

State Snapshots of Potential Demand for and Planned Policies to Support Nontraditional-Hour Child Care

TECHNICAL APPENDIX

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July 2021

This appendix documents the technical steps we took to create the State Snapshots of Potential Demand for and Planned Policies to Support Nontraditional-Hour Child Care.

Data Sources

The data used in our analysis come from three sources: (1) the American Community Survey (ACS); (2) the Survey of Income and Program Participation (SIPP); and (3) each state’s Child Care Development Fund (CCDF) plans for 2019–21.

ACS and SIPP Data

We analyzed ACS and SIPP data to determine potential demand for nontraditional-hour (NTH) child care. We estimated the shares of children younger than age 6 with particular individual and family characteristics that were likely to need child care during nontraditional hours (NTH) out of those with all parents working. These analyses built on earlier work and methods developed by the authors and their colleagues analyzing potential demand for NTH child care in DC and selected states (Adams et al. 2021a–c; Sandstrom et al. 2019).

The data on children whose parents work or commute during NTH and who might need care during these hours and their personal, family, and household characteristics are drawn from the Census Bureau’s 2015–19 ACS and 2016 SIPP. We define NTH as parents working or commuting at any point between 6:00 p.m. and 6:59 a.m. during the week or anytime on weekends. Because our goal is to identify the potential need for child care, we only consider children whose parents all work and were all predicted to work or commute during NTH as children with NTH-working parents. For children living with two parents, we only count the children in two-parent families as children with NTH-working parents if both parents worked and were working or commuting either during the same weekday hour or anytime during the weekend. Similarly, for children living with two parents, only those with both parents working were counted as children with working parents.

CCDF Plan Data

To identify actions states had planned related to NTH child care, we accessed each state’s and the District of Columbia’s 2019–21 CCDF plans. We reviewed each plan, focusing on specific sections with

questions about NTH care. We focused on the following sections in each plan that asked about NTH care: (1) child care services available through grants and contracts to increase the supply and/or quality of specific types of care to serve children needing NTH care; (2) limits on the use of in-home care that are restricted based on NTH schedules; (3) establishment of tiered reimbursement rates, differential rates, or add-ons on top of their base rates to increase payment rates for NTH; and (4) description of method(s) used to increase supply and improve quality for children who receive care during NTH. These plans indicate actions the states intended to address NTH-working parents' needs and do not reflect whether or how the policies were actually implemented. Plans are being updated in 2021.

Methodology

Using the ACS, we estimated the shares of young children with particular individual and family characteristics who had all parent(s) working or commuting during NTH out of young children with similar characteristics whose parents(s) all worked. We supplemented the ACS data with SIPP data to better estimate the potential need for weekend care.

Defining the Population Potentially Needing NTH Care

ACS data for the District of Columbia were available at the individual level for 2019 and for even more observations in the five-year sample covering 2015–19. The ACS public use microdata sample from the University of Minnesota's Integrated Public Use Microdata Series USA project includes information on parent-child relationships, industry of employment, typical times of departure for and arrival at work, typical travel time to work, and usual number of hours worked each week.¹ Building on the methodology developed in prior analyses of potential demand for NTH child care by the authors and their colleagues (Adams et al. 2021a–c; Sandstrom et al. 2019, 2018; Henly and Adams 2018), information in these fields was used to infer whether the child reflected in each record was a child in the age range of interest, had parent(s) who worked, and if his or her parent(s) likely worked during NTH.

Specifically, we focused on children younger than age 6 in DC, each state, and nationally, with all parents living in the household working at least part time at survey time. We substituted the household head when no parents were present and excluded children living in group quarters without a household head. We then estimated whether these children's parent(s) worked or commuted during NTH by setting the start time for when the child potentially required care to the value of the "time of departure

for work” variable. The end time for when care was potentially needed was calculated by taking the value of the “time of arrival at work” variable and adding the values of the “usual hours worked each week” variable divided by five, assuming work hours were spread over a five-day work week, and “travel time to work,” assuming commute time to home was the same as to work, to determine the typical time the parent(s) arrived at home after work each day. For example, if a parent typically arrives at work at 9:00 a.m. and works 40 hours a week, we assume the parent works 8 hours a day and departs work at 5:00 p.m.

Estimating Potential Need for Weekend Care

We estimated the number of children whose parents work on weekends by incorporating additional analysis of the 2016 SIPP, as the ACS does not contain information on day of work. The SIPP data provided an independent estimate of the share of employed parents (with children younger than 18 living in the home) who worked outside the home on the weekend at any job during 2016. Whether children had parents working during the weekend or NTH during weekdays drawn from these two different sources were independent and not mutually exclusive. Children could have parents working NTH during weekdays, working during weekends, both, or neither.

Using the SIPP, we estimated the share of parents in the US who listed themselves as working on either Saturday or Sunday (and were not working from home those days) for any job they held during the year using 2016 SIPP data. The overall share of adult workers who worked on the weekend was roughly in line with aggregate 2016 information from the 2016 American Time Use Survey,² which served as a benchmark for our calculations. We limited the sample for our SIPP calculations to adults ages 16 and older to match the population that has employment data in the ACS. Individuals also had to be employed and in the survey for all 12 months of the year to be included in our calculations.

We predicted the probability that working parents of young children with various characteristics in the ACS data were working during the weekend at any of their jobs based on estimates of how likely it was for employed adults to be working during the weekend in the SIPP data based on their characteristics. Specifically, using a multivariate, linear regression model, we estimated the likelihood of working during the weekend for employed adults in the SIPP based on their state of residence, age group, race/ethnicity, sex, education level, ratio of family income to poverty threshold, marital status, number of children, number of children younger than age 6, age of their youngest child in the household, age of their oldest child in the household, worker class (self-employed, public, private, or nonprofit), hours typically worked in a week, industry of employment, occupation of employment, job start time,

and commute time. We then used those estimates and the regression model to predict the likelihood that working parents of young children worked during the weekend using these same characteristics, which were all available in the ACS.

Finally, we created two copies of each child and reweighted one copy by the percent chance that their parents were working on the weekend, and we multiplied the other copy by the percent chance that their parents were not working on the weekend. For example, if the original child observation had a weight of 100 (meaning the 1 observation in the sample represents 100 actual children in the population) and had parent(s) with a 30 percent chance of all working on the weekend, the child was counted twice—once as a child with parents working on the weekend and a new weight of 30, and a second time as a child with parents who were not working on the weekend with a new weight of 70. Therefore, our final estimate, if based only on this one observation, would be that out of the total 100 children in our population, an estimated 30 children had parents working on weekends and 70 did not.

Analysis of Data from Each State’s CCDF Plan

We created a spreadsheet that listed each question in the 2019–21 CCDF plan that asked specifically about NTH care. We dummy coded each variable with 0 = No or NA and 1 = Yes for each possible action associated with NTH care. We copied text from each state’s plan that described specific actions the state had planned related to NTH care. In table 1 of the snapshots, we include the following variable categories in the open-ended descriptions of state actions: accreditation supports, child care health consultation, family child care networks, grants and contracts, mental health consultation, recruitment of providers, start-up funding, support for improving business practices, technical assistance, and tiered reimbursement rates.

R Markdown

R Markdown is a format for writing reproducible and dynamic reports using R, resulting in html documents or other file types. We used R Markdown to produce iterated fact sheets for all states and DC, embedding R code within the R Markdown structure to create the graphics for each fact sheet.

Expert Review

Before finalizing the analysis and reporting, we engaged two technical experts to review our approach and also obtained input from the Office of Planning, Research, and Evaluation (OPRE).

The two experts were Dr. Jim Lesko and Ms. Terrie Hare. They reviewed the template and provided input about the types of data they thought would be useful to state child care administrators and technical assistance professionals. Dr. Lesko is currently a consultant in early learning systems, with long-term experience directing federal and state initiatives to improve early childhood programs. Lesko has been director for the Preschool Development Grant Birth–Five Technical Assistance (PDG B–5 TA) project and director for the Office of Early Learning with the Delaware Department of Education, and has provided training and technical assistance on inclusive education practices for children with disabilities in Eastern Europe and the Middle East. Hare has state child care expertise, which she has applied to the role of child care state systems specialist at ICF International based in Fairfax, Virginia. Hare served as child care state administrator, and previously Head Start state collaboration director, for the State of Ohio. Each provided input on the framing of the data presented in the state snapshots.

OPRE provided feedback that informed the level of detail in the snapshots and this technical appendix. In addition, OPRE’s review informed how we framed the analysis of information obtained from our review of the CCDF state plans.

Notes

- ¹ Steven Ruggles, Sarah Flood, Sophia Foster, Ronald Goeken, Jose Pacas, Megan Schouweiler, and Matthew Sobek, *IPUMS USA: Version 11.0* [dataset], IPUMS, 2021, <https://doi.org/10.18128/D010.V11.0>.
- ² “American Time Use Survey – 2016 RESULTS” (News release), Bureau of Labor Statistics, June 27, 2017, https://www.bls.gov/news.release/archives/atus_06272017.pdf.

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Acknowledgments

This work was supported by the Administration for Children and Families (ACF) of the United States (US) Department of Health and Human Services (HHS) as part of a financial assistance award (Grant Number 90YE0241) totaling \$105,000 with 100 percent funded by ACF/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, ACF/HHS or the US Government. For more information, please visit the ACF website. We thank them for their support but acknowledge that the findings and conclusions presented in this appendix are those of the authors alone and do not necessarily reflect the opinions of the funder or the Urban Institute.

The authors would also like to thank their Urban Institute colleagues Heather Sandstrom, Erica Greenberg, and Aaron Williams for their review and guidance and Liza Hagerman and Jerry Ta for editorial and website support, as well as Jenessa Malin and Bonnie Mackintosh at ACF/HHS, Jim Lesko, an early learning system consultant, and Terrie Hare, a child care state systems specialist at ICF International, for their review, feedback, and expert advice on the topic. Further information on the Urban Institute's funding principles is available at urban.org/funding-principles.



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