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RESEARCH ARTICLE

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The effect of Medicaid waivers on ameliorating racial/ethnic disparities among children with autism

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Abstract

Objective: To examine the effects of Medicaid Home and Community-based Services (HCBS) waivers on reducing racial/ethnic disparities in unmet need for services among families of children with autism spectrum disorder (ASD).

Data Sources: Data from the 2003, 2007, and 2011 waves of the National Survey of Children's Health and the 2005 and 2010 waves of the National Survey of Children with Special Health Care Needs were used. Data on waiver characteristics were collected from source materials that were submitted in support of each state's waiver application. Waiver characteristics were combined to create a single waiver generosity variable.

Study Design: Quasi-difference-in-difference-in-difference models were used to determine the effect of waiver generosity on racial/ethnic disparities in unmet need among children with ASD.

Principal Findings: Increased waiver generosity was associated with significantly reduced odds of having unmet need for black children with ASD compared with white children with ASD. Unmet needs among black children with ASD were roughly cut in half, a 13 percentage point decrease, with the implementation of an average generosity waiver. No significant differences were seen for Hispanic ethnicity.

Conclusion: These findings suggest that Medicaid HCBS waivers have the potential to ameliorate disparities in unmet need among children with ASD. Future policy development should focus on replicating the most effective characteristics of these waivers.

KEYWORDS
autism spectrum disorder, disparity, HCBS waiver, Medicaid

1 | INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental disorder affecting one in 68 children in the United States[1] and characterized by deficits in social communication and social interaction, and repetitive patterns of behavior.[2] While there are no known differences in prevalence by race or ethnicity, white children are about 1.2 times more likely to be diagnosed than black children,[1] suggesting a disparity in recognition. Latino children are screened for autism at lower rates than white, non-Hispanic children.[3] Those with autism are diagnosed almost one year later than white children, receive fewer specialty services, have higher unmet service needs,[4,5] are less likely to get genetic testing,[6] and are less likely to have an individualized education plan (indicating the presence of special education services) when they are diagnosed.[7] Similarly, African American children with ASD are diagnosed at a later age than their

TABLE 1 States with child-specific waivers

Year	Waiver states	Control states
2003	MD, WI	AL, AZ, CO, CT, DC, GA, HI, IA, ID, IL, KY, MA, ME, MN, MO, MT, NC, ND, NE, NV, OK, OR, PA, RI, SC, SD, TN, TX, VT, WA, WV, WY
2005	MD, MI, WI	AL, AZ, CO, CT, DC, GA, HI, IA, ID, IL, KY, MA, ME, MN, MO, MT, NC, ND, NE, NV, OK, OR, PA, RI, SC, SD, TN, TX, VT, WA, WV, WY
2007	CO, MA, MD, MI, WI	AL, AZ, CT, DC, GA, HI, IA, ID, KY, ME, MN, MO, MT, NC, ND, NE, NV, OK, OR, PA, RI, SD, TN, TX, VT, WA, WV, WY
2010	CO, MA, MD, MI, MT, ND, SC, WI	AL, AZ, CT, DC, GA, HI, IA, ID, KY, ME, MN, NE, NV, OK, OR, PA, RI, SD, TN, TX, VT, WA, WV, WY
2011	CO, MA, MD, ME, MI, MT, ND, SC, WI	AL, AZ, CT, DC, GA, HI, IA, KY, MN, NE, NV, OK, OR, PA, RI, SD, TN, TX, VT, WA, WV, WY

Data Source: Medicaid HCBS waiver applications.

white counterparts[8] or are not diagnosed at all.[9] Racial and ethnic minority children with ASD are diagnosed at later ages and receive poorer care than white children.[10] Parents of black children also report poorer quality interactions with their health care providers than do white families.[11] While racial and ethnic health and health care disparities have been noted for typically developing children, these disparities may be exacerbated among children with ASD.[12]

While these disparities have been well documented, much less research has addressed why these disparities exist and how to ameliorate them. One line of thinking suggests that disparities exist at least in part because of cultural differences in parental beliefs and health-seeking behavior interacting with a system of care insensitive to these differences.[3,13-15] Fewer studies have examined the extent to which system-level efforts to improve access to care ameliorate these disparities for children with ASD,[16] despite evidence of the impact of such interventions and policies in other areas of health care.[17,18] We are unaware of studies examining the extent to which changes in state policies affecting children with ASD affect disparities in care.

In an effort to increase access to care for individuals with ASD, many states are taking advantage of Medicaid Home and Community-based Services (HCBS) waivers. HCBS waivers can be used to expand Medicaid coverage to include more services for individuals with ASD, and expand eligibility to include individuals who would not typically qualify for Medicaid, including children living in a household with an income level above the Medicaid eligibility threshold.[19] Because HCBS waivers are administered by state Medicaid programs, the characteristics of waivers vary widely by state.[20] While these policies are designed to increase access and quality of care overall,[21] they may also reduce disparities in care. In some cases, quality improvement interventions have been shown to disproportionately benefit disadvantaged populations.[22] Other policies, however, may have the unintended consequence of increasing disparities.[23]

We previously found that children with ASD in states with waivers for which they were eligible reported fewer unmet health care needs than children in states without such waivers.[24] Children in states with more generous waivers, defined as having higher spending limits or enrolling more children, had even lower unmet need, with higher-income households benefitting disproportionately. This may be because families with higher incomes have the resources to make it through the often-cumbersome process of enrolling in the waiver and accessing services,[25] or because children living in lower-income households already are Medicaid-enrolled, and Medicaid coverage for ASD unrelated to HCBS waivers often is generous relative to the commercial insurance that otherwise would pay for these higher-income children's care.[26] Our findings raise concerns that waivers may potentially exacerbate rather than ameliorate disparities. The current study seeks to inform this issue by extending our prior analyses to examine the effects of Medicaid waivers on reducing disparities in unmet need for services among families of children with ASD.

2 | METHOD

2.1 | Data

Data from the 2003, 2007, and 2011 waves of the National Survey of Children's Health (NSCH) and the 2005 and 2010 waves of the National Survey of Children with Special Health Care Needs (NS-CSHCN) were used to assess unmet need for health care among children with ASD. The NSCH is a nationally representative cross-sectional, random-digit-dialed telephone survey that collects information about the physical and emotional health of US children 17 years of age and younger.[27,28] The NS-CSHCN is a nationally representative cross-sectional, random-digit-dialed telephone survey that collects information about the physical and emotional health of US children with special health care needs 17 years of age and younger.[29]

2.2 | Sample

The sample consisted of three cross sections of the NSCH and two cross sections of the NS-CSHCN, containing a total of 64 041 observations on children aged 2-17, including 3769 children with ASD.

Because the CSHCN survey includes the necessary information only for children with special health care needs, we limited the analyses to a sample of children with special needs and eliminated children from the NSCH survey that did not report a special health care need. Children were categorized as having ASD if their caregiver responded that they had autism or ASD, when presented with a list of conditions. To increase the specificity of this question, we limited the sample to children with ASD aged ≥2 years, for whom diagnostic accuracy is greater.

Data describing state Medicaid HCBS waiver programs were collected from source materials that were submitted in support of waiver applications by each state and for each waiver from 2000 through 2014. Our data collection process is described in more detail elsewhere.[20] Thirty-five states were included in the study sample. From 2003 through 2011, nine states (Table 1) had a Medicaid HCBS waiver that expressly targeted children with ASD in at least one of the years during the study period, while 26 states did not have a child-specific Medicaid HCBS waiver during the study period and served as the control group. We excluded the remaining states in which there were waivers in effect that included adults, since it was impossible to determine the level of services available for children under such waivers. Only two of the nine states with a child-specific waiver had a child-specific waiver during all years of the study period. The remaining seven states passed their child-specific waiver during the study period and were included with the control states for the years prior to the passage of their child-specific waiver. Each waiver state included in this analysis only had one child-specific waiver expressly including children with ASD as a target population.

2.3 | Dependent variable

Questions regarding access to health care were used to construct a dichotomous (Yes/No) measure indicating whether the child had an unmet need for health care. The unmet need variable was defined across the survey years by combining questions that probe for difficulties or delays in receiving needed medical care, including dental care, mental health services, or prescription medications. For example, in the 2007 and 2011 waves of the NSCH survey, the question was phrased: "During the past 12 months, was there any time when [child name] needed health care but it was delayed or not received?," with follow-up questions for whether it was medical care, dental care, mental health services, or something else. If a parent responded "yes" to any of the questions regarding unmet need, they were categorized as having an unmet need for the purposes of this study.

2.4 | Primary independent variables

Race was measured based on responses to a single survey question. The caregiver was provided with a list of categories (white, black or African American, American Indian, Alaska Native, Asian, or Native Hawaiian or other Pacific Islander) and asked to identify to which category or categories the child belonged. Ethnicity was measured based on a response to a single question that asked the caregiver if the child was of Hispanic, Latino, or Spanish origin. The final study sample included children whose caregivers identified them as white or black, both Hispanic and non-Hispanic. All other racial and ethnic groups were excluded from the analysis. The final three groups used for analysis were as follows: (a) white, non-Hispanic; (b) black, non-Hispanic; and (c) Hispanic (black and white).

Waiver generosity was characterized using the following three dimensions of waivers: (a) estimated cost, which each state calculates for its own waiver and is defined as the total annual estimated costs of waiver services per individual expected to participate in the waiver; (b) cost limit, defined as the maximum cost of services that each state allowed for individuals enrolled under the waiver; and (c) enrollment limit, defined as the maximum number of participants that the waiver will serve and expressed as a proportion of the total number of children in the state.[24] Each of the three measures was normalized by dividing by its standard deviation (SD), such that, after summing them to make a final generosity metric, they would have equal influence on that metric based on their empirical variation. The resulting generosity metric was normalized again by dividing by the mean generosity of waivers in the sample so that a value of 1 would represent the value of an average waiver and a value of 0 would reflect the absence of a waiver or a waiver for which the expected costs = the cost limit = the enrollment limit = 0.

2.5 | Analysis

We estimated standard multivariable logistic regression models in which the unit of analysis was the child-year. We specified a multivariable logistic regression model that characterized the associations between unmet health care needs and HCBS waiver generosity, by race/ethnicity, controlling for other child characteristics (age, sex, and health status/whether the child was classified as having special health care needs), family characteristics (and household income), calendar year, and state-level fixed effects. We specify the model as quasi-difference-in-difference-in-difference (QDDD) model,[24] where the first difference identifies changes in waiver status within states, the second identifies differences in those changes across states, and the third identifies differences by race/ethnicity. The QDDD model is a generalization of the standard difference-in-difference-in-difference model. In our case, however, the policies (treatments) are implemented at different times in different states, and the treatment itself varies over time depending on the value of the generosity index. All multivariate models were estimated using probability weights, which were normalized to be representative of the sample of interest in each year. Thus, the analyses accommodate sample design.

To aid in the interpretation of effect size, we calculated the mean predicted probabilities over the sample under 16 scenarios, eight each for black race vs white race and Hispanic ethnicity vs non-Hispanic ethnicity. For the race comparisons, we calculated four scenarios by assigning all sample children to have ASD and then to not have ASD, including: All sample children were assigned to (a)

black race and generosity = 0; (b) black race and generosity = 1; (c) white race and generosity = 0; and (d) white race and generosity = 1. We then repeated the calculations for Hispanic ethnicity vs non-Hispanic ethnicity. In each case, all other independent variables were left unchanged. We calculate the mean of the predicted probabilities for each of the 16 scenarios, and with these, we constructed first, second, and third differences to characterize the effect of waivers (with and without an average waiver) on black (alternately Hispanic) compared to white children (alternately Hispanic children) with ASD, relative to children without ASD. These adjusted probabilities and their differences are presented in Table 4.

Our primary independent variable of interest was the interaction term between race/ethnicity and waiver generosity, which represents the differential effects of the waiver generosity variable on children with ASD by race/ethnicity. The estimated interaction term allows us to determine whether the waivers ameliorate disparities in unmet health care needs for children with a current ASD diagnosis.

STATA® 12.1 software was used to conduct all the data management and analyses. The study was approved by the Institutional Review Board of the Pennsylvania State University College of Medicine.

3 | RESULTS

Sample characteristics are provided in Table 2. Among white children with ASD, approximately 27 percent reported unmet need, while approximately 18 percent of black children with ASD and 27 percent of Hispanic children with ASD reported unmet need. Children with special health care needs who did not have ASD reported less unmet need than children with ASD. Both the white, non-ASD group and the black, non-ASD group were approximately 57 percent male, while the Hispanic, non-ASD group was approximately 55 percent male. The white, ASD group was 80 percent male, while the black, ASD group was 75 percent male, and the Hispanic, ASD group was nearly 90 percent male. The mean age of children in the sample was approximately 10 years among white and black children with ASD and was approximately 9 years for Hispanic children with ASD. More than one-third of black children, regardless of ASD diagnosis, reported household income <100 percent FPL, while fewer than 14 percent of white children, regardless of ASD diagnosis, reported this level of household income. Similarly, approximately 69 percent of black children with ASD and 58 percent of black children with special health care needs other than ASD reported Medicaid as their primary insurance. Approximately 42 percent of white children with ASD and 27 percent of white children with special health care needs other than ASD reported Medicaid as their primary insurance. Approximately 20 percent of Hispanic children with ASD reported household income <100 percent FPL, while nearly 33 percent of Hispanic children without ASD reported household income <100 percent FPL. Despite this difference, Hispanic children with ASD and without ASD reported similar rates of having Medicaid as their primary insurance, 43 and 46 percent, respectively.

TABLE 2 Sample characteristics by ASD status and race/ethnicity (weighted)

	Children with a current ASD diagnosis			Non-ASD children with special health care needs		
	White	Black	Hispanic	White	Black	Hispanic
	(n = 3455)	(n = 324)	(n = 235)	(n = 53 717)	(n = 6858)	(n = 3688)
Age (y, SD)	10.10 (3.90)	10.01 (4.14)	8.87 (4.18)	10.63 (4.32)	9.84 (4.26)	9.83 (4.19)
Male (%)	80.4	75.4	89.7	57.1	57.4	54.6
Unmet need (%)	27.3	18.4	26.7	11.1	15.5	16.6
Household income						
<100% FPL	13.9	36.6	19.8	13.2	36.3	32.9
100%-150% FPL	12.5	13.0	14.8	9.5	15.7	15.4
150%-200% FPL	10.3	18.4	5.3	9.9	11.7	12.9
200%-300% FPL	21.6	12.5	15.6	18.0	14.8	12.9
300%-400% FPL	14.6	3.0	21.2	15.9	8.6	9.0
>400% FPL	27.1	16.5	23.2	33.5	12.9	16.9
Insurance status (%)						
Medicaid	42.5	69.0	42.9	26.7	57.9	46.0
Private	53.5	27.2	51.9	68.1	34.0	39.8
Uninsured	2.1	2.5	3.2	3.5	5.6	10.9
State-years with any waiver (%)	21.5	22.0	11.37	19.6	22.1	12.7

Note: Abbreviations: ASD, autism spectrum disorder; FPL, federal poverty level.
Data Source: 2003, 2007, and 2011 waves of the NSCH, and 2005 and 2010 waves of the NS-CSHCN.

TABLE 3 Multivariable logistic regression results: Factors associated with unmet health care needs

	OR	95% CI
Child race, main effects		
White	Ref	—
Black	1.03	0.90, 1.193
Hispanic	0.98	0.88, 1.09
Current ASD status, main effect		
Current ASD	**2.40**	**1.82, 3.16**
Waiver generosity (sum of cost limit, estimated cost, and max enrollment), main effect		
Generosity	1.00	0.77, 1.30
ASD and waiver generosity interaction		
ASD × generosity	1.09	0.84, 1.41
QDDD Estimates: Effects of waiver generosity on children with ASD by race		
ASD × White × generosity	Ref	—
ASD × Black × generosity	**0.34**	**0.18, 0.64**
ASD × Hispanic × generosity	2.14	0.90, 5.08
Gender		
Male	Ref	—
Female	0.98	0.91, 1.06
Household income		
<100% FPL	Ref	—
100%-150% FPL	0.89	0.78, 1.02
150%-200% FPL	**0.79**	**0.64, 0.98**
200%-300% FPL	**0.60**	**0.49, 0.74**
300%-400% FPL	**0.32**	**0.26, 0.40**
>400% FPL	**0.24**	**0.20, 0.30**
Child age		
2-5	**0.69**	**0.61, 0.77**
6-12	**0.82**	**0.77, 0.88**
13-17	Ref	—
Survey year		
2003	Ref	—
2005	**3.26**	**2.76, 3.85**
2007	**2.14**	**1.76, 2.59**
2010	**3.60**	**3.10, 4.17**
2011	**2.03**	**1.33, 3.10**
N	68 277	—
Pseudo-log-likelihood	−9 215 794	—

Note: Figures listed in bold are statistically significant at $\alpha < 0.05$.
Abbreviations: ASD, autism spectrum disorder; FPL, federal poverty level; QDDD, quasi-difference-in-difference-in-difference.

In adjusted models estimating the interaction between race/ethnicity and ASD (Table 3), a 1-SD increase in waiver generosity was associated with significantly reduced odds (OR: 0.34; CI: 0.18, 0.64) of having unmet need for black children with ASD, compared with white children with ASD, although there was no significant association between waiver generosity and unmet need for Hispanic children with ASD. In alternative specifications (not shown) in which generosity was replaced with an indicator variable for the presence of a waiver in a state-year, we found that the presence of a waiver alone was not significantly associated with a change in unmet health care need.

In adjusted analysis, several variables were statistically significantly associated with unmet health care need (Table 3). Children with ASD were more likely to report unmet health care needs than children with other special health care needs, as were children living in households with income <150 percent federal poverty level. Children aged 2-12 were significantly less likely to report unmet health care needs than children aged 13-17.

Adjusted rates of unmet needs (Table 4) characterize the effect sizes for the scenarios that define the difference-in-difference (DD) and the triple difference (DDD) estimates: with and without ASD, by race and ethnicity [black/white and non-Hispanic/Hispanic], and by waiver [none vs average]. Among children without ASD, there were no significant differences by race/ethnicity or by waiver status. Among children with ASD, however, the DD estimate of adjusted unmet needs showed a large relative reduction in unmet needs for black compared to white children with the implementation of an average waiver (DD = −0.126; $P = 0.02$). Comparing the DD estimate for those with ASD to those without ASD (the triple difference), the relative reduction in unmet needs for black children compared to white children with the implementation of an average waiver is even larger (DDD = −0.133; $P < 0.01$). There was no significant difference in unmet need, by ethnicity or waiver status, between non-Hispanic and Hispanic children.

4 | DISCUSSION

We found that the presence of a waiver alone did not affect unmet need, but that an increase in Medicaid waiver generosity reduced unmet need among black children with ASD relative to white children. This indicates that the characteristics of the waivers are an important factor in ameliorating black-white disparity in unmet need for children with ASD.

We found no significant change in unmet need for Hispanic children with ASD, and the change that was observed was in the direction of increased unmet need with increasing waiver generosity. There are many possible reasons for these results, including issues of cultural competence, or specific program features that effect Hispanic children with ASD differently than non-Hispanic children with ASD. There is a need for more detailed information on this population and how they interact with the various state programs that are available. Research that specifically examines the impact of these programs on Hispanic children with ASD on a more granular level is needed.

While there may be evidence that Medicaid is associated with increased odds of unmet need in certain populations, among children with special health care needs the literature on the differences in

TABLE 4 Adjusted probability of unmet need

	No waiver		Average waiver		Difference	
	Adjusted prediction	***P***	**Adjusted prediction**	***P***	**Adjusted prediction**	***P***
No ASD						
White race	0.119		0.119		0.000	0.99
Black race	0.122		0.129		0.007	0.79
Difference	−0.003	0.67	−0.010	0.62	0.007	0.75
Current ASD						
White race	0.237		0.247		0.011	0.60
Black race	0.242		0.127		−0.115	0.07
Difference	−0.005	0.68	**0.121**	**0.02**	**−0.126**	**0.02**
Triple difference					**−0.133**	**<0.001**
No ASD						
Non-Hispanic	0.123		0.125		0.001	0.92
Hispanic	0.121		0.138		0.017	0.27
Difference	0.002	0.70	−0.013	0.19	0.015	0.16
Current ASD						
Non-Hispanic	0.241		0.228		−0.012	0.64
Hispanic	0.237		0.369		0.132	0.19
Difference	0.003	0.70	−0.141	0.15	0.144	0.15
Triple difference					0.129	0.21

Note: Figures listed in bold are statistically significant at $\alpha < 0.05$.
Abbreviation: ASD, autism spectrum disorder.

unmet need between children with private vs public health insurance is mixed.[30] Interestingly, the parents of black children with ASD in our sample, who had a much higher rate of using Medicaid as their primary insurance, reported less unmet need than did the parents of white children with ASD. This is consistent with studies suggesting that parents of black children with ASD may perceive less need for medical care than white parents, despite their objective need being similar.[31] Perception of need may be affected by stigma in the black community regarding diagnosis and treatment for mental health conditions, and a lack of awareness of the benefit of different types of treatment.[32] The perception of need also may be affected by provider behavior. For example, parents of black children report significantly less provider elicitation of developmental concerns.[33] Parents who are not asked about concerns regarding their child's development may think that addressing these concerns is not important. If parents of minority children with developmental concerns do not feel that their concerns are valid, they may perceive less need for care. This may indicate a conservative bias in our findings due to under-reported unmet need. However, under-reporting of unmet need by parents of children with milder needs would result in a higher concentration of parents of children with more severe needs in the study population. If such under-reporting occurred only among parents of black children with ASD, it could bias our results away from the null.

Our finding regarding the effects of waivers on black-white disparities stands in contrast to findings from studies of states' autism insurance mandates that require private insurance plans to cover ASD assessment and treatment.[34] Despite evidence that these mandates result in increased diagnosis of ASD,[35] they have not been found to affect racial disparities in parent-reported outcomes.[36] Medicaid HCBS waivers may have more effect on racial disparities among children with ASD than private insurance mandates because Medicaid-enrolled children with ASD use more services than those with private insurance,[37] providing them with more opportunities to receive care perceived as needed. Medicaid-reimbursed services also do not commonly require the copays required by private insurance,[38] potentially explaining the differences in service utilization compared to private insurance. Previous work has shown that among children with unmet health care need, white children were twice as likely to initiate a mental health care encounter as black children.[39] In our sample, black children with ASD were more likely to be in lower-income households than white children with ASD. If disparity in initiation of care is affected by cost, reducing out-of-pocket costs could be an important component in reducing disparities among children with ASD.

Our study contributes to the growing evidence regarding the benefits of implementing HCBS Medicaid waivers for children with ASD, with other studies finding that Medicaid waivers improve independent living skills and family quality of life,[40] reduce inpatient hospitalizations,[41] and lead parents of Medicaid-enrolled children with ASD to report that their insurance coverage was adequate and comparable to that of parents of children with commercial insurance.[42] Yet not all states have adopted such waivers, and in states that have adopted waivers, the characteristics of waivers vary

substantially across states. A survey of state Medicaid directors found that states that have not implemented ASD-specific waivers and do not perceive a need to do so felt that children with ASD were already provided adequate coverage through existing Medicaid benefits;[43] however, most state Medicaid plans do not cover services such as physical and occupational therapy or behavior modification, commonly used to address the impairments associated with ASD.[44]

In July 2014, the Centers for Medicaid and CHIP Services issued a bulletin clarifying the role of Medicaid waivers for children with ASD.[45] The new guidance clarifies that Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, available to all Medicaid-enrolled children, cover most needs of children with ASD. Therefore, services provided under 1915(c) waivers, such as those included in this study, must be above and beyond what is already covered by EPSDT. This new guidance may improve access for children living in states without ASD waivers, potentially opening up more available services. However, some states may decide to discontinue waivers that they feel are no longer necessary due to EPSDT coverage, which would be most likely to affect those individuals who would not otherwise be Medicaid-eligible without the waivers. If states wish to continue to reach this population, they will have to ensure that they have a waiver in place that provides services above and beyond those provided by EPSDT.

Several study limitations should be noted. The diagnosis of ASD and unmet need was self-reported by the parents of the children included in this study, and as previously noted, perceived need for care varies systematically by race/ethnicity.[31] Additionally, this study relied on review of waiver applications approved by CMS. Due to budget constraints or other limitations, a state may not implement an approved waiver or may not implement the waiver to the extent indicated on the CMS application. Often waivers are not fully funded by states or may actually serve far fewer children than expected.[43] Further, we were unable to directly observe the effect waivers have on unmet need, as the survey data did not include information on whether or not a child with ASD was enrolled in a waiver. Finally, we were unable to account for all waivers that may have provided benefits to children with ASD, as our study only included waiver information for 1915(c) waivers that expressly included children with ASD in their target population. These last limitations would likely bias our results toward the null, however, making our findings particularly robust.

Despite these limitations, our study findings suggest that Medicaid HCBS waivers have the potential to ameliorate the well-documented black-white disparities among children with ASD, although do not appear to affect non-Hispanic/Hispanic disparities. Policies such as Medicaid waivers have the potential to dramatically change the landscape of how individuals with ASD are cared for. Future study should focus on determining the characteristics of Medicaid HCBS waivers that can affect disparities in unmet need among children with ASD. Replicating the most effective characteristics of waivers should be the focus of future policy development.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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