RESEARCH REPORT

CCDF Eligibility in Wisconsin, Statewide and in Substate Areas

A Microsimulation Analysis

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CCDF Eligibility in Wisconsin, Statewide and in Substate Areas

The Child Care and Development Fund (CCDF) provides child care subsidies to families with low incomes, helping them access affordable child care so that parents can work or participate in education or other approved activities. In Wisconsin, we estimate 175,500 children in 100,300 families are eligible to participate in CCDF in the average month. When we compare the eligibility estimates to the number of families and children who participate in CCDF, we estimate 18 percent of eligible children participate and 19 percent of eligible families participate.

The factors that affect CCDF participation—including knowledge of the CCDF program, the availability of other options for obtaining lower-cost care, and the cost of unsubsidized care—are likely not constant across a state. Therefore, a full understanding of the reach of a state's CCDF program among eligible families and children requires estimates of eligibility at a substate level. We provide these estimates for Wisconsin.

In Wisconsin, the majority of the eligible children live in one-parent families (126,500), have monthly family incomes between 100 and 200 percent of the federal poverty guidelines (107,500), and have parents who work at least 35 hours a week (101,400). A little over a quarter of the eligible children (50,100) live in Milwaukee. Next, we describe the methods used to develop the estimates and provide detailed results.

Methods for Estimating Eligibility

This analysis uses the Urban Institute's Analysis of Transfers, Taxes, and Income Security (ATTIS) state-level microsimulation model and applies it to information on Wisconsin families from the American Community Survey (ACS). The ATTIS model captures Wisconsin's actual CCDF eligibility policies to the greatest extent possible, and it includes adjustments to some aspects of the ACS data that help improve the eligibility estimates. The appendix provides more details about the modeling and the fit of the data.

ATTIS Microsimulation Model

Microsimulation models apply policy and program rules at an individual and household level to help answer detailed policy questions related to program eligibility, enrollment, benefits, and taxes. In effect,

for each family included in the survey data, the model goes through the same steps that a caseworker would follow to determine if that family is eligible for a benefit. The ATTIS model uses ACS data to allow for national, state, and substate analysis. The model is comprehensive, estimating eligibility, benefits, and enrollment for the major tax and benefit programs, including child care subsidies. To have access to a very large sample of families and children in Wisconsin for this analysis, we use the five-year ACS data that combine data from the 2014 through 2018 ACS files.

To accurately determine CCDF eligibility, we first use the ATTIS model to correct for underreporting and come close to the actual number of Wisconsin individuals and families receiving benefits from unemployment insurance, (Supplemental Security Income) SSI, and Temporary Assistance for Needy Families (TANF), adjusting for various limitations in the ACS data. These steps (described in more detail in the appendix) improve the accuracy of our CCDF eligibility estimates and of our information on the characteristics of eligible children and families.

As a final refinement, we use ATTIS's capability for modeling CCDF participation, simulating a CCDF caseload among eligible families that comes close to actual CCDF program participation. We do this because the level of participation affects the average monthly eligibility figures, because eligibility limits are higher for families who are already enrolled. We describe these adjustments in more detail in the appendix.

Mapping Households to Income Maintenance Consortia and Urban Zones

For this analysis, the Wisconsin Department of Children and Families was interested in CCDF eligibility estimates for substate geographic areas. The department provided a list of Income Maintenance (IM) Consortia and Urban Zones that administer the CCDF program for counties or groups of counties. To provide estimates at this substate level, we use information on Public Use Microdata Areas (PUMAs)—a geographic concept included in the survey data—and map those areas to the IM Consortia and Urban Zones. The appendix provides more information about the mapping plan and results.

Wisconsin CCDF Policies

This analysis uses Wisconsin's eligibility rules in effect in 2018.[1] Most of the rules were obtained from the CCDF Policies Database project's annual Book of Tables (Tran, Dwyer, and Minton 2019). Additional rules were taken from the full CCDF Policies Database.[2]

ATTIS applies a series of state-level CCDF policies to determine eligibility for subsidies. These include tests such as making sure the parents or guardians are engaged in an approved activity, a child is under the state age limit, the child is either a citizen or an authorized immigrant (a federal requirement applied to all states), the family passes any state assets tests, and the family has income below the state's specified income limit. The model also applies state policies for defining the family unit and calculating family income. After the model determines eligibility for each household, it also applies rules regarding copayments and reimbursement rates to calculate family and state expenditures.

For Wisconsin, we use the following 2018 rules:

- Children are eligible if under age 13 or if under age 18 if the child has special needs.
- Working, participating in certain education or training activities, or searching for a job (if the family is already receiving a subsidy) are allowable activities for parents or caretakers.
- The family includes siblings living in the household in the family unit through age 18 if they are still in school but only through age 17 if they are not in school.
- A parent is considered a teen through age 19 if he or she is still in school. If a teen parent lives with an adult parent and the teen parent's minor siblings, they are considered one family unit.
- Other relatives, such as aunts, uncles, or grandparents who live in the household, are not included.
- Families with nonparent caretakers (e.g., grandparents caring for their grandchildren when the parents are not living in the household) may apply for CCDF in Wisconsin, but a caretaker is considered a part of the family unit, and the caretaker's income is counted when determining eligibility.
- Any income earned by siblings in the unit is not counted.
- There are no earnings disregards for parents.
- Income from TANF, general assistance, SSI, and Social Security Disability Insurance is not counted. Further, income from child support is only counted if the total amount received is more than $1,250 a month (the ATTIS model does not capture this level of detail, so child support income is treated as not counted in our simulations).
- Families must have assets below $25,000; the value of all vehicles owned by the family does not count toward that limit.[3]
- Two different eligibility thresholds are used, one for families initially applying to receive a subsidy (initial eligibility limit) and one for families already receiving a subsidy (continuing eligibility limit; table 1). The initial income limit is set at 185 percent of the federal poverty guidelines for most families, and the continuing income limit is set at 85 percent of the state median income.

If a family in the ACS data meets all income and eligibility criteria described here, the model identifies them as eligible to receive a CCDF-funded subsidy in Wisconsin. These estimates focus on technical eligibility and are not the same as estimates of families who might want or believe they need child care. Families with parents who are not working or in school are not considered potentially eligible, although some of those families might want a subsidy in order to facilitate work or school attendance. Some families who are counted as eligible may not want or believe they need a subsidy.

TABLE 1

Wisconsin CCDF Income Eligibility Limits, 2018

Family size	Initial eligibility limit	Continuing eligibility limit
2	$2,538	$4,107
3	$3,204	$5,073
4	$3,870	$6,039
5	$4,536	$7,005
6	$5,202	$7,972
7	$5,868	$8,153
8	$6,534	$8,334
9	$7,200	$8,515
10	$7,866	$8,696

Source: CCDF Policies Database (https://ccdf.urban.org).
Notes: No limit is listed for a family size of one because the 2018 state rules do not allow for child-only units.

CCDF Eligibility in Wisconsin

Using the ATTIS microsimulation model and Wisconsin's 2018 CCDF policy rules as captured in the CCDF Policies Database, we estimate that approximately 100,300 families and 175,500 children are eligible for CCDF in the average month. Across the IM Consortia and Urban Zones in the state, the number of eligible children ranges from 900 to 50,100 in the average month. The ACS data used for the estimates include families surveyed from 2014 through 2018; to the extent that population and economic characteristics changed in Wisconsin across that period, the simulated numbers could misestimate eligibility during 2018. Here we provide more detailed state and substate estimates.

State-Level CCDF Eligibility

Across Wisconsin, we estimate approximately 175,500 children are eligible for CCDF in the average month using the 2018 policies (table 2). Because the estimates are based on a survey, they could differ from the true numbers. However, the very large sample size of the ACS five-year data produces a high

level of statistical reliability. We can be 95 percent certain that the average monthly number of children eligible for CCDF in Wisconsin falls between 171,300 and 179,600.

TABLE 2

Demographics of Children Eligible for CCDF in Wisconsin in the Average Month (2014–18)

	Average monthly number	As share of eligible children	Standard error	95% confidence interval lower bound	95% confidence interval upper bound
Total for Wisconsin	175,500	100%	2,134	171,300	179,600
By age of child					
0–2	37,000	21%	1,067	34,900	39,000
3–5	39,100	22%	1,097	37,000	41,300
6–12	96,000	55%	1,661	92,800	99,300
13+ (underestimate[a])	3,400	2%	328	2,700	4,000
By monthly income level[b]					
<100% of FPG	65,300	37%	2,147	61,100	69,500
100–200% of FPG	107,500	61%	2,685	102,200	112,800
>200% of FPG	2,600	1%	446	1,700	3,500
By monthly income[c,d]					
$0–$833	13,700	8%	1,113	11,500	15,900
$834–$1250	16,300	9%	1,212	13,900	18,700
$1251–$1667	19,400	11%	1,321	16,800	22,000
$1668–$2083	24,700	14%	1,486	21,800	27,600
$2084+	101,400	58%	2,880	95,800	107,100
By TANF receipt[c]					
Receives	3,900	2%	407	3,100	4,700
Does not receive	171,600	98%	2,441	166,800	176,400
By work status[c,e]					
1–19 hours	14,300	8%	724	12,900	15,700
20–34 hours	54,000	31%	1,375	51,300	56,700
35+ hours	101,400	58%	1,832	97,800	105,000
Student	4,200	2%	397	3,500	5,000
Job search	1,600	1%	242	1,100	2,000
Children by race or ethnicity					
White, Asian, or multiple races, non-Hispanic	107,300	61%	1,744	103,900	110,700
Black, non-Hispanic	35,300	20%	1,044	33,300	37,400
Hispanic	32,800	19%	1,008	30,800	34,800
By number of parents or guardians					
Two (married couple or 2 unmarried parents)	49,000	28%	1,314	46,400	51,600
One (unmarried parent with no partner or with a non-parent partner)	126,500	72%	2,015	122,500	130,400
By presence of earnings[c]					
Earnings	171,900	98%	2,117	167,700	176,000
No earnings	3,600	2%	339	2,900	4,300

Source: Urban Institute ATTIS model; using 2014–18 five-year American Community Survey data from the IPUMS project at the University of Minnesota (Ruggles et al. 2020)

Notes: FPG = federal poverty guidelines. Eligibility estimates and confidence intervals are rounded to the nearest 100.

[a] ATTIS only identifies teenagers as having special needs when they receive Supplemental Security Income, thereby

underestimating the size of this group.
[b] The poverty status shown here is the monthly poverty status (using the federal poverty guidelines) of the entire family, including related subfamilies as part of the primary family.
[c] Data on income, Temporary Assistance for Needy Families status, work status, and presence of earnings are monthly and could vary for the same family over a year.
[d] Income is prior to the state's income deductions for Temporary Assistance for Needy Families, general assistance, Supplemental Security Income, Social Security Disability Insurance, and child support. The cutoffs for the monthly income categories are equal to one-twelfth of $10,000, $15,000, $20,000, and $25,000.
[e] For married-couple families and cohabiting parents, if either the head or the spouse or second parent is a student with zero earnings, the family is in the "student" category. If both the head and the spouse or second parent have earnings, the lower hours-per-week is used to determine the family's category. If at least one parent does not have earnings, neither is a student, and at least one parent is participating in job search, the family is in the "job search" category.

The eligibility estimates can be compared to the caseload numbers to determine the state's participation rate, or the share of eligible children and families who receive subsidized child care. In total, Wisconsin's child care subsidy program served 31,800 children in 19,100 families in the average month of 2018 (considering all those receiving subsidies through the program, even if funded by non-CCDF dollars added into the program by the state). Those numbers suggest that 18 percent of eligible children (31,800 recipients out of 175,500 eligibles) and 19 percent of eligible families (19,100 recipients out of 100,300 eligibles) receive subsidies in the average month.

More than half of the eligible children (57 percent) are age 6 or older, and almost all (98 percent) reside in families with earnings. Thirty-nine percent of eligible children identify as Hispanic or as Black, non-Hispanic. More than two-thirds of the children are in households with only one parent or guardian.

We estimate approximately 100,300 families are eligible for CCDF in the average month (table 3). Almost all eligible families have working parents and guardians, with more than half working full time. However, more than one-third of the families have income below 100 percent of the federal poverty guidelines. We can be 95 percent certain that the average monthly number of eligible families falls between 97,100 and 103,600.

TABLE 3

Demographics of Families Eligible for CCDF in Wisconsin in the Average Month (2014–18)

	Average monthly number	As share of eligible families	Standard error	95% confidence interval lower bound	95% confidence interval upper bound
Total for Wisconsin	100,300	100%	1,661	97,100	103,600
By age of child					
0–2	31,600	32%	985	29,700	33,600
3–5	24,500	24%	872	22,800	26,200
6–12	42,700	43%	1,134	40,500	44,900
13+ (underestimate[a])	1,500	1%	218	1,100	1,900
By Monthly income level[b]					

	Average monthly number	As share of eligible families	Standard error	95% confidence interval lower bound	95% confidence interval upper bound
<100% of FPG	37,500	37%	1,068	35,400	39,600
100–200% of FPG	60,900	61%	1,336	58,200	63,500
>200% of FPG	2,000	2%	250	1,500	2,400
By monthly income[c,d]					
$0–$833	9,500	9%	927	7,700	11,300
$834–$1250	11,400	11%	1,016	9,400	13,400
$1251–$1667	11,800	12%	1,035	9,800	13,900
$1668–$2083	16,200	16%	1,206	13,800	18,600
$2084+	51,400	51%	2,093	47,300	55,500
By TANF receipt[c]					
Receives	2,000	2%	295	1,500	2,600
Does not receive	98,300	98%	1,900	94,600	102,000
By work status[c,e]					
1–19 hours	7,700	8%	532	6,600	8,700
20–34 hours	30,900	31%	1,049	28,900	33,000
35+ hours	58,000	58%	1,407	55,200	60,700
Student	2,900	3%	328	2,300	3,500
Job search	900	1%	180	500	1,200
By number of parents/guardians					
Two (married couple or two unmarried parents)	23,000	23%	910	21,200	24,800
One (unmarried parent with no partner or with a non-parent partner)	77,300	77%	1,600	74,200	80,500
By presence of earnings[c]					
Earnings	97,800	98%	1,643	94,600	101,100
No earnings	2,500	2%	282	1,900	3,000

Source: Urban Institute ATTIS model; using 2014–18 five-year American Community Survey data from the IPUMS project at the University of Minnesota (Ruggles et al. 2020).

Notes: Eligibility estimates and confidence intervals are rounded to the nearest 100.

[a] ATTIS only identifies teenagers as having special needs when they receive Supplemental Security Income, thereby underestimating the size of this group.

[b] The poverty status shown here is the monthly poverty status (using the poverty guidelines) of the entire family, including related subfamilies as part of the primary family.

[c] Data on income, Temporary Assistance for Needy Families status, work status, and presence of earnings are monthly and could vary for the same family over a year.

[d] Income is prior to the state's income deductions for Temporary Assistance for Needy Families, general assistance, Supplemental Security Income, Social Security Disability Insurance, and child support. The cutoffs for the monthly income categories are equal to one-twelfth of $10,000, $15,000, $20,000, and $25,000.

[e] For married-couple families and cohabiting parents, if either the head or the spouse or second parent is a student with zero earnings, the family is in the "student" category. If both the head and the spouse or second parent have earnings, the lower hours-per-week is used to determine the family's category. If at least one parent does not have earnings, neither is a student, and at least one parent is participating in job search, the family is in the "job search" category.

Substate CCDF Eligibility

Across the IM Consortia and Urban Zones in the state, the number of eligible children in the average month ranges from 900 in the Southern Rural Consortium to 50,100 in Milwaukee (table 4).

TABLE 4

Children Eligible for CCDF in Wisconsin Substate Areas in the Average Month (2014–18)

	Average monthly number	Standard error	95% confidence interval lower bound	95% confidence interval upper bound
Total for Wisconsin	175,500	2,134	171,300	179,600
Selected counties[a]				
Kenosha	7,400	416	6,600	8,200
Racine	8,400	445	7,500	9,200
IM Consortia and Urban Zones[b]				
Bay Lake Rural	2,700	258	2,200	3,200
Bay Lake Semi-Rural	1,500	199	1,100	1,900
Bay Lake Urban	9,700	496	8,800	10,700
Capital Rural	1,200	179	900	1,600
Capital Semi-Rural	4,600	345	3,900	5,200
Capital Semi-Urban	4,300	343	3,700	5,000
Capital Urban	11,800	568	10,700	12,900
Central Semi-Rural	1,100	172	700	1,400
Central Semi-Urban	3,800	329	3,200	4,500
East Central Rural	1,800	213	1,400	2,200
East Central Semi-Rural	2,200	239	1,700	2,700
East Central Semi-Urban	7,200	446	6,300	8,100
East Central Urban	4,600	348	3,900	5,300
Great Rivers Rural	2,200	236	1,700	2,600
Great Rivers Semi-Rural	7,600	452	6,700	8,500
Great Rivers Semi-Urban	1,400	188	1,000	1,800
Great Rivers Urban	2,800	273	2,300	3,400
Milwaukee	50,100	1,065	48,000	52,200
Moraine Lakes Semi-Urban	9,000	499	8,000	10,000
Moraine Lakes Urban	4,400	361	3,700	5,100
Northern Rural	3,100	273	2,500	3,600
Northern Semi-Rural	1,600	203	1,200	2,000
Northern Semi-Urban	1,700	216	1,300	2,200
Southern Rural	900	161	600	1,300
Southern Semi-Rural	2,800	274	2,300	3,400
Southern Semi-Urban	1,300	193	900	1,700
Southern Urban	6,200	392	5,400	7,000
WKRP Urban	15,700	609	14,500	16,900
WREA Rural	4,000	320	3,400	4,700
WREA Semi-Rural	1,600	209	1,200	2,000
WREA Urban	2,400	258	1,900	2,900

Source: Urban Institute ATTIS model; using 2014–18 five-year American Community Survey data from the IPUMS project at the University of Minnesota (Ruggles et al. 2020).

Notes: Estimates for Wisconsin were calculated using the 2018 five-year American Community Survey file to increase the sample size and reliability of substate estimates. Eligibility estimates are rounded to the nearest 100. Estimates for the IM Consortia and Urban Zones may not add to the totals because of rounding.

[a] The two counties shown separately are also included in the IM Consortia and Urban Zones estimates.

[b] Households were mapped to an IM Consortia or Urban Zone based on their PUMA and a mapping plan developed by Urban Institute staff.

The very large sample size of the ACS five-year data gives most of the estimates a fairly high degree of statistical reliability, with greater certainty regarding the estimates for larger places. For example, we are 95 percent certain that the average monthly number of children eligible for CCDF in Milwaukee falls between 48,000 and 52,200 (plus or minus about 4 percent of the best estimate of 50,100). With a much smaller place, the Bay Lake Rural area, we can only be 95 percent certain that the true estimate lies between 2,200 and 3,200, which is plus or minus 19 percent of the best estimate of 2,700. These degrees of uncertainty are inherent in any use of survey data and are not a reflection on the quality or accuracy of the simulation methods.

Considering the total age-eligible child population (children under age 13 or receiving SSI), the average monthly number of eligible children ranges from 7 to 30 percent of the age-eligible child population in each area of the state (table 5) and is 19 percent statewide. The estimated percentage of age-eligible children who are eligible for CCDF is lowest in the Moraine Lakes Urban area (7 percent) and the Southern Semi-Urban area (10 percent). The estimated percentage of age-eligible children who are eligible for CCDF is highest in Milwaukee (30 percent) and in the WRKP Urban area (27 percent). The percentages differ from one area to another because of differences in family income and differences in the degree to which parents and guardians are working or in school.

The average monthly number of eligible families ranges from 500 in the Southern Rural Consortium to 26,400 in Milwaukee (table 6). As expected, we see a smaller number of eligible children and families in less densely populated rural areas.

TABLE 5

Eligible Children Among Child Population in Wisconsin (2014–18)

	Average monthly number of eligible children	Age-eligible child population[a]	Eligible children as a share of child population in each area
Total for Wisconsin[b]	175,500	915,198	19%
Selected counties[c]			
Kenosha	7,400	27,190	27%
Racine	8,400	31,933	26%
IM Consortia and Urban Zones[d]			
Bay Lake Rural	2,700	11,962	23%
Bay Lake Semi-Rural	1,500	8,929	17%
Bay Lake Urban	9,700	45,427	21%
Capital Rural	1,200	6,435	19%
Capital Semi-Rural	4,600	24,578	19%
Capital Semi-Urban	4,300	27,739	16%
Capital Urban	11,800	80,167	15%
Central Semi-Rural	1,100	7,368	15%
Central Semi-Urban	3,800	32,397	12%
East Central Rural	1,800	8,201	22%
East Central Semi-Rural	2,200	11,422	19%
East Central Semi-Urban	7,200	51,379	14%
East Central Urban	4,600	25,245	18%
Great Rivers Rural	2,200	10,579	21%
Great Rivers Semi-Rural	7,600	46,199	16%
Great Rivers Semi-Urban	1,400	6,605	21%
Great Rivers Urban	2,800	15,625	18%
Milwaukee	50,100	169,806	30%
Moraine Lakes Semi-Urban	9,000	64,595	14%
Moraine Lakes Urban	4,400	59,190	7%
Northern Rural	3,100	12,668	24%
Northern Semi-Rural	1,600	8,205	20%
Northern Semi-Urban	1,700	10,552	16%
Southern Rural	900	6,386	14%
Southern Semi-Rural	2,800	16,145	17%
Southern Semi-Urban	1,300	13,039	10%
Southern Urban	6,200	27,432	23%
WKRP Urban	15,700	59,123	27%
WREA Rural	4,000	19,519	20%
WREA Semi-Rural	1,600	11,702	14%
WREA Urban	2,400	16,579	14%

Source: Urban Institute ATTIS model; using 2014–18 five-year American Community Survey data from the IPUMS project at the University of Minnesota (Ruggles et al. 2020).

Notes: Estimates for Wisconsin were calculated using the 2018 five-year ACS file to increase the sample size and reliability of substate estimates. Eligibility estimates are rounded to the nearest 100. Estimates for the IM Consortia and Urban Zones may not add to the totals because of rounding.

[a] The child population counts come from ATTIS and are average monthly estimates of children under age 13 or receiving SSI.

[b] The child population shown here includes the population for the IM Consortia and Urban Zones; Menominee, WI is not included.

[c] The two counties shown separately are also included in the IM Consortia and Urban Zones estimates.

[e] Households were mapped to an IM Consortia or Urban Zone based on their PUMA and a mapping plan developed by Urban Institute staff.

TABLE 6

Families Eligible for CCDF in Wisconsin Substate Areas in the Average Month (2014–18)

	Average monthly number	Standard error	95% confidence interval lower bound	95% confidence interval upper bound
Total for Wisconsin	100,300	1,661	97,100	103,600
Selected counties[a]				
Kenosha	4,000	323	3,400	4,600
Racine	5,200	365	4,500	5,900
IM Consortia and Urban Zones[b]				
Bay Lake Rural	1,300	187	900	1,600
Bay Lake Semi-Rural	900	158	600	1,200
Bay Lake Urban	5,300	378	4,500	6,000
Capital Rural	600	132	400	900
Capital Semi-Rural	2,600	271	2,100	3,200
Capital Semi-Urban	2,900	284	2,300	3,400
Capital Urban	7,000	448	6,200	7,900
Central Semi-Rural	700	139	400	1,000
Central Semi-Urban	2,500	267	1,900	3,000
East Central Rural	1,100	170	700	1,400
East Central Semi-Rural	1,200	181	800	1,500
East Central Semi-Urban	4,100	346	3,500	4,800
East Central Urban	2,900	283	2,400	3,500
Great Rivers Rural	1,300	185	900	1,600
Great Rivers Semi-Rural	4,400	352	3,700	5,100
Great Rivers Semi-Urban	900	152	600	1,200
Great Rivers Urban	1,600	212	1,200	2,100
Milwaukee	26,400	810	24,800	27,900
Moraine Lakes Semi-Urban	5,300	389	4,500	6,000
Moraine Lakes Urban	2,900	297	2,300	3,500
Northern Rural	1,700	213	1,300	2,100
Northern Semi-Rural	900	161	600	1,200
Northern Semi-Urban	1,200	178	800	1,500
Southern Rural	500	119	300	700
Southern Semi-Rural	1,600	213	1,200	2,100
Southern Semi-Urban	800	158	500	1,200
Southern Urban	3,500	305	2,900	4,100
WKRP Urban	9,200	487	8,300	10,200
WREA Rural	2,500	258	2,000	3,000
WREA Semi-Rural	900	164	600	1,300
WREA Urban	1,600	212	1,200	2,000

Source: Urban Institute ATTIS model; using 2014–18 five-year American Community Survey data from the IPUMS project at the University of Minnesota (Ruggles et al. 2020)

Notes: Estimates for Wisconsin were calculated using the 2018 five-year ACS file to increase the sample size and reliability of substate estimates. Eligibility estimates are rounded to the nearest 100. Estimates for the IM Consortia and Urban Zones may not add to the totals due to the rounding.

[a] The two counties shown separately are also included in the IM Consortia and Urban Zones estimates.

[b] Households were mapped to an IM Consortia or Urban Zone based on their PUMA and a mapping plan developed by Urban Institute staff.

Differences between ACS and CPS Eligibility Estimates

In addition to the eligibility estimates produced for this analysis, we produce CCDF eligibility estimates regularly as part of our work for the federal Department of Health and Human Services' Office of the Assistant Secretary for Planning and Evaluation using the Transfer Income Model, version 3 (TRIM3) microsimulation model.[4] The estimates produced for this analysis differ from the TRIM3 estimates. Although 2018 estimates are not yet available for TRIM3, the estimates in this brief are somewhat lower than estimates of CCDF eligibility in Wisconsin produced by the TRIM3 model in recent years.

Our estimates using ATTIS use very similar methods to those produced with TRIM3, but the two models use different data sources. TRIM3 estimates use Current Population Survey (CPS) data instead of the ACS data used by ATTIS. The ACS data provide a larger sample size, thus generally allowing for more reliable estimates at the state level. Even when two years of CPS data are combined, state-specific sample sizes are much smaller than ACS sample sizes, and standard errors are therefore larger. On the other hand, a benefit of the CPS is that it captures more-detailed information on household income than the ACS, which may also affect the eligibility estimates (Wheaton, Giannarelli, and Morton 2018). In general, the Census Bureau recommends generally using the ACS for state-specific estimates.[5]

The estimates shown here will also vary somewhat from other eligibility estimates using ATTIS because this analysis uses several years of ACS data (the 2014–18 five-year file) to increase the sample size for the substate areas. ATTIS analyses that focus only on state-level results and use a single year of ACS data may vary. From 2014 to 2018, the number of children in Wisconsin fell slightly, which would work in the direction of lowering CCDF eligibility estimates, but the unemployment rate also fell, which could increase CCDF eligibility estimates. A preliminary ATTIS simulation of CCDF eligibility using the ACS data collected solely in 2018 shows 174,500 children eligible for CCDF in the average month of the year. That figure is only slightly below the estimate of 175,500 obtained with the 2014–18 data used for this analysis, indicating that to a large extent, the various changes in the state from 2014 to 2018 are offsetting. (We do not provide any substate estimates from the single-year 2018 ACS data because those data do not have enough observations to reliably estimate substate eligibility.) This suggests that the CCDF eligibility estimates based on the 2014–18 provide reasonable approximations of eligibility in 2018.

Summary

Using the ATTIS microsimulation model, we can understand more about the need for child care subsidies among populations with low incomes in different states and in different substate geographic areas. Microsimulation modeling allows us to apply the detailed program rules to the households in the

survey and determine whether the households qualify for assistance. The detailed survey data also allow us to look at how eligibility varies across different characteristics, such as ages of children, family income, and race and ethnicity.

Our analysis finds approximately 100,300 families and 175,500 children eligible for CCDF in the average month of the year, applying 2018 policies to household data in the 2014–18 ACS data file. Among eligible families, 19 percent participate in the CCDF subsidy program. Most eligible children reside in families where the parents or guardians are working. More than one-third of the families have income below the federal poverty guidelines. Across the state, eligibility varies for different IM Consortia and Urban Zones, with more eligible children and families seen in more populous areas, such as Milwaukee.

Appendix: Methods for Estimating CCDF Eligibility in Wisconsin

This analysis uses the Urban Institute's ATTIS state-level microsimulation model and applies it to information on Wisconsin families from the ACS.[6] Here, we provide more information about ATTIS, the data used for the analysis, Wisconsin's CCDF eligibility policies, and the eligibility estimation process.

ATTIS Microsimulation Model

Microsimulation models apply policy and program rules at an individual and household level to help answer detailed policy questions related to program eligibility, enrollment, benefits, and taxes. In effect, for each family included in the survey data, the model goes through the same steps that a caseworker would follow to determine if that family is eligible for a benefit.

The ATTIS model uses ACS data to allow for national, state, and substate analysis. The model is comprehensive, estimating eligibility, benefits, and enrollment for the major tax and benefit programs, including the Supplemental Nutrition Assistance Program; SSI; TANF; child care subsidies through CCDF; public and subsidized housing; the Low-Income Home Energy Assistance Program; and the Special Supplemental Nutrition Program for Women, Infants, and Children, and computing payroll taxes and federal and state income taxes.

The ATTIS model is robust, allowing us to both analyze single programs and account for program interactions. Although the analysis presented here relies primarily on the ATTIS capabilities to estimate eligibility for the CCDF program, additional capabilities increase the precision of the estimates.

Data Preparation

To simulate CCDF eligibility in ATTIS, we first need to select a particular ACS data file, prepare the ACS data for use in the model, and map the existing geographic information to the substate child care areas that are the focus of this analysis.

Choice of ACS Data for This Analysis

The ACS is an ongoing survey conducted by the US Census Bureau. The survey collects information from over 2 million households across the United States each year, providing detailed information not only about the nation as a whole but also about states and high-population cities or counties.[7] To allow users to obtain information for smaller areas, the Census Bureau also creates files that combine information from five consecutive years of ACS surveys. Files are made available for public use that include approximately half of the total surveyed households.

To have access to a very large sample of families and children in Wisconsin for this analysis, we use the five-year ACS data that combine data from the 2014 through 2018 ACS files. We obtained the data from the IPUMS project at the University of Minnesota so that we could use some enhancements to the data made by the IPUMS researchers (Ruggles et al. 2020).[8]

The 2014–18 ACS file includes information on 119,300 Wisconsin households comprising 281,000 people. The Census Bureau adjusts the sampling weights in the five-year sample to represent an average of the circumstances of families across the period rather than representing any single year of the period. However, the Census Bureau adjusts the dollar amounts in the earlier years to be consistent with 2018 dollars, accounting for inflation across the period. We also use an adjustment that makes the annual dollar amounts reported in the survey more consistent with the calendar year.[9]

Census Bureau population estimates show that from 2014 to 2018, the population of Wisconsin increased 1.1 percent overall (from 5.75 million in 2014 to 5.81 million in 2018) but the population of children age 12 and under fell 2.2 percent, from 0.926 million in 2014 to 0.906 million in 2018.[10] The five-year file includes 0.915 million children age 12 and under, slightly *higher* than the actual 2018 figure. However, because the numbers of Black and Hispanic children in Wisconsin increased somewhat over the period, the 2014–18 file has somewhat *fewer* Black and Hispanic children than were in Wisconsin in 2018. Another difference between the five-year file and 2018 circumstances is the unemployment rate: it declined in Wisconsin from 5.3 percent in July 2014 to 3.0 percent in July 2018, so the number of employed people in the five-year file is somewhat lower than the number employed in 2018.[11] Nevertheless, for this analysis, the benefits of increased statistical reliability caused by the additional sample size outweigh the disadvantage that the five-year data do not exactly capture the circumstances in any particular year of the period.[12]

Preparing the ACS Data

Using the data for the simulations requires a few preparations. Key imputations for this analysis include imputing whether a cohabiting partner is also a parent (because parents are always included in the CCDF family unit even if they are not married); imputing the legal status of noncitizens (because children who are unauthorized immigrants or temporary residents are not eligible for CCDF); allocating annual income and weeks of work across the months of the year (because if parents begin working midway through the year, and they are not in school or training before starting to work, they are likely not eligible for CCDF in the earlier portion of the year); and allocating the amount of income reported as "other" income in the ACS to be either unemployment insurance benefits, child support income, or some other type of income (because Wisconsin's CCDF program treats child support income differently from unemployment insurance benefits). For more information on ATTIS data preparation, see Wheaton, Giannarelli, and Morton (2018).

Mapping Households to Income Maintenance Consortia and Urban Zones

For this analysis, the Wisconsin Department of Children and Families was interested in CCDF eligibility estimates for substate geographic areas. The department provided a list of IM Consortia and Urban Zones that administer the CCDF program for counties or groups of counties. To provide estimates at this substate level, we need to identify the households in the ACS data that reside in each IM Consortium or Urban Zone, but the ACS data do not include identifiers for these Wisconsin-specific groupings. Although we know the counties that are covered by each grouping, the ACS data also do not provide county-specific identifiers for all households: this information is masked in cases where the sample sizes are small enough that individual households are at risk of being identified. Therefore, we use the available geographic identifier: the Public Use Microdata Area.

We use the PUMA designation to map the households to counties that are then mapped to the appropriate IM Consortium or Urban Zone.[13] In cases where the entire PUMA maps to a single consortium or zone, we assign the full PUMA population to that group. In other cases, though, the PUMA includes populations from several consortia and zones. In those cases, we randomly assign households with children to one consortium or zone based on the share of the Wisconsin child population that falls in each area; this comes very close to the actual distribution of each PUMA's child population across the consortium and zone areas (table A.1).[14] For example, the first PUMA listed in table A.1 includes four different consortium/zone areas, with 16.27 percent of the PUMA's children in the Great Rivers Rural area, 26.52 percent in the Great Rivers Semi-Urban area, and so on. Our random

assignments reproduce the targeted distributions almost exactly for all of the PUMAs that include more than one consortium or zone.

The approach used for this mapping follows the methods used by other analysts who have used the ACS for substate analysis of areas that are not identified in the data or that are identified incompletely. (See, for example, Isaacs et al. 2015.) It assumes that economic and demographic characteristics are consistent across a PUMA. To the extent that the families in one zone within a PUMA have different characteristics (e.g., lower incomes, larger family sizes, or a higher share of working parents) than the families in another zone within the PUMA, those differences will not be captured, and the eligibility figures for the specific zone could be somewhat misestimated.

TABLE A.1

Mapping Pumas to IM Consortia and Urban Zones in Wisconsin

PUMA	IM Consortia and Urban Zones	Target percent of households within a PUMA to randomly assign to each consortium or zone	Final percent assigned to each consortium or zone	Closeness to target
100	Great Rivers Rural	16.27%	16.23%	99.7%
100	Great Rivers Semi-Urban	26.52%	26.20%	98.8%
100	Northern Rural	36.58%	36.82%	100.7%
100	Northern Semi-Rural	20.63%	20.74%	100.5%
101	Capital Urban	100.00%	100.00%	100.0%
102	Capital Urban	100.00%	100.00%	100.0%
103	Capital Urban	100.00%	100.00%	100.0%
200	Bay Lake Urban	100.00%	100.00%	100.0%
300	Bay Lake Urban	100.00%	100.00%	100.0%
600	Central Semi-Rural	47.83%	48.15%	100.7%
600	Northern Rural	25.94%	25.46%	98.1%
600	Northern Semi-Rural	26.23%	26.39%	100.6%
700	Great Rivers Semi-Rural	20.19%	20.08%	99.5%
700	Southern Semi-Rural	6.96%	6.95%	99.9%
700	WREA Rural	39.75%	39.85%	100.3%
700	WREA Semi-Rural	33.11%	33.12%	100.0%
800	Capital Semi-Rural	11.75%	11.77%	100.2%
800	Southern Rural	28.76%	28.92%	100.6%
800	Southern Semi-Rural	59.49%	59.31%	99.7%
900	WREA Urban	100.00%	100.00%	100.0%
1000	Capital Semi-Rural	47.03%	47.50%	101.0%
1000	Capital Semi-Urban	52.97%	52.50%	99.1%
1001	Capital Semi-Rural	48.45%	48.73%	100.6%
1001	Southern Semi-Urban	51.55%	51.27%	99.4%
1300	Bay Lake Rural	37.49%	37.74%	100.7%
1300	Bay Lake Semi-Rural	59.20%	59.14%	99.9%
1300	Northern Rural	3.31%	3.12%	94.3%
1301	East Central Rural	21.36%	21.27%	99.6%
1301	East Central Semi-Urban	78.64%	78.73%	100.1%
1400	Bay Lake Rural	28.61%	28.53%	99.7%
1400	East Central Rural	23.50%	23.60%	100.4%

	IM Consortia and Urban Zones	Target percent of households within a PUMA to randomly assign to each consortium or zone	Final percent assigned to each consortium or zone	Closeness to target
1400	East Central Semi-Rural	47.89%	47.87%	100.0%
1401	East Central Semi-Urban	36.54%	36.79%	100.7%
1401	Moraine Lakes Semi-Urban	63.46%	63.21%	99.6%
1500	East Central Semi-Urban	100.00%	100.00%	100.0%
1501	East Central Urban	100.00%	100.00%	100.0%
1600	Central Semi-Urban	100.00%	100.00%	100.0%
1601	Capital Rural	20.42%	20.61%	101.0%
1601	Central Semi-Urban	39.24%	39.99%	101.9%
1601	Northern Semi-Urban	40.34%	39.39%	97.6%
2400	Southern Urban	100.00%	100.00%	100.0%
2500	Capital Semi-Urban	100.00%	100.00%	100.0%
10000	WKRP Urban	100.00%	100.00%	100.0%
20000	Moraine Lakes Semi-Urban	100.00%	100.00%	100.0%
30000	WKRP Urban	100.00%	100.00%	100.0%
40101	Milwaukee	100.00%	100.00%	100.0%
40301	Milwaukee	100.00%	100.00%	100.0%
40701	Milwaukee	100.00%	100.00%	100.0%
41001	Milwaukee	100.00%	100.00%	100.0%
41002	Milwaukee	100.00%	100.00%	100.0%
41003	Milwaukee	100.00%	100.00%	100.0%
41004	Milwaukee	100.00%	100.00%	100.0%
41005	Milwaukee	100.00%	100.00%	100.0%
50000	Moraine Lakes Semi-Urban	100.00%	100.00%	100.0%
55101	Great Rivers Rural	30.70%	30.82%	100.4%
55101	Great Rivers Semi-Rural	37.23%	37.01%	99.4%
55101	WREA Rural	32.08%	32.17%	100.3%
55102	Great Rivers Semi-Rural	100.00%	100.00%	100.0%
55103	Great Rivers Semi-Rural	35.96%	36.15%	100.5%
55103	Great Rivers Urban	64.04%	63.85%	99.7%
70101	Moraine Lakes Urban	100.00%	100.00%	100.0%
70201	Moraine Lakes Urban	100.00%	100.00%	100.0%
70301	Moraine Lakes Urban	100.00%	100.00%	100.0%

Source: Authors' calculations.

Notes: IM = Income Maintenance; PUMA = Public Use Microdata Area. For information on the counties included in each PUMA, we use "GeoCorr 2014: Geographic Correspondence Engine," Missouri Census Data Center, last revised September 10, 2016, http://mcdc.missouri.edu/applications/geocorr2014.html, and information provided by the Wisconsin Department of Children and Families on the counties included in each consortium or zone. Households with children within a PUMA were randomly assigned to each consortium or zone based on the percentage of the PUMA's child population that falls in each consortium or zone. We use the Wisconsin Interactive Statistics on Health Population Model child population estimates (average for 2014–18) for each county to determine the distributions of population across the consortium and zone areas. See "WISH (Wisconsin Interactive Statistics on Health) Data Query System," Wisconsin Department of Health Services, Division of Public Health, Office of Health Informatics, accessed April 27, 2020, https://www.dhs.wisconsin.gov/wish/index.htm.

Simulations to Reach Actual Caseloads for Selected Programs

To accurately determine CCDF eligibility, we use the ATTIS model to come close to the actual number of Wisconsin individuals and families receiving benefits from unemployment insurance, SSI, and TANF, adjusting for various limitations in the ACS data. These steps improve the accuracy of our CCDF eligibility estimates and of our information on the characteristics of eligible children and families.

As a final refinement, we use ATTIS's capability for modeling CCDF participation, simulating a CCDF caseload among eligible families that comes close to actual CCDF program participation. We do this because the level of participation affects the average monthly eligibility figures, because eligibility limits are higher for families who are already enrolled. We describe these adjustments in more detail below.

Unemployment Compensation

Unemployment insurance benefits are not reported directly in the ACS, but respondents are expected to include this income when they report their "other" income (all income other than the amounts separately identified). As mentioned, ATTIS procedures allocate the "other" income across three types: unemployment benefits, child support, and all other income not separately reported. These amounts, distributed across people's weeks of unemployment, appear to capture 66 percent of the actual number of weeks of unemployment compensated in Wisconsin in 2018. Although unemployment compensation is unlikely to make a family ineligible for CCDF if they were eligible when working (because unemployment benefits replace only a portion of earnings), underreported unemployment compensation would affect our modeling of the TANF program, which in turn affects our CCDF results.

The ATTIS procedures select additional unemployed people to represent the nonreporting recipients of unemployment benefits. The simulation is aligned to come close to various state-level demographic targets, such as industry, sex, age group, and race and ethnicity. After alignment, the total number of weeks compensated is within 1 percent of the actual 2018 figure.

Supplemental Security Income

SSI is one of the types of income that is reported individually in the ACS. However, the incidence is generally underreported. The number of adults reporting SSI equals 73 percent of the average monthly

adult caseload in Wisconsin; further, the ACS does not identify children with SSI.[15] Although most adults with SSI are not eligible for CCDF, some also have earnings, and the underreporting of SSI could therefore affect CCDF eligibility estimates. Further, a lack of information on children's SSI would limit our ability to model CCDF eligibility for teens with special needs.

To improve the SSI data, we select additional adult recipients from eligible units that do not report income from SSI in the ACS, and we model SSI for children. The simulated caseload comes within 1 percent of targets for Wisconsin SSI recipients in 2018 for each of three age groups: under age 18, ages 18 to 64, and age 65 and older.

Temporary Assistance for Needy Families

The ACS asks families to report their amount of public assistance income, and TANF is presumably reported in that total. The total number of Wisconsin families with children reporting public assistance income exceeds the total Wisconsin TANF caseload in 2018, but many of those families do not appear eligible for TANF cash aid. Excluding those that appear ineligible (who were presumably reporting some other type of income as being "public assistance"), the remaining number equals 59 percent of Wisconsin's average monthly 2018 TANF caseload. The shortfall of TANF recipients would make our information on the characteristics of the CCDF-eligible families and children less accurate.

To come close to Wisconsin's actual TANF caseload, we select from eligible units that do not report TANF receipt in the ACS. After this alignment, the simulated caseload deviates 0.1 percent from the target for child-only units and 2.5 percent from the target for one-adult units; in percentage terms, the deviation for two-parent units is larger, but that target is very small (200 families) and cannot be reached more exactly.

Child Care and Development Fund

As the final step for our eligibility estimates, we simulate enrollment in the CCDF program. Although this analysis focuses on eligibility rather than subsidy receipt, we need to simulate subsidy receipt so we can more accurately count families who are eligible under continuing eligibility rules. When families first enter the CCDF program, they must meet initial income eligibility limits, and they are not eligible if searching for a job. Families already receiving assistance are eligible to continue receiving subsidies at higher income levels (as described in the body of this report) or if their employment ends and they are looking for a job. If we did not simulate participation, we would be applying the more restrictive initial

eligibility rules to all families, underestimating eligibility. If we treated all eligible families as participating, we would overstate eligibility. By simulating a caseload that comes very close to the actual caseload, we produce a more accurate CCDF eligibility estimate at current participation levels.

The ACS does not include information on child care subsidies, and we use ATTIS to simulate the required information for the ACS households, coming as close as possible to the actual situation in 2018. Eligibility for CCDF subsidies is modeled in detail, following the state's actual policies as described previously. Eligibility is modeled in each month because parents may be eligible for CCDF benefits in only part of the year.

Once we determine eligibility, we identify a subset of the eligible families as CCDF recipients. We select this simulated caseload to come very close to the actual size and characteristics of the caseload in number of families, number of children, age of children, race and ethnicity of children, presence of one or two parents or guardians, family earnings (with or without earnings), TANF receipt (receiving or not receiving), relative family income level (low-income or not), copayment (no copayment or positive amount), and subsidy value.

The caseload targets we align to come from the CCDF administrative data made available by the Office of Child Care.[16] Many child care subsidy programs are funded jointly by CCDF and other funds. In recognition of this joint funding, states are required to report to the federal government a "pooling factor," computed as total CCDF funds divided by all the funds (CCDF and non-CCDF) used to provide the child care subsidies to the children included in the state's administrative data reports to the Office of Child Care. In the most recent administrative data available at the time of this analysis, there are 16,500 children receiving CCDF-funded subsidies in the average month in Wisconsin, with a pooling factor of 0.519. In other words, CCDF funds supported subsidies for approximately 52 percent of children being served in Wisconsin. To get a full picture of the number of children served, we adjust the caseload by the pooling factor to get a target caseload of 31,792 children receiving subsidized child care in the average month. In our ATTIS alignment, we simulate a caseload of 32,071 children in the average month, coming within 1 percent of our target caseload.

Calculating Standard Errors

We provide standard error and confidence interval estimates for all of the eligibility estimates shown in the report. We compute the standard error estimates with the generalized variance function method, using design factors as specified by the Census Bureau for the Public Use Microdata Sample (US Census

Bureau, n.d.). This method calculates the standard error of the total estimates based on the five-year ACS data with the following formula:

$$SE(Y) = DF * \sqrt{\frac{95}{5} * Y * \left(1 - \frac{Y}{N}\right)}$$

Where *DF* = design factor, *N* = size of population in geographic area, and *Y* = estimate of characteristic total.

We base our estimates on the fact that the CCDF-eligible children are a subset of all children age 12 or younger in the geographic area and that the CCDF-eligible families are a subset of all households with children age 18 or younger. We consider the small number of CCDF-eligible children that are older than age 12 to be negligible for the standard error estimate.

The design factors vary by state and characteristic of the estimate and reflect the effects of the sample design and estimation procedures used for the ACS. For estimates that are a combination of two or more characteristics, we follow the Census Bureau recommendation and use the largest design factor.[17]

The tables showing the eligibility estimates show the standard error for each estimate. We also use the standard errors to compute the range within which we are 95 percent certain that the true estimate lies (i.e., a 95 percent confidence interval).[18]

Notes

[1] Income amounts reported by the families surveyed before 2018 have been adjusted to be consistent with 2018 dollars. Therefore, we apply the 2018 income limits to all the families in the survey data.

[2] The CCDF Policies Database is maintained by the Urban Institute under funding from the Office of Planning, Research, and Evaluation within the Department of Health and Human Services, Administration for Children and Families. The data are available for public use at https://ccdf.urban.org. For this analysis, we use the policies in effect on October 1, 2018, because this is the focus date of the CCDF Policies Database annual Book of Tables, from which most of the rules were derived. This is consistent with the rules used for the TRIM3 child care eligibility estimates published by ASPE (Chien 2019).

[3] The ACS data do not ask people how much money they have in financial assets. We estimate a value of assets based on how much income they report having received during the year from interest, dividends, rents, royalties, and estates.

[4] TRIM3 is a microsimulation model developed and maintained at the Urban Institute under primary funding from the Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (HHS/ASPE). The most recent two-year eligibility estimates (2015–16) using TRIM3 and published by ASPE show 219,030 children eligible in Wisconsin in the average month, with a 95 percent confidence interval of 175,150 to 262,900 (Chien 2019).

[5] See "Which Data Source to Use," US Census Bureau, last revised May 10, 2019, https://www.census.gov/topics/income-poverty/guidance/data-sources.html.

[6] The ACS provides a very large sample that increases the reliability of the estimates.

[7] The ACS includes a separate survey of people in group quarters, such as nursing homes, prisons, and homeless shelters. We did not use that portion of the survey, so we could have missed some children living in homeless shelters who are eligible for CCDF.

[8] The ACS asks respondents to report how each person in a household is related to the household reference person but does not ask about interrelationships among all household members. The IPUMS project imputes additional household relationship data that we use in the simulation modeling. See "Family Interrelationship," IPUMS, accessed May 6, 2020, https://usa.ipums.org/usa/chapter5/chapter5.shtml.

[9] The ACS surveys households continuously across the year and asks about income received over the prior 12 months. For example, a household surveyed in July 2018 reports income for July 2017 through June 2018. Reported incomes are increased slightly for greater consistency with the calendar year.

[10] See "State Population by Characteristics: 2010-2019",," US Census Bureau, last revised March 2, 2020, https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html.

[11] See the Bureau of Labor Statistics, Local Area Unemployment Statistics database, seasonally-adjusted unemployment rate data for Wisconsin, available at https://www.bls.gov/lau/.

[12] Statistical methods exist to "reweight" a five-year file to represent key population characteristics in a single year of data. However, reweighting that simultaneously considers several characteristics (such as age of children, race and ethnicity, and employment) and was not undertaken for this project because of resource constraints.

[13] For example, a single PUMA may include five counties, three of which fall in one IM Consortium or Urban Zone and two of which fall in another IM Consortium or Urban Zone. We use county-level population data to determine what share of the households with children in the PUMA as a whole are located in each of the two consortia/zones.

[14] We use the SAS RAND function to generate a uniformly distributed random number for each household that contains at least one child age 18 or younger. We compare the random numbers with the likelihood that a household in a particular PUMA was in a particular consortium/zone. For example, if a PUMA includes two zones, and 30 percent of the households with children are in the first zone, we assume households with a random number less than 0.3 are in that zone.

[15] In initial data preparation, ATTIS reclassifies some survey-reported SSI income to be Social Security if the dollar amounts are above the maximum possible amounts paid by SSI. After that adjustment, there are 73,100 SSI recipients in the data, compared with 97,000 average monthly adult SSI recipients in Wisconsin in 2018. A portion of the 73,100 reporters do not appear in ATTIS to be eligible for SSI, and they are not included in the simulated caseload.

[16] We use the published federal fiscal year 2018 caseload figures available from "Child Care and Development Fund Statistics," Office of Child Care, last reviewed December 11, 2019, https://www.acf.hhs.gov/occ/resource/ccdf-statistics. We adjust the caseload figures to bring in the additional children states report serving through their CCDF-administered programs, using the CCDF administrative (801) data, from "Child Care and Development Fund Administrative Data, [United States], Federal Fiscal Year 2016 (ICPSR 37264)," Child and Family Data Archive, version date August 7, 2019, https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/37264. (The federal fiscal year 2016 801 data were the most recent available at the time of the analysis.)

[17] We use the following design factors for the state-level estimates: (1) age of youngest child: employment, work status; household, family, or non-family income; (2) monthly poverty status: poverty status (person); poverty status (family); (3) monthly income: ratio of income to poverty level; (4) TANF receipt: type of household income; (5) work status: work experience, hours worked per week; (6) children by race/ethnicity: employment, work status; (7) number of parents/guardians: marital status; (8) presence of earnings: household, family or non-family income. We use the following design factors for the substate estimates: employment, work status; household, family, or non-family Income.

[18] To obtain the lower and upper bounds of the 95 percent confidence interval, we multiply the corresponding standard error by 1.96 to obtain the margin of error. We subtract the margin of error from the estimate to calculate the lower bound of the 95 percent confidence interval and add the margin of error to the estimate to calculate the upper bound.

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