10 Methodology

States and Territories: This report includes information about Head Start and Early Head Start programs in the 50 states, the District of Columbia[19], and six U.S. territories (American Samoa, the Commonwealth of the Mariana Islands, Guam, Palau, Puerto Rico, and the Virgin Islands), as well as American Indian and Alaska Native (AIAN) Head Start and Early Head Start and Migrant and Seasonal Head Start (MSHS) programs. Head Start programs are in all 50 states, D.C., and all six territories. However, American Samoa, Guam, and Palau do not have an Early Head Start Program. AIAN Head Start programs operated in 26 states (AK, AZ, CA, CO, ID, KS, ME, MI, MN, MS, MT, NE, NV, NM, NY, NC, ND, OK, OR, SC, SD, TX, UT, WA, WI, WY) and AIAN Early Head Start programs operated in 20 states (AK, AZ, CA, ID, KS, MI, MN, MS, MT, NE, NM, NC, ND, OK, OR, SC, SD, WA, WI, WY) in the most recent 2020-2021 program year. Although AIAN programs may operate across multiple states, in the current report, AIAN data is included with the data for the state in which the grantee is based. Many MSHS programs also operate across multiple states, making it difficult to ascertain the precise number of children enrolled in MSHS in each state. Therefore, this report only presents data on MSHS at the national level. However, state maps do include the location of where MSHS centers are headquartered.

Head Start Programs: This report includes information on five types of Head Start programs:

1. Head Start: Enrolls children 3 to 5 years old during the two years before kindergarten
2. Early Head Start: Enrolls children birth through age three, and pregnant women
3. American Indian and Alaska Native Head Start: Enrolls 3- to 5-year-old children through grants to federally recognized American Indian and Alaska Native tribes
4. American Indian and Alaska Native Early Head Start: Enrolls children birth to age three and pregnant women through grants to federally recognized American Indian and Alaska Native tribes
5. Migrant and Seasonal Head Start: Enrolls children of migrant and seasonal workers, birth through age five, and pregnant women

Throughout this report Head Start and Head Start AIAN data are combined and reported together on the state profiles pages and in other figures, tables, and maps. The same holds true for Early Head Start and Early Head Start AIAN. National AIAN data are also reported separately on the AIAN profile pages. MSHS data are presented on the MSHS profile pages and are not included in the state-by-state information, with the exception of the state maps. U.S. totals include 50 states, all territories, AIAN programs, and MSHS programs where possible. Since MSHS data encompasses the full age range it is not reported in Head Start or Early Head Start specific totals or averages.

Data Sources

Program Information Report: A main source of data for this report is the Office of Head Start Program Information Report (PIR). Each year, all federally-funded Head Start grantees and delegates are required to complete the PIR questionnaire. The annual survey collects data on Head Start children and families, program staff, and services provided and received. The report focuses on the PIR covering the 2020-2021 program year. Due to the Covid-19 pandemic the PIR was not required to be completed during the 2019-2020 program year. To estimate impacts of the Covid-19 pandemic, the 2018-2019 PIR data were used. PIR data dating back to 2011-2012 are also included in the report to illustrate changes over the last decade. The number of children enrolled during the 2021-2022 program year comes from the 2021-2022 PIR that was released as this report was being finalized. All PIR data were downloaded from the Head Start Enterprise System.

Office of Head Start: The Office of Head Start (OHS) in the Administration for Children and Families provided NIEER with additional data for this report. For each year, they provided the number of funded Head Start and Early Head Start slots and funding for each state and territory, as well as U.S. totals. They also

provided AIAN enrollment slots and funding by state beginning in 2013-2014, as well as total AIAN funded enrollment and funding. They provided total MSHS funded slots and funding.

OHS also provided average scores in each state, Puerto Rico, other territories together, nationally, for AIAN, and for MSHS on the Classroom Assessment Scoring System (CLASS) Pre-K. CLASS Pre-K scores are from Head Start's on-site review of grantees as part of the grant renewal process. Within each state, CLASS Pre-K scores were averaged across all grantees who received a CLASS observation between 2016 and 2019. Not all grantees are represented in these scores. Means, standard deviations, and the number of observations in each state were provided for the three CLASS domains: Emotional Support, Classroom Organization, and Instructional Support.

Head Start Centers: The Head Start Center Locator provided by the Early Childhood Learning & Knowledge Center (ECLKS) was used to get a list of all Head Start centers in each state and territory, including the geographic location/address of each center. All centers are identified as either Head Start, Early Head Start, Migrant and Seasonal Head Start, American Indian and Alaska Native, or combined Head Start and Early Head Start.

State of Preschool: Data on state supplemental funding to Head Start and Early Head Start came from NIEER's 2021 State of Preschool survey. The survey was completed by state preschool administrators in each state.

Census: U.S. Census data were used to determine the number of children by single year of age in each state and nationally, for each year included in this report. All estimates used are based on the 2010 Census. The same Census data were used to determine the number of children by race and by ethnicity who were under 1, 1-, 2-, 3-, or 4-years-old.

The Current Population Survey (CPS), Annual Social and Economic Supplement (March) was used to estimate the number of children living in poverty (below 100% of the federal poverty level) in each state. The CPS data was extracted using the Integrated Public Use Microdata Series (IPUMS)[20] and was used to estimate the percentage of all children under 5 years living in poverty, as well as the percentage of children under 5 living in poverty by race and by ethnicity, in each state and nationally. To estimate the number of children in poverty, those percentages were multiplied by the number of children in each state (and repeated for each racial and ethnic group). In some states, the number of children in poverty in a specific racial or ethnic group is too small to reliably estimate the number of children in poverty; in these cases, those numbers are not reported or included in the report.

The international consensus was used to determine the number of children by single year of age in each U.S. territory included in this report. Information on children's race and ethnicity and family income was not readily

available for the territories. Information on children's ethnicity in Puerto Rico was estimated from the Puerto Rico Quick Facts based on the April 2020 Census data. Data on ethnicity are for individuals of all ages. Data on child poverty in Puerto Rico was obtained from the American Community Survey, 5-year estimates from 2020 through 2015 (the earliest year for which a 5-year estimate was available). Child poverty data was for children under five years old. No other poverty data or race and ethnicity data were readily available for the territories that was comparable to the 50-state data.

The 2019 American Community Survey 5-year estimates were used to identify the percentage of families with a child under 5 years old living below the federal poverty level in each county. We divided counties into four quartiles based on this percentage. The lowest poverty quartile includes counties with less than 10.3% of families with children under 5 in poverty; the second quartile has between 10.3% and 17.1% (median), the third quartile has between 17.1% and 26.2%, and the highest poverty quartile includes counties with more than 26.2% of families with children under 5 living in poverty.

Public School Teacher Salary: The National Education Association *Rankings of the States 2020 and Estimates of School Statistics 2021* was used to determine the average salary of elementary school teachers in public schools in 2020-2021. This data was not available for the territories.

State Median Income: Data on the state median income for a one earner household came from the Census Bureau Median Income data.

Cost Adjustments: The Bureau of Economic Analysis (BEA) Implicit Regional Price Deflators were used to adjust funding in each state each year to account for cost of education differences across states (cost of living) *and* to adjust funding amounts between 2012 to 2020 for inflation to 2021 dollars. The BEA's Implicit Price Deflators for Gross Domestic Product were used to adjust national funding for inflation, as well as for U.S. territories, AIAN, and MSHS.

Calculations of State and National Data

Both *funded enrollment* and *cumulative enrollment* are presented in this report. *Funded enrollment* refers to the number of slots that each program is funded to provide. In other words, this is the number of children who could enroll at any one time. *Cumulative enrollment* refers to the total number of children and pregnant women who enrolled in Head Start or Early Head Start at some time during the program year. Cumulative enrollment typically exceeds funded enrollment as children enroll, leave, and are replaced by new enrollees during the year. In 2020-2021, due to the Covid-19 pandemic, Head Start funded enrollment was higher than Head Start cumulative enrollment nationally, and in most states because many programs enrolled less than the full number they were funded to serve.

The percentage of children living in poverty enrolled in Head Start and Early Head Start is calculated based on cumulative enrollment. First, we estimated the number of children enrolled who were living in poverty based on their primary eligibility for the programs. Children in families below 100% of the federal poverty level, children in families receiving public assistance, and homeless children were considered in this report to be living in poverty. The cumulative enrollment of children in poverty was divided by the number of children living in poverty in the state.

The PIR data includes the number of children, families, and teachers in each program who have various characteristics and qualifications and/or who received specific Head Start services. For the purposes of this report, the number of children or teachers were summed across all programs in a state to calculate the total for each state. Next, the percentage of children or teachers in each state meeting each criterion was calculated by dividing by the total number of children or teachers. AIAN Head Start and Early Head Start programs were included in each state's calculations. MSHS are not included in each state because MSHS programs often cross state lines. MSHS numbers are included in national totals that include both Head Start and Early Head Start since MSHS data encompass all ages of children.

Funding per child in each state was calculated by dividing the federal funding for that state by the federally-funded enrollment. Funding per child from 2011-2012 through 2019-2020 was adjusted for inflation. All funding numbers presented are in 2021 dollars and are adjusted for differences in cost of living in each state. (See the Appendix Tables 1b and 4b for funding data that has not been adjusted for cost of living.)

Research-based thresholds for each of the three CLASS Pre-K domains were determined by NIEER in consultation with the authors of the instrument and based on research findings regarding the level of quality in each domain needed to support learning and positive developmental outcomes. Average CLASS scores from evaluations of publicly-funded preschool programs and Head Start FACES was also considered in determining thresholds. For this report, the research-based thresholds are: Emotional Support: 5.5, Classroom Organization: 5.5, and Instructional Support: 3.

One sample t-tests were conducted in Stata version 17 to determine, in each state and nationally, if average scores on each CLASS score domain were (1) statistically significantly lower than the research-based threshold, (2) statistically significantly lower than the research-based threshold, or (3) statistically significantly indistinguishable from the research-based threshold. States were determined to have CLASS scores significantly higher or lower than the research-based threshold if $p<.05$.

Tests of proportions using Stata version 17 were also used to test in each state for

statistically significant differences in the percentage of children in poverty served by Head Start and Early Head Start by child race and by child ethnicity. Groups of children were determined to be differentially enrolled in Head Start if $p<.05$.

Maps

Maps showing the location of all Head Start centers in the state and county-level poverty were produced using Tableau, a visual analytics platform. Using Tableau, we overlaid maps of the location of Head Start centers with the county-level poverty data. The resulting state maps show where in the state Head Start programs (of different types) are located in relation to county-level poverty rates.

Determination of Additional Head Start Funding Needed to Improve Equity

We calculated the average percentage of children in poverty enrolled in Head Start and Early Head Start in 2018-2019 in the five states with the highest percentage of children served. We then calculated how many children and how many additional children each state would have to enroll 74% of all 3- and 4-year-olds in poverty in Head Start and 22% of all children under 3 in poverty in Early Head Start. We multiplied these numbers by the current Head Start and Early Head Start funding per child amounts to estimate the total and additional funding needed. Additional funding to increase teacher salaries was also included in this calculation.