

# NIH Public Access

**Author Manuscript** 

*Pediatrics*. Author manuscript; available in PMC 2010 December 1.

## Published in final edited form as:

Pediatrics. 2009 December ; 124(Suppl 4): S399-S406. doi:10.1542/peds.2009-1255K.

# Does private insurance adequately protect families of children with mental health disorders?

#### Susan H. Busch, PhD and

Associate Professor of Public Health, Yale University School of Medicine, Yale University School of Public Health

#### Colleen L. Barry, PhD

Assistant Professor of Public Health, Yale University School of Medicine, Yale University School of Public Health

# Abstract

**Objective**—Although private insurance typically covers many health care costs, the challenges faced by families caring for a sick child are substantial. These challenges may be more severe for CSHCN with mental illnesses than for other special needs children. Our objective is to determine whether families of privately insured children needing mental health care face different burdens than other families in caring for their children.

**Patients and Methods**—We use the 2005–2006 National Survey of Children with Special Health Care Needs (NS-CSHCN) to study privately insured children ages 6–17. We compare CSHCN with mental health care needs (N=4,918) to three groups: children with no SHCN (N=2,346), CSHCN with no mental health care needs (N=16,250), and CSHCN with no mental health care need but a need for other specialty services (N=7,902). The latter group is a subset of CSHCN with no mental health care need. We use weighted logistic regression and study outcomes across four domains: financial burden, health plan experiences, labor market and time effects, and parent experience with services.

**Results**—We find that families of children with mental health care needs face significantly greater financial barriers, have more negative health plan experiences, and are more likely to reduce their labor market participation to care for their child than other families.

**Conclusions**—Families of privately insured CSHCN needing mental health care face a higher burden than other families in caring for their children. Policies are needed to aid these families in obtaining affordable, high quality care for their children.

#### Keywords

mental health; health care services; CSHCN

# INTRODUCTION

Prior research has demonstrated that the challenges faced by families caring for a sick child are substantial.<sup>1–5</sup> While private insurance may provide important protections against the costs of health care, families of special needs children may still face substantial hurdles to caring for their children including high out-of-pocket costs, health plan-related barriers, reductions in

Correspondence to: Susan H. Busch.

The authors have no conflicts to report.

The challenges for families of having a child with mental health care needs may differ from families of other special needs children for several reasons. First, the financial burden on families of children with mental health care needs might differ due to inequities in coverage under private insurance. Mental health services are typically offered on a more limited basis than coverage for general medical services. Higher cost sharing and special coverage limits (e.g., 20 outpatient visits and 30 inpatient days per year) may leave families unprotected against larger costs. A federal parity law recently enacted by Congress is aimed at eliminating these differences in coverage; however, this law will not take effect until 2010.

Second, adverse selection may increase the burden on families of children with mental health care needs relative to families of other special needs children. Research suggests that adverse selection is particularly problematic in mental health insurance.<sup>8</sup> Selection refers to the incentive by private health plans to enroll people who are relatively healthy and pose a low financial risk. Because mental illnesses tend to be costly and chronic,<sup>9,10</sup> insurers can benefit financially by discouraging health plan enrollment by families with mental health care needs. Therefore, we might expect a higher level of dissatisfaction with the quality of care received by children with mental illness.

Third, the annual growth rate for spending on prescription drugs to treat mental health conditions was 15 percent between 1986 and 2003.<sup>11</sup> In response to rapid increases in pharmaceutical expenditures, health insurers have increased consumer cost sharing and the use of tiered formularies.<sup>12</sup> If children with mental health disorders use high levels of brand name drugs, this may increase their out-of-pocket costs.

In addition to specific provisions of private insurance contracts, other factors unrelated to insurance may increase the challenges for families having a child with mental health care needs. A national shortage of child psychiatrists has been well-documented<sup>13</sup> and could pose a barrier to accessing treatment for a child. If a family is unable to obtain treatment from an appropriately qualified provider, satisfaction with care may be lower. Characteristics of mental illness may also play a role. Stigma associated with mental illness may affect family burden to the extent that parents are less able to find appropriate child care services or obtain in-kind support. Mental illnesses may be less stable than other childhood disorders, and this could affect the burden on parents. For example, Gould found that children with time-intensive or unpredictable illnesses were more likely to negatively affect parental labor supply.<sup>14</sup>

In this analysis, we used data from the 2005–2006 National Survey of Children with Special Health Care Needs (NS-CSHCN) to compare the effects on families of children with mental health care needs to the effects for families with other special needs children. We focus on the privately insured since many of the insurance barriers noted above specifically pertain to private insurance.

#### **METHODS**

#### Setting

The design of the 2005–2006 National Survey of Children with Special Health Care Needs (NS-CSHCN) has previously been described.<sup>15,</sup>16

# Subjects

In all analyses we limit our sample to children ages 6–17 years old with private insurance coverage. We compare the burden on families of caring for special needs children with mental health care needs (defined as reporting a need for mental health care or counseling during the past 12 months) with three other groups. The first comparison group is a nationally representative sample of children who are not classified as CSHCN. The second comparison group includes children who have a SHCN, but whose parent's report they did not need mental health care in the past 12 months. Because we are interested in comparing children needing mental health care to children with similar levels of general health care need, the third comparison group is the subset of SHCN children in the second comparison group who reported needing care from a specialty doctor in the past 12 months.

We are also interested in whether the experience of children with a need for mental health care differs by mental health diagnosis. The NS-CSHCN survey asks respondents about the presence of three categories of mental health conditions: ADHD including both attention deficit disorder and attention deficit hyperactive disorder; emotional problems including depression, anxiety, an eating disorder, or other emotional problems; and autism and autism spectrum disorders. When considering differences in the burden on families by category, we only consider the experiences of children who indicated both a need for mental health care and the presence of the disorder. Some children may report more than one disorder.

#### Measures

As noted in Tables 1–3, we examine four categories of outcome measures: financial burden, health plan experience, labor market and time effects, and parent care experiences.

#### Analysis

We weight all analyses to reflect the complex sampling scheme of the survey. We first assess unadjusted differences in our outcome measures for: (1) children with no SHCN, (2) CSHCN with no need for mental health care; (3) the subset of group 2 with a need for other specialty care, and (4) CSHCN with a need for mental health care. Next, we conduct adjusted analyses using logistic regression to control for relevant individual and household characteristics.

We then conduct four subgroup analyses. First, we limit the sample to children residing in the six states with broad mental health parity laws. Consistent with prior research, we categorize a state as having a broad parity law if the National Alliance for the Mentally III (NAMI) defines its law as either *broad-based* or *comprehensive*, and if the law had been implemented prior to 2005.<sup>17</sup> If differential insurance limits or cost sharing are driving differences in burden, we expect this subsample to have lower or insignificant odds for our financial and health plan outcomes. Second, to determine whether having an adequate supply of child psychiatrists would reduce the differential burden on families of children with and without mental health care need, we limit the sample to children residing in states with an adequate supply of child psychiatrists, defined by the Graduate Medical Education National Advisory Committee (GMENAC) as 14.38 child psychiatrists per 100,000 youth. Six states met this threshold.<sup>18</sup>

Third, we limit the sample to children that do not report ongoing use of prescription drugs. If the cost of prescription drugs is driving differences in outcomes, we expect this subsample to have lower or insignificant odds for these outcomes. Finally, children needing mental health care may have a differential burden, particularly for labor market outcomes, if their health care needs are unstable. We limit our sample to children whose health care needs are usually stable; if the instability in health care needs is behind differences in burden, differences between children with and without mental health care need will be reduced or eliminated in this subsample.

# RESULTS

A total of 4,918 CSHCN with private insurance coverage reported a need for mental health care in 2005–2006. We compared the health care experience of these children with: (1) 2,346 privately insured children without SHCN (the referent sample), (2) 16,250 privately insured CSHCN who do not report a need for mental health care, and (3) a subset of group 2 consisting of 7,902 privately insured CSHCN who do not report a need for mental health care but do report a need for specialist care.

Children needing mental health care had greater out-of-pocket costs on average than all three comparison groups (Table 1). For example, 61 percent of children needing mental health care reported annual out-of-pocket costs greater than \$500 compared with only 19 percent of the referent sample. Less than 1 percent of the referent sample had annual out-of-pocket costs greater than \$5,000 compared with 7 percent of the sample needing mental health care. The two groups of CSHCN with no mental health care need (columns 2 and 3), had more families with high out-of-pocket costs than the referent sample, but fewer than CSHCN needing mental health care, compared with children with no need for specialty care.

Results for health plan experience outcomes were similar; children needing mental health care were more likely to have negative health plan experiences than other children. Regarding labor market and time outcomes, CSHCN needing mental health care had caregivers that spent more time arranging and providing care, and these caregivers were more likely to stop work or cut work hours to care for their child.

Examining parent care experience outcomes, parents of children with mental health care needs were more likely than the other three groups to report they were dissatisfied with services received. While almost 14 percent of parents of CSHCN needing mental health care were dissatisfied, only 3 percent of parents of the referent sample were dissatisfied. Parents of CSHCN needing mental health care were more than twice as likely as parents of other CSHCN to report dissatisfaction with services (14 versus 5 percent).

In Table 2 we present adjusted results. Column 1 reports the odds of each of our outcomes comparing CSHCN with and without mental health care needs. Results are similar to the unadjusted outcomes. For all financial and health plan experience outcomes, CSHCN with mental health care needs faired worse than their counterparts with no mental health care need (column 1), even when comparing to CSHCN with no mental health care need but a need for specialty care (column 2).

For labor market and time outcomes, we see fewer differences than in the unadjusted results. CSHCN with no mental health care needs but with a need for specialty care were less likely than CSHCN with mental health care needs to spend more than 10 hours a week providing care.

Parents of CSHCN needing mental health care had lower overall patient satisfaction compared with parents of CSHCN with no need for mental health care (OR=1.59) and with parents of CSHCN needing specialty care (OR=1.54). When considering individual components of patient satisfaction (using measures of family centered care), only one component (received specific information from doctors) is significantly different (p<.05) when comparing parents of CSHCN with and without mental health care need.

In columns 3–5 of Table 2, we present results for the subset of CSHCN with specific categories of disorders. Generally, we find children with autism experienced the greatest difference in outcomes.

In Table 3 we compare CSHCN with and without mental health care need within relevant subsamples. In analyses not shown, we also examine these subsamples comparing CSHCN with mental health care need to CSHCN with no mental health care need but with a need for specialty care. In almost all cases, these results are qualitatively similar; we only mention below when results diverge from those in Table 3.

Table 3 column 1 presents results limiting the sample to children in six states with a broad mental health parity law. Somewhat surprisingly, we find that these families have a greater difference in financial outcomes, compared with residents of all states. Otherwise there were few differences between these analyses, and those presented in Table 2 column 1 (what we refer to below as the full sample). In some cases the odds ratios were similar, but no longer significant due to the smaller sample size. In column 2, we limit the sample to residents of states with adequate supply of child psychiatrists. Generally, results are similar to the full sample in Table 2. One exception is the patient satisfaction variables. In this subsample, there are fewer differences in patient satisfaction between those with and without mental health care needs. In all cases, the point estimate suggests those with no mental health care have similar or greater satisfaction.

In Table 3, column 4, results for the subsample with no prescription drug needs are reported. This sample is much smaller than the full sample on Table 2, and may represent children with different health care needs and health status. We detect differences in financial outcomes comparing those with and without mental health care need similar in magnitude to the full sample. However, within this subsample, comparing children with mental health care need to CSHCN with no need for mental health care but with a need for specialty health care (results not shown) differences in financial outcomes are not found. This suggests that, at least among those with no prescription drug needs, there are few differences in the financial burden between those with and without a need for mental health care. Finally, Table 4 column 5 indicates results for the subsample of children whose conditions are usually stable. We find few differences compared with the full sample.

# DISCUSSION

Families of children with mental health care needs with private insurance coverage face significantly greater financial barriers, have more negative health plan experiences, and are more likely to reduce their labor market participation to care for their child than other families. These families are also somewhat more likely to report dissatisfaction with services than other families. In absolute terms, this burden is substantial. Among the privately insured, forty-three percent spend over \$1,000 out-of-pocket on their child's health care, indicating that private insurance coverage does not protect families from the expenses associated with mental health treatment.

A number of factors may explain the increased financial burden and other challenges faced by families of privately insured CSHCN with mental health care needs. Federal parity has long been advocated as a means of eliminating inequities in private insurance coverage for mental health care, and research indicates that parity can lower the out-of-pocket costs of treating children with mental illness.<sup>19,20</sup> The passage of a comprehensive federal parity law by Congress in Fall 2008 may reduce the financial burden on privately insured families of children with mental health disorders, but we do not find that living in a state with a broad state mental health parity law eliminated differences in financial outcomes between children needing mental health care and other children. Also, federal parity will not address the growth in prescription drug costs for treat mental health conditions, and does not directly affect the labor market and time costs of caring for a mentally ill child. Other policies should be aimed at addressing these significant costs imposed on families.

A number of limitations are important to note. First, information on a child's condition and experiences with health care are reported by the respondent, usually a parent. One concern is that children with mental health care needs may be more likely to have a parent with mental health care needs, who may respond to questions about the child's condition and its consequences differently from other parents. A second concern is that the average disease severity of children with mental health care needs may differ from other CSHCN. If children with mental health care needs are sicker, for example, differences in outcomes may be due to differences in the underlying severity of the condition rather than the condition itself. The comparison with children with no mental health care need but need for other specialty services mitigates this concern, although differences may still exist. Third, there are limits with state parity laws we were unable to control for in our study. Most importantly, health insurance obtained by a self-insured firm is not subject to state parity laws. In some states, over half the workforce is employed by self-insured firms.<sup>21</sup> Another limitation is that we limit our sample to children with private insurance coverage. Children with mental health care needs with public coverage may also face different challenges than other CSHCN, and outcomes for these children would also be interesting to study.

While we find that, under private insurance, CSHCN with mental health care needs face greater barriers than other special needs children, we are unable to definitively determine the causes of these differences. Our results do suggest that the shortage of child psychiatrists may have some impact on parent satisfaction, and that the out-of-pocket cost of psychotropic medications may play a role in the high financial burden on these families. More research needs to be done to better understand the cause of these differences, and to develop policy solutions that may ameliorate these effects.

#### Acknowledgments

The authors gratefully acknowledge grant support from the NIMH (RO1 MH 080883).

#### References

- 1. Newacheck PW, Kim SE. A national profile of health care utilization and expenditures for children with special health care needs. Archives of Pediatric and Adolescent Medicine 2005;159:10–17.
- 2. Jacobs P, McDermott S. Family caregiver costs of chronically ill and handicapped children: method and literature review. Public Health Reports 1989;104(2):158–166. [PubMed: 2523078]
- 3. Davidoff AJ. Insurance for children with special health care needs: patterns of coverage and burden on families to provide adequate insurance. Pediatrics 2004;114(2):394–403. [PubMed: 15286222]
- 4. Kuhlthau K, Hill KS, Yucel R, Perrin JM. Financial burden for families of children with special health care needs. Maternal and Child Health Journal 2005;9(2):207–218. [PubMed: 15965627]
- 5. Leonard B, Brust JD, Sapienza JJ. Financial and time costs to parents of severely disabled children. Public Health Reports Public Health Reports 1992;107(3):302–311.
- Busch SB, Barry CL. Child mental health disorders: assessing the burden on families. Health Affairs 2007;26(4):1088–1095. [PubMed: 17630451]
- Kogan MD, Strickland BB, Blumberg SJ, et al. A national profile of the health care experiences and family impact of autism spectrum disorder among children in the United States, 2005–2006. Pediatrics 2008;122:e1149–e1158. [PubMed: 19047216]
- 8. Frank, RG.; McGuire, TG. Economics and mental health. In: Culyer, AJ.; Newhouse, JP., editors. Handbook of Health Economics. New York: Elsevier Science; 2000. p. 893-954.
- Frank RG, Glazer J, McGuire TG. Measuring adverse selection in managed health care. Journal of Health Economics 2000;19:829 –854. [PubMed: 11186848]
- Ellis, RP. The effect of prior year health expenditures on health coverage plan choice. In: Scheffler, RM.; Rossiter, LF., editors. Advances in Health Economics and Health Services Research. Vol. 6. JAI Press; Greenwich CT: 1988. p. 149-170.

- 11. Levit KR, Cassed CA, Coffey RM, et al. Future funding for mental health and substance abuse: increasing burdens for the public sector. Health Affairs 2008:w513–522. [PubMed: 18840617]
- Huskamp HA. Pharmaceutical cost management and access to psychotropic drugs: The U.S. context. Int J Law Psychiatry 2005;28(5):484–95. [PubMed: 16150490]
- Thomas CR, Holzer CE. The continuing shortage of child and adolescent psychiatrists. Journal of the American Academy of Child and Adolescent Psychiatry 2006;45:1023–1029. [PubMed: 16840879]
- 14. Gould E. Decomposing the effects of children's health on mother's labor supply: Is it time or money? Health Economist 2004;13:525–541.
- Blumberg SJ, Welch EM, Chowdhury SR, Upchurch HL, Parker EK, Skalland BJ. Design and operation of the National Survey of Children with Special Health Care Needs, 2005–2006. National Center for Health Statistics. Vital Health Stat 2008;1(45):1–188.
- Kogan MD, Strickland BB, Newacheck PW. Introduction to the special volume of papers on national and state-specific findings from the 2005–2006 National Survey of Children with Special Health Care Needs. Pediatrics 2009:s1–S4.
- 17.

http://www.nami.org/Content/ContentGroups/Policy/Issues\_Spotlights/Parity1/State\_Mental\_Health\_Parity\_Laws\_20071.htm

- 18. Thomas CR, Holzer CE. The continuing shortage of child and adolescent psychiatrists. J Am Acad Child Adolesc Psychiatry 2006;45(9)
- 19. Azrin ST, Huskamp HA, Azzone V, et al. Impact of full mental health and substance abuse parity for children in the federal employees health benefits program. Pediatrics 2007;119(2):452–459.
- 20. Barry CL, Busch SH. Do state parity laws reduce the financial burden on families of children with mental health care needs? Health Services Research 2007;42(3):1061–1084. [PubMed: 17489904]
- 21. Buchmueller TC, Cooper PF, Jacobson M, Zuvekas SH. Parity for whom? Exemptions and the extent of state mental health parity legislation. Health Affairs 2007;6(4):w483–w4. [PubMed: 17556379]

#### Table 1

Unadjusted Outcomes for Privately Insured Children by Special Health Care Needs (SHCN) Status, 2005–2006

	(1) Children without SHCNs (referent sample)	(2) CSHCN with no mental health care need	(3) CSHCN with no mental health care need reporting some need for specialist care	(4) CSHCN with mental health care need
Ν	2346	16250	7902	4918
Financial outcomes (%)				
Out-of-pocket costs > \$500	19.4	40.1	50.8	61.0
Out-of-pocket costs > \$1000	10.3	22.4	30.9	42.5
Out-of-pocket costs > \$5000	0.8	2.4	3.7	6.9
Child's health care has caused financial problems	2.5	11.5	15.1	27.0
Need additional income to care for child	3.0	10.5	13.5	22.6
Health plan experience outcomes (%)				
Health insurance meets child's needs (1=never, sometimes)	6.8	8.4	9.6	18.0
Costs not covered by insurance are reasonable (1=never, sometimes)	24.0	29.0	30.1	40.0
Insurance allows child to see provider that child needs (1=never, sometimes)	4.6	5.7	6.0	15.3
Labor market and time outcomes (%)				
Spent >10 hours providing care	0.8	2.3	4.1	4.7
Spent >10 hours arranging care	0.7	1.6	2.0	3.0
Stopped work	0.8	5.3	7.6	13.0
Stopped work or cut work hours	2.1	12.7	17.4	30.0
Parent care experience outcomes (%)				
Satisfaction with services child receives (1=Somewhat/very dissatisfied)	2.7	5.4	6.2	13.7
Doctors spend enough time with you (1= never/sometimes)	17.3	16.1	12.6	18.5
Doctors listen carefully to you (1= never/sometimes)	5.6	7.1	6.7	11.4
Doctor sensitive to values and customs (1= never/sometimes)	6.5	6.4	6.3	9.9
Received specific information you needed from doctors (1= never/sometimes)	12.2	12.6	12.0	20.4
Doctors help you feel like a partner in your child's care (1= never/sometimes)	8.7	8.4	7.7	15.0

#### Busch and Barry

Note: Sample includes children age 6–17 with private insurance coverage. Means were weighted to reflect complex sampling scheme. Column 3 is a subset of Column 2.

2	
Φ	
D	
a	

9
00
<u>6</u>
05
20
1 Care
lth
ea
Η̈́
tal
len
2
for
g
Zee
y ľ
) by Need
HCN)
HC
$\overline{\mathbf{S}}$
ls (CSF
sbs
Vec
e N
ar
<u> </u>
lt
al Hea
ΠF
pec
S
vith
P C
rei
ild
l Child
<u> </u>
Insure
ns
$\mathbf{\Sigma}$
ately
~
Pri
or
ŝfi
ne
00
Juto
0
tec
just
Ådj
Ł

Busch and Barry

	Comparing CSHCN (no needed specialty		Comparing CSHCN (needed		Comparing CSHCN with ADHD <sup>c</sup> with mental health care		Comparing CSHCN with emotional problems <sup>d</sup> with mental health care		Comparing CSHCN with autism <sup>e</sup> with mental health care	
	care) with and without mental health care need OR (95% CI) <sup>a</sup>		specialty care) with and without mental health care need OR $(95\% \text{ CI})^b$		need to CSHCN without mental health care need OR (95% CI) <sup>d</sup>		need to CSHCN without mental health care need OR (95% CI) <sup>d</sup>		need to CSHCN without mental health care need OR (95% CI) <sup>a</sup>	
	15746		9856		13910		14079		11857	
Financial outcomes (%)										
Out-of-pocket costs > \$500	1.88 (1.63–2.15)	***	1.31 (1.12–1.52)	***	1.80 (1.53–2.11)	* *	2.13 (1.80–2.53)	***	2.36 (1.52–3.65)	***
Out-of-pocket costs > \$1000	1.94 (1.69–2.23)	* * *	1.32 (1.13–1.54)	***	1.78 (1.51–2.11)	* * *	2.09 (1.77–2.46)	***	2.20 (1.45–3.33)	* *
Out-of-pocket costs > \$5000	1.69 (1.26–2.25)	* * *	1.30 (.95–1.78)		1.34 (.96–1.88)	*	1.86 (1.34–2.58)	* * *	1.64 (.93–2.87)	*
Child's health care has caused financial problems	1.74 (1.48–2.05)	* * *	1.35 (1.13–1.61)	* * *	1.60 (1.31–1.96)	* * *	2.18 (1.80–2.63)	* * *	2.31 (1.47–3.62)	
Need additional income to care for child	1.57 (1.32–1.87)	* * *	1.22 (1.01–1.47)	* *	1.42 (1.15–1.75)	* *	1.89 (1.55–2.31)	* * *	2.63 (1.66–4.17)	* * *
Health plan experience outcomes (%)										
Health insurance meets child's needs (1=never, sometimes)	1.65 (1.38–1.97)	* * *	1.50 (1.22–1.83)	* * *	1.63 (1.31–2.04)	* * *	1.75 (1.42–2.16)	***	3.20 (1.91–5.34)	***
Costs not covered by insurance are reasonable (1=never, sometimes)	1.39 (1.21–1.59)	* *	1.30 (1.12–1.51)	* * *	1.45 (1.23–1.72)	* * *	1.49 (1.26–1.75)	***	2.23 (1.49–3.33)	***
Insurance allows child to see provider that child needs (1=never, sometimes)	2.16 (1.77–2.63)	* *	2.12 (1.70–2.65)	* * *	2.22 (1.74–2.84)	* * *	2.24 (1.76–2.85)	***	3.20 (1.77–5.80)	* *
Labor market and time outcomes (%)										
Spent >10 hours providing care	.90 (.67–1.21)		.70 (.51–.95)	*	.830 (.58–1.19)		.87 (.62–1.22)		1.26 (.75–2.09)	
Spent >10 hours arranging care	1.23 (.86–1.77)		1.33 (.89–2.00)		1.29 (.85–1.95)		1.27 (.83–1.93)		1.85 (.95–3.60)	*

NIH-PA Author Manuscript

NIH-PA Author Manuscript

Busch and Barry
-----------------

	Comparing CSHCN (no needed specialty care) with and without mental health care need OR (95% CI) <sup>d</sup>		Comparing CSHCN (needed specialty care) with and without mental health care need OR $(95\% \text{ CI})^b$		Comparing CSHCN with ADHD <sup><math>\phi</math></sup> with mental health care need to CSHCN without mental health care need OR (95% CI) <sup><math>d</math></sup>		Comparing CSHCN with emotional problems <sup><math>d</math></sup> with mental health care need to CSHCN without mental health care need OR (95% CT) <sup><math>d</math></sup>		Comparing CSHCN with autism $^{\ell}$ with mental health care need to CSHCN without mental health care need OR (95% CI) <sup>d</sup>	
Stopped work	1.51 (1.20–1.91)	* *	1.16 (.91–1.48)		1.40 (1.05–1.86)	*	1.62 (1.24–2.13)	* *	2.10(1.41 - 3.14)	* *
Stopped work or cut work hours	1.68 (1.42–1.99)	* *	1.290 (1.08–1.54)	* *	1.69 (1.38–2.06)	* * *	1.74 (1.44–2.12)	* *	2.39 (1.61–3.54)	* *
Parent care experience outcomes (%)										
Satisfaction with services child receives (1=Somewhat/very dissatisfied)	1.59 (1.29–1.97)	* * *	1.54 (1.23–1.93)	* * *	1.74 (1.36–2.23)	* * *	1.64 1.27–2.10)	* * *	1.73 (1.07–2.81)	* *
Doctors spend enough time with you (1= never/ sometimes)	.97 (.81 – 1.15)		1.21 (1.01–1.45)	*	.98 (.80–1.20)		1.025 (.83–1.26)		1.01 (.67–1.50)	
Doctors listen carefully to you (1= never/sometimes)	1.22 (.99–1.50)	*	1.41 (1.11–1.78)	* *	1.24 (.97–1.58)	*	1.31 (1.03–1.68)	*	1.36 (.84–2.22)	
Doctor sensitive to values and customs (1= never/ sometimes)	1.20 (.96–1.49)		1.31 (1.02–1.68)	* *	1.36 (1.04–1.77)	* *	1.39 (1.06–1.82)	* *	1.26 (.76–2.10)	
Received specific information you needed from doctors (1= never/ sometimes)	1.22 (1.02–1.46)	* *	1.37 (1.13–1.67)	* * *	1.28 (1.07–1.58)	* *	1.33 (1.08–1.65)	* *	1.36 (.90–2.05)	
Doctors help you feel like a partner in your child's care (1= never/sometimes)	1.36 (1.10–1.66)	* * *	1.55 (1.26–1.92)	* * *	1.34 (1.06–1.71)	* *	1.50 (1.16–1.93)	* * *	1.24 (.73–2.11)	

Pediatrics. Author manuscript; available in PMC 2010 December 1.

category for households where income is missing); mother's education; race and ethnicity; number of children in the household; child's age category (age 6-9 years; age 10-12 years; age 13-17 years); child's moderate, severe); how severely the condition has affected the child's ability to do things (a great deal; some; very little); number of adults in the household; family income (nine categories, plus one additional Notes: Sample includes children age 6-17 with private insurance coverage. Estimates are weighted to reflect complex sampling scheme. In all models we control for the severity of child's condition (minor, gender; and whether the interview was conducted in a language other than English. To control for state level factors that may influence our outcome measures, we also include state dummy variables.

 $^{a}\mathrm{Comparison}$  group comprised of CSHCN with no mental health care need.

 $b^{
m C}$ Comparison group comprised of CSHCN with no mental health care need but reporting some need for specialty care.

 $^{\mathcal{C}}$  ADHD includes attention deficit disorder or attention deficit hyperactive disorder.

 $^d$ Emotional problems include depression, anxiety, an eating disorder, or other emotional problems.

Busch and Barry

NIH-PA Author Manuscript

c	
θ	
q	
a'	

Adjusted Outcomes for Privately Insured Children with Special Health Care Needs (CSHCN) Using Selected Sub-samples, 2005–2006

Busch and Barry

	Comparing CSHCN with and without mental health care need in states with broad mental health parity laws <sup>d</sup> OR (95% CI)		Comparing CSHCN with and without mental health care need in states with adequate supply of child psychiatrists <sup>b</sup> OR (95% CI)		Comparing CSHCN with and without mental health care need among those not reporting prescription drug needs <sup>c</sup> OR (95% CT)		Comparing CSHCN with and without mental health care need among those whose conditions are usually stable <sup>d</sup> OR (95% CI)	
Ν	1898		2423		2779		11070	
Financial outcomes (%)								
Out-of-pocket costs > \$500	2.73 (2.02–3.70)	***	2.12 (1.54–2.93)	***	1.61 (1.22–2.14)	***	1.80 (1.53–2.11)	***
Out-of-pocket costs > \$1000	2.95 (2.17–4.00)	***	2.03 (1.46–2.82)	* *	1.70 (1.27–2.28)	* *	1.88 (1.58–2.24)	* *
Out-of-pocket costs > \$5000	1.85 (.98–3.50)	*	3.09 (1.80–5.30)	***	1.48 (.86–2.56)		1.76 (1.18–2.70)	***
Child's health care has caused financial problems	2.44 (1.67–3.56)	* *	1.62 (1.08–2.45)	*	1.42 (1.04–1.94)	* *	1.70 (1.36–2.14)	* * *
Need additional income to care for child	1.62 1.08–2.44)	* *	1.62 (.99–2.63)	*	1.55 (1.12–2.16)	***	1.47 (1.16–1.87)	* * *
Health plan experience outcomes (%)								
Health insurance meets child's needs (1=never, sometimes)	1.74 (1.08–2.82)	* *	1.83 (1.13–2.96)	* *	1.25 (.92–1.71)		1.65 (1.30–2.10)	* * *
Costs not covered by insurance are reasonable (1=never, sometimes)	1.78 (1.29–2.45)	***	1.34 (.93–1.93)		1.57 (1.20–2.06)		1.31 (1.10–1.55)	* * *
Insurance allows child to see provider that child needs (1=never, sometimes)	2.39 (1.51–3.79)	* *	2.25 (1.42–3.58)	* * *	1.43 (1.01–2.03)	*	1.98 (1.52–2.57)	* * *
Labor market and time outcomes (%)								
Spent > 10 hours providing care	.92 (.42–1.20)		1.23 (.59–2.56)		.78 (.40–1.51)		1.03 (.65–1.55)	
Spent > 10 hours arranging care	.66 (.23–1.9)		.47 (.16–1.40)		1.15 (.58–2.28)		1.40 (.77–2.54)	
Stopped work	1.40 (.83–2.37)		1.36 (.81–2.27)		1.13 (.75–1.70)		1.68 (1.20–2.35)	***
Stopped work or cut work hours	1.78 (1.23–2.55)	***	1.86 (1.25–2.77)	***	1.52 (1.11–2.09)	***	1.73 (1.37–2.19)	***
Parent satisfaction outcomes (%)								
Satisfaction with services child receives (1=Somewhat/very dissatisfied)	1.58 (.89–2.83)		1.37 (.74–2.51)		1.15 (.79–1.68)		1.73 (1.32–2.28)	* * *

NIH-PA Author Manuscript

Doctors spend enough time with you (1 = never/sometimes).93 (.62-1.40).66 (.4499)** $.94 (.66-1.34)$ 9 $you (1 = never/sometimes)$ $.79 (.48-1.31)$ $.79 (.48-1.31)$ $.94 (.66-1.34)$ $.91 (.66-1.34)$ $Doctors listen carefully to you(1 = never/sometimes)$ $.79 (.48-1.31)$ $.74 (.45-1.21)$ $.99 (.68-1.44)$ $.91 (.66-1.62)$ $Doctors listen carefully to you(1 = never/sometimes)$ $.1.32 (.78-2.23)$ $.1.16 (.66-2.04)$ $.104 (.66-1.62)$ $.91 (.66-1.62)$ $Neceived specific informationyou needed from doctors (1 =never/sometimes).1.64 (.1.12-2.42)**.98 (.65-1.48).94 (.66-1.34).94 (.66-1.34)Neceived specific informationyou needed from doctors (1 =never/sometimes).1.64 (.1.12-2.42)**.98 (.65-1.48).94 (.66-1.34).94 (.66-1.34)Neceived specific informationyou needed from doctors (1 =never/sometimes).1.00 (.65-1.54).91 (.66-1.34).94 (.66-1.34).94 (.66-1.34)Neceived specific informationyou needed from doctors (1 =never/sometimes).91 (.63-1.47).91 (.63-1.47).91 (.63-1.47)$		Comparing CSHCN with and without mental health care need in states with broad mental health parity laws <sup>d</sup> OR (95% CI)		Comparing CSHCN with and without mental health care need in states with adequate supply of child psychiatrists <sup>b</sup> OR (95% CI)		Comparing CSHCN with and without mental health care need among those not reporting prescription drug needs <sup><math>c</math></sup> OR (95% CI)	Comparing CSHCN with and without mental health care need among those whose conditions are usually stable <sup>d</sup> OR (95%  CI)	
.79 (.48-1.31)     .74 (.45-1.21)       1.32 (.78-2.23)     1.16 (.66-2.04)       1.32 (.78-2.23)     **       1.64 (1.12-2.42)     **       1.00 (.65-1.54)     1.20 (.702.05)	Doctors spend enough time with you (1= never/sometimes)	.93 (.62–1.40)		.66 (.44–.99)	**	.94 (.66–1.34)	.99 (.78–1.24)	
1.32 (.78-2.23)     1.16 (.66-2.04)       1.64 (1.12-2.42)     **       .98 (.65-1.48)       1.00 (.65-1.54)       1.20 (.70-2.05)	Doctors listen carefully to you (1= never/sometimes)	.79 (.48–1.31)		.74 (.45–1.21)		.99 (.68–1.44)	1.28 (.97–1.68)	*
1.64 (1.12-2.42)     **     .98 (.65-1.48)       1.00 (.65-1.54)     1.20 (.702.05)	Doctor sensitive to values and customs (1= never/sometimes)	1.32 (.78–2.23)		1.16 (.66–2.04)		1.04 (.66–1.62)	1.47 (1.10–1.97)	*
1.00 (.65–1.54) 1.20 (.70.–2.05)	Received specific information you needed from doctors (1= never/sometimes)	1.64 (1.12–2.42)	* *	.98 (.65–1.48)		.94 (.66–1.34)	1.29 (1.03–1.63)	* *
	Doctors help you feel like a partner in your child's care (1= never/sometimes)	1.00 (.65–1.54)		1.20 (.70.–2.05)		.97 (.63–1.47)	1.47 (1.12–1.94)	* * *

moderate, severe); how severely the condition has affected the child's ability to do things (a great deal; some; very little); number of adults in the household; family income (nine categories, plus one additional category for households where income is missing); mother's education; race and ethnicity; number of children in the household; child's age category (age 6-9 years; age 10-12 years; age 13-17 years); child's Notes: Sample includes children age 6–17 with private insurance coverage. Estimates are weighted to reflect complex sampling scheme. In all models we control for the severity of child's condition (minor, gender; and whether the interview was conducted in a language other than English. To control for state level factors that may influence our outcome measures, we also include state dummy variables.

<sup>a</sup>States with broad parity laws are Connecticut, Maine, Maryland, Minnesota, New Mexico and Vermont.

b States with adequate supply of child psychiatrists are Connecticut, Washington DC, Hawaii, Maryland, Massachusetts, New York, Rhode Island and Vermont.

<sup>c</sup>Prescription drug needs is defined based on the child's currently need or use of medicine prescribed by a doctor, other than vitamins because of any medical, behavioral, or other health condition that has lasted or is expected to last 12 months or longer.

 $d_{\rm Stability}$  of health condition is defined as respondent reporting that child's health care needs are usually stable.