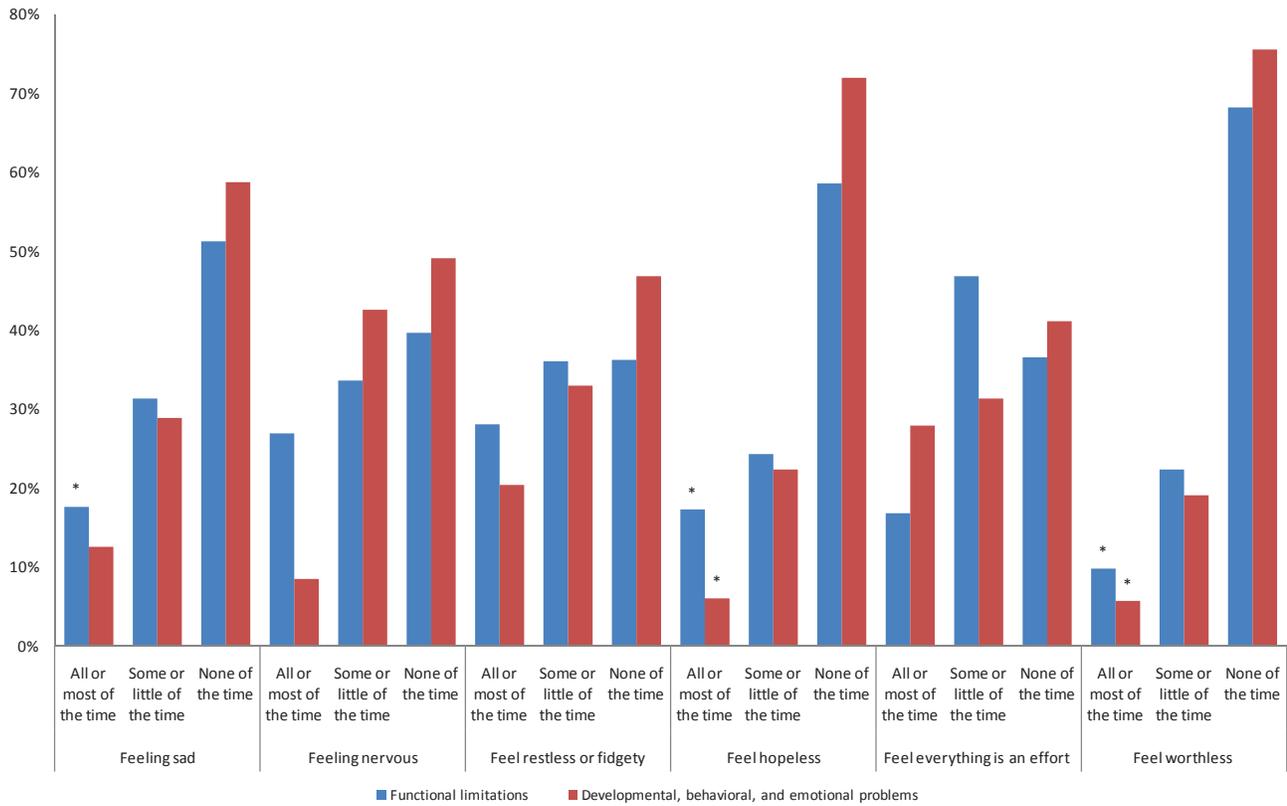
Note: \* RSE>30

**Graph G2. Prevalence of Economic Stress among Parents of Children with Functional limitations vs. Parents of Children with Developmental, Behavioral and Emotional Problems**



Note: \* RSE>30

**Graph G3. Prevalence of Psychological Stress among Parents of Children with Functional limitations vs. Parents of Children with Developmental, Behavioral and Emotional Problems**



Note: \* RSE>30

**APPENDIX H: Description of Waivers**

	Ohio Home Care Waiver	Individual Options Waiver	Level One Waiver
<b>Date Originally Approved</b>	07/01/1999	03/1/1991	—
<b>Implementation Date</b>	07/01/2006	03/1/2009	2003
<b>Expiration Date</b>	06/30/2011	2/28/2014	—
<b>Definition of Waiver</b>	The Ohio Home Care Waiver is a limited-enrollment, cost-capped program of home and community services for people with serious disabilities and unstable medical conditions.	Individual Options Waiver (IO Waiver) is for people with mental retardation or developmental disabilities who meet the waiver's eligibility requirements.	The Level 1 Waiver is for people with mental retardation or developmental disabilities who meet the waiver's eligibility requirements.
<b>Objectives</b>	Designed to meet the home care needs of people who have certain medical conditions and/or functional abilities that would qualify them for Medicaid coverage in a nursing home or hospital.	Services provided through this waiver allow people to stay in their homes and get support rather than living in an Intermediate Care Facility (ICF/MR).	Services provided through this waiver allow people to stay in their homes and get support rather than living in an Intermediate Care Facility (ICF/MR).
<b>Eligibility</b>	<ul style="list-style-type: none"> <li>- Specific financial criteria</li> <li>- Intermediate or skilled level of care</li> <li>- Age 59 or younger.</li> </ul>	<ul style="list-style-type: none"> <li>- Specific financial criteria.</li> <li>- ICF/MR level of care</li> <li>- All ages.</li> </ul>	<ul style="list-style-type: none"> <li>- Specific financial criteria</li> <li>- ICF/MR level of care</li> <li>- All ages.</li> </ul>
<b>Services Covered</b>	<ul style="list-style-type: none"> <li>- Out of Home Respite Services</li> <li>- Adult Day Health Services</li> <li>- Supplemental Adaptive and Assistive Device Services</li> <li>- Supplemental Transportation Services</li> <li>- Emergency Response Services</li> <li>- Home Modification Services</li> <li>- Personal Care Aide Services</li> <li>- Home Delivered Meal Services</li> <li>- Home Care Attendant Services.</li> </ul>	<ul style="list-style-type: none"> <li>- Homemaker/Personal Care</li> <li>- Home Modifications and Adaptations</li> <li>- Transportation</li> <li>- Respite Care</li> <li>- Social Work</li> <li>- Home-delivered meals</li> <li>- Nutrition</li> <li>- Interpreter Services</li> <li>- Specialized Adaptive or Assistive Medical Equipment and Supplies</li> <li>- Adult Day Services</li> <li>- Supported Employment.</li> </ul>	<ul style="list-style-type: none"> <li>- Homemaker/Personal Care</li> <li>- Institutional Respite</li> <li>- Informal Respite</li> <li>- Transportation</li> <li>- Personal Emergency Response Systems</li> <li>- Specialized Medical Equipment and Supplies</li> <li>- Environmental Accessibility Adaptations</li> <li>- Emergency Assistance</li> <li>- Supported Employment</li> <li>- Day Habilitation.</li> </ul>
<b>Service Annual Limit</b>	—	—	<ul style="list-style-type: none"> <li>- Homemaker/Personal Care (\$1,000)</li> <li>- Institutional Respite (\$1,000)</li> <li>- Informal Respite (\$2,500)</li> <li>- Transportation (\$500).</li> </ul>
<b>Administration</b>	The Ohio Department of Job and Family Services (ODJFS) administers this waiver program. ODJFS contracts with a Case Management Agency (CMA) to provide case management services.	The Ohio Department of Developmental Disabilities (DODD) administers the day to day operations of this waiver program as outlined in the interagency agreement with ODJFS, who has the overall responsibility for the program. Local County boards of DD provide case management services.	DODD administers the day to day operations of this waiver program as outlined in the interagency agreement with ODJFS, who has the overall responsibility for the program. Local County boards of DD provide case management services.

Source: dodd.ohio.gov