

Understanding the Child Care and Early Education Workforce: The Need for More and Better Data



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High-quality, stable child care and early education (CCEE) can have lasting, positive impacts on children.¹ However, the challenges of recruiting, strengthening, and retaining the CCEE workforce are well documented.² CCEE educators typically have low levels of formal education and compensation; limited opportunities for education, training, and professional development; inconsistent working conditions; and high levels of stress and burnout.³ Additionally, the CCEE sector is well known for high turnover rates,⁴ which can strain remaining educators and decrease the quality of care they offer.⁵ Turnover can also lead to diminishing returns on an organization’s professional development investments. The COVID-19 pandemic has exacerbated these issues.⁶

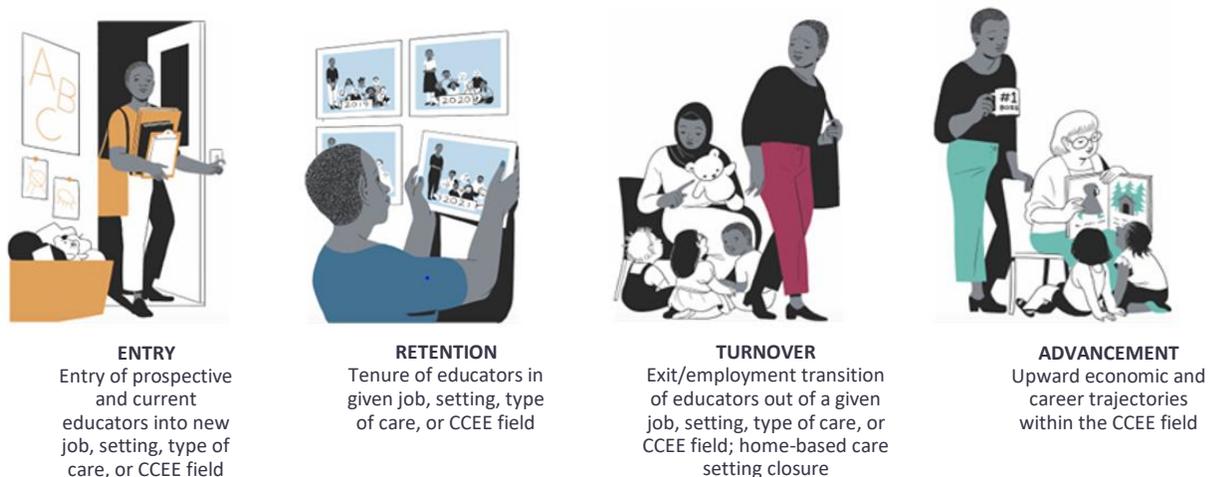
The Building and Sustaining the Child Care and Early Education Workforce (BASE) project conducted an environmental scan and a literature review to identify and document existing knowledge about the CCEE workforce and strategies to strengthen it. One of the main themes identified from this effort was a need for more and better data on the workforce dynamics of CCEE educators. In particular, data are needed on who enters, advances in, stays in, and exits different roles, settings, and types of CCEE care or leaves the field altogether—as well as when, how, and why they do. (See Figure 1 for a visual representation of CCEE workforce dynamics.) This information is important for understanding workforce

The Building and Sustaining the Child Care and Early Education Workforce (BASE) project aims to increase knowledge and understanding in child care and early education (CCEE) by documenting factors that drive workforce turnover and by building evidence on current initiatives to recruit, advance, and retain a stable and qualified CCEE workforce.

dynamics and informing the development, evaluation, and improvement of strategies that effectively build and sustain a qualified and stable CCEE workforce. For this reason, the BASE project team conducted a data scan to summarize the landscape of existing data sources that may address these gaps and identify areas where future data collection may be most useful. (See Box 1 for definitions of key terms used in the BASE project.) This brief summarizes the findings from the data scan.

Figure 1.

Child Care and Early Education Workforce Dynamics



Key Findings

- The current landscape of available data sources that can describe CCEE workforce dynamics varies widely in terms of the frequency and depth of data captured as well as the types of identifiers and level of geography recorded, which makes bringing data sources together to answer research questions difficult.
- Two key gaps identified are data sources with the ability to track educators' movement, whether across states, industries, or roles, and data sources that capture longitudinal data, or data on the same educators over time. Each of these types of data is vital to answer research questions related to workforce dynamics.
- Despite the potential difficulties associated with it and the complexity of the process, data linkage is likely one of the most promising methods to achieve a dataset that is comprehensive enough to answer research questions related to workforce dynamics. State integrated data sources are an example of the usefulness of such linkages but a limited number of such data sources exist currently.

- Some populations are particularly underrepresented in the data landscape, partially due to difficulties associated with collecting data on them. In particular, there is much less data on home-based child care settings and providers compared with center-based child care settings and educators.

Box 1. Terms Used in This Brief

While terminology varies in the field, in this brief key terms are defined in the following ways:

CHILD CARE AND EARLY EDUCATION (CCEE) refers to programs and the workforce educating and caring for children from birth to 13 years of age. This includes educators in centers and in home-based settings caring for infants, toddlers, and preschool- and school-aged children. CCEE refers to a larger age group than Early Care and Education (ECE), which consists of services for young children only (e.g., Head Start/Early Head Start, public pre-K, and centers serving children from birth to age 5). ECE programs are included in the definition of CCEE.

CCEE EDUCATORS and CCEE WORKFORCE refer to current and prospective educators who are paid to care for children from birth to 13 years of age in center- and home-based settings. This includes educators in different positions and roles. For example, center administrators, directors, lead and assistant teachers, and home-based educators are included in this definition. This definition also includes both licensed and license-exempt center- and home-based settings. While the CCEE workforce also includes support staff in centers, like coaches, education coordinators, and behavioral specialists, these individuals are not the primary focus of this brief.

CCEE SETTING refers to the physical location (for example, a center, school, or home) where children receive care. Settings can include Head Start child care centers; community-based child care centers; licensed and license-exempt home-based child care settings that receive subsidies; and the home or location of relatives, neighbors, or other individuals who are paid to care for children.

CCEE TYPE OF CARE refers to how caregiving is distinguished by different funding streams and federal, state, and local policies, regulations, and oversight. The BASE project primarily focuses on center-based or home-based care. But the research team also makes further distinctions within those two types, such as Head Start or Early Head Start programs, community-based child care settings, home-based child care settings, and publicly funded pre-K.

STRATEGY refers to an intervention, initiative, or policy designed to build, advance, or sustain the CCEE workforce. It can include a single **APPROACH**—for example, offering a scholarship—or an assortment of approaches, such as offering both a scholarship and coaching.

WORKFORCE DYNAMICS encompass entry into and exit out of the CCEE field as either a self-employed business owner or an employed individual. For those in the field, it includes tenure and advancement, as well as entry into and exit from different roles, settings, and types of care. Workforce dynamics include multiple phases of employment: entry, retention, turnover, and advancement.

Guiding Questions

Several overarching research questions that drive the BASE project also guided the data scan:

- What conditions and practices drive CCEE workforce turnover? How do they differ by ages of children served, worker characteristics and roles, program context, and community and state context?
- What program- or system-level policies, activities, and characteristics support the recruitment and retention of the workforce within Head Start and subsidized child care programs?ⁱ
- What program- or system-level policies, activities, and characteristics support the recruitment and retention of the CCEE workforce?

In addition, the data scan sought data sources that contextualize CCEE workforce dynamics or provide supplemental information about educators' characteristics and their work settings. The data scan was also informed by the research gaps identified by the BASE project's literature review and environmental scan:

1. The need for longitudinal data to track CCEE educators over time, as they enter and exit CCEE jobs and the CCEE field more broadly, and to track their advancement over time.
2. The need to examine how CCEE workforce dynamics vary by role (e.g., assistant teacher versus lead teacher), age of the children served (e.g., infants or toddlers versus preschool-age children), and setting (e.g., home-based, center-based, or school-based child care).
3. The need to assess the effects of multilevel factors on workforce dynamics, including factors at the teacher level (e.g., age, experience, race, or ethnicity), provider level (e.g., type of setting, working conditions), policy level (e.g., subsidy rates, credential requirements), and community level (e.g., unemployment rates, earnings in other sectors).
4. The need for research with a diversity, equity, and inclusion lens and that examines the effects of systemic bias and the experiences of marginalized groups.
5. The need for more information about the psychological well-being of the CCEE workforce and the factors that affect it.
6. The need for rigorous evidence on the effects of existing strategies—such as offering wage supplements or scholarships—on workforce dynamics.
7. The need for information about the uptake of existing strategies, their reach within the CCEE workforce, and their effectiveness.

ⁱ Head Start programs provide services that support early learning and development, health, and family well-being. For more information, see Office of Head Start, "Head Start Services." Website: <https://www.acf.hhs.gov/ohs/about/head-start>

The data scan was focused primarily on the first three items above, although the ability of the data to speak to each of these issues is discussed when possible.

In sum, the goal of the data scan was to identify data that could help to develop a deeper understanding of CCEE workforce dynamics to contribute to existing research, inform practitioners, and enable policymakers to devise more effective strategies to support and strengthen the CCEE workforce.

Methods

The data scan was primarily conducted in the summer and fall of 2021, with some additional sources added or amended in early 2022. The BASE project team initially identified 126 potential data sources using existing content knowledge from the literature review and environmental scan and through recommendations from internal and external experts and federal sponsors. As shown in Table 1, these data sources are grouped in the following broad categories: national surveys, state and local surveys, state workforce registries, state unemployment insurance (UI) wage records, Quality Rating and Improvement System (QRIS) data, program data, policy databases, and integrated (or linked) data sources.

Second, the team created a data catalog to document basic information about each identified data source, including how to access the source and its documentation; its coverage; its unit of analysis; and any key words relevant to CCEE, such as “setting,” “workforce characteristics,” “funding sources,” “workforce dynamics,” “working conditions,” and “worker well-being.” These key words were not a part of the inclusion criteria for the primary assessment (discussed below); they are intended to function primarily as a resource for future projects focusing on the CCEE workforce that may use the catalogue as a guide for identifying data sources for slightly different research questions. See Appendix A for detailed information about the data sources.

Third, a subset of the identified data sources was selected for a primary, in-depth assessment. Specifically, data sources were included if they met the following inclusion criteria:

- The primary unit of analysis was educators, and CCEE educators could be either identified or approximated within the data; *or*
- The primary unit of analysis was children, classrooms, or programs, but individual-level data on educators could potentially be derived (e.g., if the data included educator identifiers for each classroom);ⁱⁱ *and*
- The data contained observations collected within the last 12 years (2010–2021).ⁱⁱⁱ

ⁱⁱ Examples of educator identifiers include name, date of birth, or place of employment.

ⁱⁱⁱ A 12-year time frame was selected to focus on datasets containing recent data while allowing for the fact that there can be significant time lags before data are available for analysis.

For the primary assessment, the team analyzed these data sources based on the following questions:

1. What is the capacity of the data to measure CCEE workforce dynamics, including metrics such as turnover, recruitment, and retention?
2. What is the population coverage (including when and where data were compiled and which programs were included) for each data source?
3. What contextual factors—such as the characteristics of educators, programs, and communities—are captured in each data source?
4. Is it possible to link data to other data sources at individual, program, or community levels in order to augment available contextual information?
5. How accessible are the data for research purposes?

Finally, the team conducted a secondary assessment of data from a subset of catalogued data sources that could provide contextual information even though these sources did not meet the criteria for inclusion (because they did not support analyses of individual-level outcomes). This assessment focused solely on what contextual variables the datasets from each source contained and how they could be linked to other data. Through this assessment, the team found these sources could be linked to the data sources from the primary assessment at the provider, program or system, or community level and thus provide additional contextual information.

Table 1. Data Sources Identified in the BASE Data Scan

Type of Data Source	Number Identified	Number Assessed	Data Sources Included
National surveys	18	13	<ul style="list-style-type: none"> • American Indian and Alaska Native Head Start Family and Child Experiences Survey (AIAN FACES) • Current Population Survey • Early Head Start–Child Care Partnership (EHS-CCP), United States, 2016: Partnership Grantee and Delegate Agency Director Survey, Child Care Partner Survey • Early Head Start Family and Child Experiences Survey (Baby FACES): home visitor, center director, program director, educator and classroom, child and parent data • Head Start Family and Child Experiences Survey (FACES): parent, center/program, child, and educator and classroom data • National Survey of Early Care and Education (NSECE): Center-Based Provider Questionnaire, Home-Based Provider Questionnaire, Classroom Staff (Workforce) Questionnaire, 2019 COVID-19 Follow-Up Study
State and local surveys	5	5	<ul style="list-style-type: none"> • Colorado Early Childhood Workforce Survey • Child Care Provider Survey • North Carolina Child Care WAGE\$ Program • South Carolina 2018 Early Childhood Education Workforce Survey • Virginia’s Preschool Development Grant Birth Through Five (PDG B-5) Workforce Survey
State workforce registries	41	4	<ul style="list-style-type: none"> • Registries from 39 states, an additional survey from Oregon, and the National Workforce Registry Alliance Dataset. All datasets identify individual CCEE workers. A subset was assessed based on the research team’s ability to access documentation and data, including the National Workforce Registry Alliance Dataset.

Type of Data Source	Number Identified	Number Assessed	Data Sources Included
Unemployment insurance wage data	51	3	<ul style="list-style-type: none"> Unemployment insurance (UI) wage data collected in all states and the District of Columbia. Datasets identify individual CCEE workers. A subset was assessed based on the research team’s ability to access documentation and data.
Quality Rating and Improvement System (QRIS) data	2	1	<ul style="list-style-type: none"> ExceleRate Illinois and Louisiana QRIS. Of the two, only the Louisiana QRIS allows for identification of workers.
Program data	2	0	<ul style="list-style-type: none"> Child Care and Development Fund (CCDF) ACF-801 and Head Start Program Information Report. These data do not allow for identification of CCEE workers.
Policy databases	2	0	<ul style="list-style-type: none"> CCDF Policies Database and National Database of Child Care Licensing Regulations. These datasets do not allow for identification of CCEE workers.
Integrated (linked) data sources	4	4	<ul style="list-style-type: none"> Kentucky Longitudinal Data System (KYStats) Linked Information Network of Colorado (LINC) Early Care and Education Workforce project Longitudinal Employer-Household Dynamics (LEHD) dataset Ohio Longitudinal Data Archive

Summary of Findings

The following sections—organized by type of data source—present the main findings from the primary assessment of data sources that met the inclusion criteria and the assessment of contextual data sources. The strengths and limitations of the data sources are discussed, as well as whether the data sources can be linked with other data.

National Surveys

A total of 13 national surveys include information that allows for the identification of CCEE educators and therefore support analysis of the experiences of individual educators. Examples of these sources include the National Survey of Early Care and Education (NSECE), the Head Start Family and Child Experiences Survey (FACES), and the Early Head Start Family and Child Experiences Survey (Baby FACES). The full list is enumerated in Appendix Table A.1.

Strengths: The national surveys that the project team reviewed tend to contain rich information about educators, including their roles, demographics, educational attainment or credentials, and sometimes compensation. They include national samples. Some surveys were targeted to specific programs and populations, including Head Start and home-based child care providers. They provide information that could help address questions about the association between educator characteristics and employment outcomes, such as, “Do educators with higher levels of education stay in the CCEE field longer than those with lower levels of education?” or “Among Head Start educators, does compensation vary based on race or ethnicity?” (See Box 2 for an example of how the NSECE has been used to answer workforce-related research questions.)

National surveys are repeated and allow for researchers to analyze trends over time within the CCEE field and thus to answer questions such as, “Is the average tenure in the CCEE field or within a single employer changing over time? Have rates of degree or certificate attainment increased over time among educators in different roles or contexts? What about for different demographic subgroups?”

Limitations: Survey data do not capture workforce dynamics (such as entry into or exit out of a position), as they are generally available at a single point in time and do not contain longitudinal data. Sample size is also an issue with these data sources when analyses are concentrated on specific subpopulations. For example, selecting subsamples of employees funded through Head Start or child care subsidies would significantly reduce the data available for estimation. In addition, in surveys that are not tied to specific programs, such as Head Start, it is challenging if not impossible to examine experiences of educators supported by specific public programs due to widespread braiding of funds at the employer level. Finally, data on tenure come from self-reports (or employer reports) rather than administrative records and may be subject to errors in recall.

Capacity to Link to Other Data: Most national survey data are designed to characterize programs or geographies and can be easily linked to other datasets at this level to provide additional contextual information (e.g., linking national survey data with community characteristics from census data). However, these linked data would still have only a limited ability to describe workforce dynamics since national surveys do not provide longitudinal information on an educator’s entry into or exit from a position or the CCEE field.

Linking data at the individual level is challenging. First, access to the personal identifiers needed to link these surveys is highly restricted, and it would be time-intensive to navigate the required permissions and processes. In addition, none of the surveys that were included in the data scan obtained consent from educators to link their data to administrative data sources. If such consent were obtained, survey data would be better suited to addressing research gaps.

Additionally, most of the datasets that could be linked with national survey data and that provide more robust information on workforce dynamics are captured at the state level. Researchers would need to go through multiple state jurisdictions of permissions and data management to get enough data to create a sample large enough to allow for reliable analyses. One possibility, as is sometimes done with the Current Population Survey, is to combine data from multiple years of the survey in order to obtain sufficient sample sizes at the state or local level.⁷

Box 2. Example of National Survey

Assessing Educators' Psychological Well-Being Using the NSECE

The 2012 National Survey of Early Care and Education (NSECE) is a set of four integrated, nationally representative surveys that describe the CCEE landscape in the United States. One study used two of the surveys—the center-based provider survey and the center-based workforce survey—to assess levels of educators' psychological distress and the association of psychological distress with several workplace factors.* The study found that about 8 percent of educators experienced moderate to severe psychological distress (using a validated scale), a rate that was somewhat lower than the rate for the adult female population. Educators with lower household incomes had higher levels of psychological distress. Educators had less psychological distress when they experienced teamwork, respect, and stability at work. Other workforce supports, which were hypothesized to be important for CCEE educators' well-being, were not significantly associated with educators' distress. Given that stress and burnout are associated with retention in the field and the quality of care provided,† the study called for further research into the practices or conditions that may alleviate stress among educators, including financial or material stressors.

*Madill, Rebecca, Tamara Halle, Tracy Gebhart, and Elizabeth Shuey. 2018. *Supporting the Psychological Well-Being of the Early Care and Education Workforce: Findings from the National Survey of Early Care and Education*, OPRE Report 2018-49. Washington, DC: Office of Planning, Research and Evaluation.

†Carson, Russell L., Jennifer J. Baumgartner, Carrie L. Ota, Ann Pulling Kuhn, and Anthony Durr. 2017. "An Ecological Momentary Assessment of Burnout, Rejuvenation Strategies, Job Satisfaction, and Quitting Intentions in Childcare Teachers." *Early Childhood Education Journal* 45, 6: 801–808; Grant, Ashley A., Lieny Jeon, and Cynthia K. Buettner. 2019. "Relating Early Childhood Teachers' Working Conditions and Well-Being to Their Turnover Intentions." *Educational Psychology* 39, 3: 294–312; Schaack, Diana D., Vi-Nhuan Le, and Jennifer Stedron. 2020. "When Fulfillment Is Not Enough: Early Childhood Teacher Occupational Burnout and Turnover Intentions from a Job Demands and Resources Perspective." *Early Education and Development* 31, 7: 1011–1030.

State and Local Surveys

The project team assessed five state and local surveys that were identified during the data scan. They included the Child Care Provider Survey, the North Carolina Child Care WAGE\$ Program, the Colorado Early Childhood Workforce Survey, the South Carolina 2018 Early Childhood Education Workforce Survey, and Virginia's Preschool Development Grant Birth Through Five (PDG B-5) workforce survey.

Strengths: The assessed surveys include detailed information on CCEE educators' tenure, turnover, compensation, employment conditions, job satisfaction, career aspirations, and training. State and local surveys like these are well positioned to capture the nuances of the CCEE workforce across their geographic area. The five assessed state and local survey datasets used administrative data to draw their sample of survey participants to get broad, representative coverage of CCEE educators and providers across the state. Several of the surveys included educators in home-based child care settings, addressing a significant gap identified by the BASE literature review and environmental scan. State and local survey data could be used to answer questions, in the context of the state or geography they encompass, such as, "How do retention rates differ for educators of infants or toddlers (children up to 2 years old) compared

with educators of preschool-age children (3- to 5-year-olds)? What factors help assistant teachers earn more and grow into lead teacher roles?”

Limitations: Each of these surveys is limited by location; none includes a national sample. These surveys were conducted once rather than repeatedly, so they cannot show changes in the workforce over time. In addition, given their geographic range, their ability to assess the effects of certain policies and regulations on employment outcomes is limited.

Capacity to Link to Other Data: Although it is not clear what other personal identifiers were captured in the data, since that is not publicly available information, at least two surveys included employee names and site information that could be used to link to other individual-level datasets, such as registry information. Most of the surveys included at least site information that could be used to link to program information or geographic information by site address.

State Workforce Registry Data

A total of 41 state workforce registry data sources were identified. The project team concentrated on states where team members obtained documentation or located individual contacts, which allowed for a deeper review of the data. The project team completed full assessments on registries from Colorado, Illinois, and Montana. The team also assessed the National Workforce Registry Alliance Dataset, which linked data across registries.^{iv} The findings from these assessments appear to generalize to the broader universe of state workforce registry data.

Strengths: Workforce registry data tend to include information about a participant’s role, employer, education, credentials, and training or professional development, and may include demographic characteristics and information on wages. The QRIS rating is typically included, along with setting type and professional development training. Potential research questions these data could answer include, “Do settings with higher QRIS ratings retain educators longer? Do educators who receive training or professional development advance to higher roles or receive greater compensation?” (See Box 3 for an example of how Montana’s state registry was used to examine CCEE workforce characteristics.)

^{iv} The National Workforce Registry Alliance has repeatedly reproduced and expanded its dataset. These findings describe the 2019 dataset, which was the most recently available at the time of the assessment. That dataset combines data from 14 registries: Arizona, Connecticut, Miami-Dade (Florida), Illinois, Maine, Minnesota, Missouri, Montana, Nevada, New York, Ohio, Oklahoma, West Virginia, and Wisconsin. Of the 14 registries, participation is mandatory for most of the workforce in Illinois, Nevada, Ohio, Oklahoma, West Virginia, and Wisconsin. The dataset includes active registry participants as of January 1, 2017, through March 1, 2019—however, not all registries were included throughout the full window. Only nine registries submitted data allowing for longitudinal analyses between 2017 and 2019. Of those, only three were mandatory registries (Illinois, Oklahoma, and West Virginia). As a result, nearly 75 percent of individuals in longitudinal analyses of the workforce come from the Illinois registry, leading to results that heavily reflect the circumstances of the Illinois workforce. This information comes from Wayne Mayfield and Ikhee Cho. 2019. *National Workforce Registry Alliance 2019 Dataset Report: Early Childhood Workforce Characteristics*. Washington, DC: National Workforce Registry Alliance, Inc.

Limitations: The quality and coverage of workforce registry data varies by state (and can vary within states over time) based on state requirements and practices. For example, a given state’s registry may be mandatory for providers who participate in publicly funded programs such as child care subsidies but voluntary for other providers, or it may be voluntary for all providers.^v Over time, states may change their rules about who should be included in the registries. Data about employees of home-based child care providers may not be captured unless the provider is licensed or receives public funding and the state has an explicit requirement about including home-based child care educators. The quality and coverage of workforce registry data are also affected by how often providers are required to update their information and the extent to which the state has maintained historical data. For example, data may only be updated when there is a change in an educator’s job, education history, or credential attainment.

Capacity to Link to Other Data: State workforce registries generally include program, employer, and personal identifiers. With the right data permissions, they may be linked to other data sources to augment their research utility. For example, linked state workforce registry data and unemployment insurance wage data can be used to identify and fill coverage gaps in the registry workforce population.

Box 3. Example of State Workforce Registry Data

The Montana Early Childhood Practitioner Registry

The BASE project team received registry data from the Montana Early Childhood Project at the University of Montana. The Montana Early Childhood Practitioner Registry includes information on a range of occupations in the CCEE workforce, including individual-level data (age, race or ethnicity, gender, education level), job-level data (wages, tenure), and organization-level data (setting type, ages of the children served, and benefits provided). The registry represents the current workforce in Montana, as members must reapply and update their information yearly (although they are only required to update their employment information every three years). Participation in the registry became mandatory in July 2018 for all individuals employed by a licensed CCEE facility, including home-based and center-based programs.*

The BASE project team used the registry data from multiple years to examine retention in the field and credential attainment over time and how these factors are associated with an educator’s age, education level, role, and provider type. A forthcoming brief will describe the findings and provide suggestions for the collection of registry data to help provide further insight into the employment and advancement of CCEE teachers in Montana.

*Miller, Cynthia, and Danielle Cummings. 2024. *Retention and Credential Attainment: A Profile of Montana’s Child Care and Early Education Workforce*, OPRE Report 2024-031. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available at: <https://www.acf.hhs.gov/opre/project/building-and-sustaining-early-care-and-education-workforce-base>

^v *Registry reach*—defined as the percentage of all licensed center directors participating in the registry—ranged from 20 percent to 100 percent across the 14 states that were included in the National Workforce Registry Alliance Dataset, with an average reach of 50 percent of center directors participating in the registries. See Mayfield and Cho (2019).

Registry data are used in this way in some integrated data sources. (See the section on integrated data sources in Appendix A.)

State Unemployment Insurance Wage Records

Unemployment insurance (UI) wage data are collected in all states. The data scan team conducted full assessments on UI wage records from Illinois, Indiana, and Missouri because that is where the team had the best access to documentation or contacts. UI wage data are extremely standard across states, so findings from the three state assessments can be confidently applied to the universe of state UI wage data sources.

Strengths: State UI wage data contain individual-level, longitudinal data on CCEE educators. The identification of CCEE educators relies on industry classifications like child day care services and child care workers, which are distinguished by industry (North American Industry Classification System, or NAICS) codes. Total quarterly wages are available for each person, by employer. These data are extremely well positioned to answer questions such as, “For workers in the child care industry, how long have they worked in child care and early education (by quarter)? What are their quarterly wages over time? What industries did educators work in before entering the CCEE field? What industries did they work in after they left the CCEE field?”

Limitations: It is typically not possible to identify the specific role of educators within the industry code (e.g., lead teacher, assistant teacher, director) or to understand specifics of the program context beyond the industry classification. Hours worked per quarter are unknown. In addition, educators working in school settings are not included in the child care services industry but instead in the elementary and secondary schools industry, making it difficult to identify this group. Demographic information about educators is also limited. Sole proprietors, which likely represent a significant portion of home-based child care settings, are not reflected in these data.^{vi} UI data do not capture informal employment, which may leave out many family, friend, and neighbor (FFN) providers and others who may be paid informally. Individuals without a Social Security number are also not included in the data. Thus, although there are benefits to using UI wage data to measure workforce dynamics, the UI wage data by themselves do not address several research needs, such as the ability to explore how workforce dynamics vary by educator characteristics and role.

Capacity to Link to Other Data: Because UI wage data are such a strong source of information about workforce dynamics, but otherwise provide only limited information about personal, program, and job characteristics, they are of particular interest for linking to contextual data sources. UI wage data sources may be linked with other sources at the individual, employer, or geographic level—with some caveats.

At the individual level, some states include personal information such as first and last name, but Social Security numbers are included in all states’ UI wage data and are the most reliable personal identifiers.

^{vi} A report on the 2016 NSECE Home-Based Provider Questionnaire found that, among home-based providers without prior relationships with the families of children they served, about 50 percent of listed providers and 25 percent of unlisted, paid providers had no paid assistants. See National Survey of Early Care and Education Project Team. 2016. *Characteristics of Home-Based Early Care and Education Providers: Initial Findings from the National Survey of Early Care and Education*, OPRE Report 2016-13. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

However, Social Security numbers are rarely collected in other datasets such as registries or surveys. For this reason, an intermediate dataset such as public assistance programs, background check data, state drivers' licenses, or tax records may be needed to enable researchers to connect an educator's Social Security number with more robust personal identifiers that might be found in registry or survey data.^{vii} However, using an intermediary dataset to link two data sources has an impact on the coverage of the linked data because individuals who do not appear in the intermediary dataset cannot be linked.

At the employer level, UI wage data include Federal Employer Identification Numbers, employer names, and employer addresses. These identifiers may facilitate linkages to licensing data or records of employers by program. Linking data by employer cannot consistently be used to obtain program information, however, since many employers blend funds across programs or serve multiple populations and thus may be associated with multiple programs.

Finally, UI wage data include employer addresses, which may be used for limited geographic analyses and could be linked to publicly available data on geographies (such as data published by the U.S. Census Bureau). The biggest limitation in geographic analysis is that an employer's given address may not be the

Box 4. Example of State Unemployment Insurance Wage Records

Illinois Unemployment Insurance Wage Records

The BASE project obtained quarterly UI wage records for the state of Illinois, collected by the Illinois Department of Economic Security. These records, spanning 2005 through 2020, include quarterly earnings at the individual level and include identifiers for both the individual and the employer, making it possible to track individuals, employers, and the relationships between them over time. Despite its limitations, such as limited information on hourly wages, role, or individual characteristics, the data can provide information on long-term trends in CCEE employment and employment in other sectors.*

The BASE project used the data to examine retention in the CCEE sector over time, the sectors from which workers enter into CCEE, the sectors CCEE workers move into when they leave the field, and earnings growth over time. In addition, an employer-level analysis documented turnover and retention among CCEE employers over time. A forthcoming brief describes the findings.

*Wiegand, Emily R., Robert M. Goerge, Hyein Kang, and David McQuown. 2024. *What Were the Wages and Employment Trajectories of Child Care Workers in Illinois over the Last Two Decades?*, OPRE Report 2024-017. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available at: <https://www.acf.hhs.gov/opre/project/building-and-sustaining-early-care-and-education-workforce-base>

^{vii} Federal law requires that all child care staff in centers and all adults working in a family child care home have a criminal background check. This data can provide identifiers, including Social Security numbers, names, and birthdates, that can be valuable to link datasets that may not have the same identifiers.

same as an educator’s site address, especially for multisite employers. (See Box 4 for an example of how Illinois’s state UI wage data were used to examine CCEE workforce dynamics.)

Quality Rating and Improvement System (QRIS) Data

While every state has a QRIS, and some have more than one, these data sources are not a promising source of workforce data on their own because their focus is on providers rather than the workforce. As a result, the data scan did not attempt to catalog QRIS data sources beyond those that were specifically recommended by subject matter experts. The team identified two QRIS data sources in the data catalog: ExceleRate Illinois and the Louisiana QRIS. CCEE educators were only identifiable in the Louisiana QRIS data, so only that data source was included in the primary assessment.

Strengths: QRIS data are a potentially valuable source of contextual information about the providers and settings in which workers are employed. QRIS datasets generally include information about the type of setting (e.g., center, home), the licensed age and number of the children served, and details about provider quality ratings and assessments.

The primary purpose of a QRIS data source is to capture provider information—including quality measures (particularly Classroom Assessment Scoring System, or CLASS, scores that capture the quality of teacher-child interactions)—so these data are particularly rich in provider-level information in general and provider quality in particular.^{viii} Most QRIS datasets also capture other contextual information, such as educator qualifications and training and teacher-child ratios. For that reason, QRIS data, when linked to individual-level educator data, could be used to inform the answers to research questions such as, “Do centers with higher quality ratings retain educators for a longer period of time, on average? What is the teacher-child ratio like in home-based child care settings, and how does that relate to turnover rates?”

Limitations: The project team only identified QRIS data from one state (Louisiana) that contained enough longitudinal worker information to examine workforce dynamics. There is no indication that QRIS data sources usually include enough information to identify CCEE educators in order to investigate questions about their experiences without linking to external data.

Capacity to Link to Other Data: QRIS data sources track providers over time (generally annually), so it is possible to connect the worker with provider information relevant to the worker’s time with that provider. These data could be linked to other data sources by provider name and address.

^{viii} The Classroom Assessment Scoring System is an assessment that measures classroom interaction through the lens of three domains that promote children’s learning and development: instructional support, emotional support, and classroom organization. It was developed at the University of Virginia’s Center for Advanced Study of Teaching and Learning. See University of Virginia. 2022. “Classroom Assessment Scoring System.” Website: <https://education.virginia.edu/classroom-assessment-scoring-system>

Program Data

This category includes administrative data collected through state, local, or provider data systems during the administration of CCEE programs. The two data sources identified in the data scan were the Head Start Program Information Report and the Child Care and Development Fund (CCDF) ACF-801. These data sources cannot be used to identify CCEE educators but can provide important contextual information if they are linked with other data at the provider level.

The Head Start Program Information Report includes information at the delegate agency level for all Head Start grant recipients and delegate agencies.^{ix} These data include extremely rich setting detail, such as aggregate counts of staff by role and qualifications, salary information by role, staff breakdowns by race and ethnicity, and agency-level turnover rates. The Head Start Program Information Report also includes information about the families participating in Head Start, attendance, and additional services provided by the agency. These data contain Head Start grant numbers, delegate numbers, and grantee names and addresses, which could be used to link to other types of data. Head Start Program Information Report data can be used to better understand Head Start programs and their workforce. For example, if researchers link these data with geographic wage data, they could answer questions such as, “How do local wages affect entry and exit rates into the CCEE field?” or “What is the effect of changes in K-12 salaries on movement from the CCEE field into K-12?”

The Child Care and Development Fund ACF-801 data contain program participation data that states and territories are required to report federally for CCDF participants. The ACF-801 data indicate when providers receive child care subsidies and whether providers receive Head Start funding (and are subject to Head Start requirements). They also contain quality rating information.

The ACF-801 data also contain information on a range of provider settings, including unlicensed providers who are not included in most other data sources. Notably, providers are identified by a state provider ID and their Federal Employer Identification Number, which could be linked to employer records in UI wage data to answer questions such as, “Do providers with both Head Start funding and child care subsidies, compared with providers who have only child care subsidies, offer higher wages or experience less turnover? How are child care subsidies associated with quality ratings?”

However, provider name and address information are not included (except ZIP code), unlike other provider-level data such as licensing data, QRIS, or the Head Start Program Information Report. Additionally, states may choose to submit only a sample of data to the Administration for Children and Families (ACF), so these data are not comprehensive sources of CCDF provider information in all states.

^{ix} An agency can enter into an agreement with another entity—referred to as a delegate agency—to administer Head Start services. 45 C.F.R. § 1303.31 (2016). <https://www.ecfr.gov/current/title-45/subtitle-B/chapter-XIII/subchapter-B/part-1303/subpart-D>

Policy Databases

The two databases identified in this category—the CCDF Policies Database and the National Database of Child Care Licensing Regulations—do not include identifying information on CCEE educators.

No data sources from this category were ultimately included in the project team’s primary assessment. However, the data sources provide information about the policy context in which the child care workforce operates and could be linked by geography and year to other data sources to examine the association of various policies with workforce dynamics. These linkages would help to address research questions and provide evidence on the effects of the policy context in general, and existing policies and regulations in particular, on workforce dynamics. For example, when linked with other sources, they could inform answers to the following questions: “Do state subsidy payment rate policies or QRIS criteria affect the rates of degree completion among CCEE educators? Do states with subsidy policies that prioritize children with special needs employ and retain more educators with expertise in special needs education?”

Integrated Data Sources

Integrated data sources contain two or more different types of data sources that have been linked and that are structured and documented to support analysis of the data. Integrated data sources can link data such as registry data, education records, public benefit data, training participation data, and UI wage records. The project team identified four relevant integrated data sources for the data catalog, including the Linked Information Network of Colorado (LINC) Early Care and Education Workforce project and the Kentucky Longitudinal Data System (KYSTATS). All four data sources were included in the primary assessment.

Strengths: These data sources contain the most robust analytic data that the project team reviewed. Many of the data sources include longitudinal datasets containing educator demographic or role information that are linked with wage data or other data that can provide rich detail on workforce dynamics—information that was identified as a key gap in the knowledge review. Depending on the data included, integrated data sources would also allow for an examination of the effects of various strategies that were designed to shape CCEE workforce dynamics, as well as the reach and uptake of these strategies. Integrated data sources also often include education data sources that may be used to understand credentials or pathways to employment. These data could be used to address a variety of research questions, including, “How do factors such as experience level and initial wage affect retention at a given provider or in the CCEE field more broadly? What is the relationship between the type of care setting and turnover?” (See Box 5 for an example of how Colorado’s LINC was used to examine CCEE workforce dynamics.)

Limitations: These data are collected at the state level and so are not standardized; they only provide information about workforce dynamics in their respective geography. In general, data such as wage data, higher education data, and registry data are pulled from administrative sources to represent the workforce. Since those sources have frequent coverage gaps for home-based child care settings, poorer coverage of workers would be expected at home-based child care settings compared with center-based settings. There also are simply not many integrated data sources in general.

Capacity to Link to Other Data: Integrated data sources include existing linked data sources and are frequently set up to facilitate additional individual- or employer-level links. They also generally include several sources of geographic information (e.g., home address, employer address, or location of school or training program) that can be used to link to census data and other geographic data sources.

Box 5. Example of Integrated Data Sources

The Linked Information Network of Colorado (LINC)

The BASE project obtained access to the LINC data, maintained by the Colorado Evaluation and Action Lab at the University of Denver, from the LINC Early Care and Education Workforce project. That project matches data sources from four state agencies—the Colorado Department of Human Services, the Colorado Department of Labor and Employment, the Colorado Department of Higher Education, and the Colorado Department of Education—to provide comprehensive data on the CCEE workforce. As a linked dataset, this source provides tremendous potential and richness to address key gaps in the literature around employment dynamics.*

The BASE project used the LINC data to examine the characteristics of current CCEE workers in Colorado, including tenure, wages, and education level. The project also tracked participation in postsecondary early childhood education programs in Colorado, including rates of completion, time to completion, and patterns of CCEE employment among graduates. A forthcoming brief describes the findings and provides suggestions for improvements in data collection.

*Wiegand, Emily R., Shannon Gultinan, Thao Tran, and Robert M. Goerge. 2024. *Enrollment and Completion of Early Childhood Education Postsecondary Programs in Colorado*, OPRE Report 2024-032. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Available at: <https://www.acf.hhs.gov/opre/project/building-and-sustaining-early-care-and-education-workforce-base>

Other Contextual Data Sources

Although not included in the primary assessment, some data sources are worth mentioning due to their potential to link to other CCEE datasets and provide additional, relevant context. For example, licensing data are a good potential source of information about providers and settings. These data are comprehensive for licensed providers and could be linked to other datasets that include provider names and addresses. Licensing data generally include information about the type of setting (e.g., center or home) and the age and number of children that the center is licensed to serve. Licenses have start and stop dates, so it is possible to connect the worker with provider information that is relevant to the worker's time with that provider.

Census data are another example of existing data that do not include information on CCEE educators but could be linked to national survey data to provide important contextual information. The American Community Survey (ACS), for example, is a census household survey conducted every year to gather information on the characteristics of the U.S. population, including social, demographic, economic, and housing characteristics. Aggregate ACS data could be linked with other data at varying levels of geography to examine the effect of contextual factors on workforce dynamics, such as neighborhood-level income and

poverty, educational attainment, or linguistic diversity. ACS data are available in aggregate tables that present outcomes for states, cities, counties, and neighborhoods. Individual-level data could also be used to create aggregate outcomes that are not available in the tables, such as income and poverty status for workers in certain occupations. For example, ACS data at the neighborhood level are already linked and available within NSECE public use data files and can answer research questions such as, “How do CCEE educators’ demographics, educational attainment, years of experience, or wages vary by neighborhood-level poverty rates? Or by adult unemployment rates?”

Data from the Bureau of Labor Statistics (BLS), available from the BLS website, can also provide contextual information. First, the BLS Local Area Unemployment Statistics program provides monthly unemployment rates for a range of geographies, including states, metropolitan areas, counties, and small cities. These data could be linked with individual-level data by geography to examine questions such as the effect of the local labor market on educators’ entry into CCEE roles and retention in the CCEE field. Similarly, the BLS Occupational Employment and Wage Statistics program provides comprehensive employment and wage data each year for about 800 occupations, data that are available at the state and metropolitan level. For example, data could be obtained on the hourly wage (the average as well as the value at different percentiles of the distribution) of child care workers in a given area, as well as what percentage of the workforce they represent in that area. Alternatively, similar data could be obtained on other industries that child care workers enter or from which they exit, to assess how opportunities in other fields affect CCEE entry and retention.

Linking Multiple Data Sources

The most promising way to answer key research questions is to link data from different sources. As outlined above in the discussion about existing data sources, few sources exist that meet the criteria necessary to address research gaps. For example, survey data provide rich information on educator characteristics, but they are not longitudinal and so cannot provide insight into turnover, recruitment, and retention. Other data, such as UI wage data, are longitudinal but lack key information, such as educators’ roles.

Following this example, survey data can reveal how tenure length varies by educator role. UI wage data can show how worker compensation varies over time. Neither of these types of data adequately addresses the issue of workforce dynamics and their association with multilevel factors, as the former only provides point-in-time data and the latter lacks information on what contextual multilevel factors drive these changes over time. However, when these data are linked, they can reveal how turnover rates vary by educator role, using UI information on educators’ employment status and survey information on educators’ roles.

There are many possibilities for linking data sources, and great variation in the difficulty associated with doing so. As mentioned previously, it can be quite difficult to link survey and UI data because of the need to use an intermediate dataset to link Social Security numbers from UI data to other identifiers that are present in survey data.

Another option is to link data at the provider level, such as linking UI employer ID with provider information, or registry provider ID with QRIS provider ID. However, linking to provider data may be challenging also, as many sources—registries, licensing data, QRIS, and the Head Start Program Information Report—identify providers by name and address, while wage data and the ACF-801 data identify providers by Federal Employer Identification Number but do not include name and address. Data from different sources may

also vary in terms of the time period(s) during which they were collected, which might also pose a challenge in using them to answer research questions.

The easiest way to link data is by geography, as many datasets include geographical information. This is particularly useful when seeking to incorporate contextual data, which, for example, can be done by linking census demographic data to survey data that involves workforce dynamics.

Conclusions and Areas for Future Work

The landscape of available data sources that can describe CCEE workforce dynamics includes some intriguing possibilities, but there are significant gaps in the breadth of current data sources to speak to questions of great concern to the field. The results of this data scan highlight a few areas for future data development.

Some limitations of existing data include the inability of surveys and administrative data to capture educator movement across states (such as between industries, roles, or advancement), the overall lack of longitudinal data in the field, limited data that follow educators across employers, and the variation in data across geographic locations (such as different reporting requirements for registries). Coverage in provider data sources is inconsistent as well; the richest data are available for licensed providers, for those participating in QRIS, and for those receiving public funding through child care subsidies or Head Start.

The data scan did not turn up any archives that combine administrative data with national survey data. There is unexplored potential in the combination of these data sources, and future work could explore obtaining consent from survey respondents to link their data to administrative data sources. However, the challenge of coverage disparities is significant, since most administrative data on individuals are collected only at the state level and national survey data sources sample from around the country. There are possibilities to link survey data to federally held datasets, such as data held at the Census Bureau or Medicaid records, although there are also challenges to obtaining and linking these data.

Future work in the field could focus on seeking ways to link existing data—such as through the creation of more integrated data sources, as well as through the development of methods to streamline this approach. Integrated data sources are the most promising sources for answering questions about CCEE workforce dynamics, and they could be improved by linking across states, for example, to capture movement across state lines. Furthermore, linkage could still prove difficult due to the wide variety of identifiers used across data sources, whether at the worker or provider level. Standardizing identifiers across relevant data sources would go a long way toward improving the ease and feasibility of data linkage efforts.

In addition to the need for data capturing workforce dynamics, the environmental scan and literature review identified additional research gaps, such as the need for information on educators and workforce dynamics in home-based child care settings. Unfortunately, it may be challenging to capture data on these educators even in the more promising data sources identified as part of the data scan. UI wage data and registry data are more likely to contain complete data on center-based educators, where data collection requirements are more consistent and formal employment is more common. Because these data sources are a key component of integrated data sources and even form the sampling frame for many ad hoc surveys, the lack of information on home-based educators persists throughout data sources. Data are especially lacking for the subset of home-based providers commonly referred to as FFN providers, since they are not typically required to be licensed. FFN providers are an important source of CCEE, particularly

for young children.⁸ The only exception is national surveys—in particular, the National Survey of Early Care and Education, which includes specific sampling of home-based child care settings, including FFN providers. Even when researchers use national surveys, the ability to study the experiences of home-based educators longitudinally is significantly limited by the cross-sectional nature of survey data collection.

Overall, the CCEE field needs more and better data to answer important questions about workforce dynamics. Although there are areas of promise—particularly statewide integrated data sources—a push to increase standardization of the type and frequency of data collected, streamline processes to link data, and collect more data to improve existing sample sizes will be vital to developing a deep, nuanced understanding of problems facing CCEE educators today.

Appendix A: Data Catalog

National Surveys

The BASE data scan team reviewed 18 national surveys, including five in which educators cannot be identified. In Appendix Table A.1 they are grouped by the parent dataset to avoid repetition. For the majority, each different unit of analysis represents a separate dataset. For example, Baby FACES has separate home visitor, director, educator and classroom, and child and parent datasets. Each survey that is listed uses national samples, and although some are conducted in repeated waves, they do not follow the same entities over time and thus do not include longitudinal information on educators. Still, these data contain detailed information on various CCEE actors, including parents, children, educators, and directors. A report on CCEE educators' psychological well-being shows how National Survey of Early Care and Education data can be used to answer questions about workforce dynamics.⁹

State and Local Surveys

The five surveys shown in Appendix Table A.2 tend to include home-based child care educators and use administrative data to capture a broad and representative sample of educators. Except for the Child Care Provider Survey, educators can be identified in each. However, the surveys are limited in their geographic scope to the state or local level. Additionally, these surveys only include data from a single point in time. A study of teacher turnover in Virginia, using the Preschool Development Grant Birth Through Five Workforce Survey, illustrates how these data can be used to answer questions about workforce dynamics.¹⁰

State Workforce Registries

There are 41 state workforce registries listed in Appendix Table A.3; educators can be identified in each registry. These datasets contain information at the state level except for the National Workforce Registry Alliance dataset, which contains national-level data, and the Florida Professional Development Registry, which contains county-level data. State workforce registry data tend to include information on educators like their roles, settings, education, credentials, and professional development. The populations covered by the registries vary and are not necessarily representative; only a subset of educators is required to be included in the registry in some states, while in others registration is entirely voluntary. One analysis of the National Workforce Registry Alliance dataset provides insight into the population of educators who work with infants and toddlers, which is especially relevant in the face of a nationwide shortage of these educators. The analysis demonstrates how state workforce registry data can be used to answer questions about the CCEE workforce.¹¹

Unemployment Insurance Wage Data

Appendix Table A.4 lists unemployment insurance (UI) wage datasets from all 50 states and the District of Columbia. These datasets contain individual-level, longitudinal data on the UI-eligible workforce through which individual educators can be identified; CCEE educators may be identified through the "Child Day Care Services" industry classification. UI wage data also include longitudinal information on employment status, industry, and quarterly wages. They allow for analyses that compare child care with other industries

or examine how individuals move between industries. However, the data do not include information on educators' roles and hours worked, or on program context. An examination of the effect of the COVID-19 pandemic on CCEE educator employment—which uses Illinois UI wage data—demonstrates how these data can be used to answer questions about workforce dynamics.¹²

Quality Rating and Improvement System (QRIS) Data

Appendix Table A.5 shows two QRIS datasets. The Illinois QRIS data do not allow for the identification of educators while the Louisiana QRIS data do. Both datasets contain information at the state level and include provider-level information on the type of setting, ages of the children served, and quality rating assessments. Most QRIS datasets do not include educator-level information, so although many states have QRIS data, only a couple were referred to the BASE research team for the data scan. An examination of the relationship between professional development hours and site quality that uses Louisiana QRIS data shows how these data can be used to answer questions about workforce dynamics.¹³

Program Data

Appendix Table A.6 lists the two national, longitudinal datasets included in the data scan, which compile federally reported administrative data from Child Care and Development Fund (CCDF) and Head Start funding recipients. The Head Start Program Information Report includes detailed information about providers who receive Head Start funding and participating families. The CCDF ACF-801 dataset includes information on families receiving child care subsidies and the providers who serve those families, including unlicensed providers. Neither dataset allows for the identification of CCEE educators or includes educator-level information. These data can be used to answer questions about the CCEE field; CCDF ACF-801 individual-level data can be linked with the CCDF's Policies Database data (which will be discussed in more detail below) to examine the relationship between state or territory policy choices and program outcomes.¹⁴

Policy Databases

The two datasets shown in Appendix Table A.7 provide information about the policy context in which the child care workforce operates; individual educators or providers cannot be differentiated in these data. For states participating in the CCDF subsidy program, the CCDF Policies Database includes information on rules and regulations about family eligibility, application and redetermination, priorities and waiting lists, family payments, provider requirements, and reimbursement rates. The National Database of Child Care Licensing Regulations includes licensing regulations and other program standards for each state. Both datasets have a national scope and capture at least some policy change over time. These data can be used to answer questions about CCDF program implementation.¹⁵

Integrated Data Sources

Appendix Table A.8 shows the integrated data sources included in the data scan. These data sources generally include information at the state level (except for the data source indicated with a note, which includes information at the national level) and link statewide longitudinal administrative data, such as wage data, registry data, and postsecondary data. Each of these data sources allows for the identification of CCEE educators, and they contain both detailed information on educator-level characteristics (such as

demographics and roles) and longitudinal workforce dynamics. They may also include QRIS data or other detailed information on settings or providers. A report that uses Linked Information Network of Colorado data to analyze the CCEE workforce in Colorado demonstrates how these data can be used to answer questions about workforce dynamics.¹⁶

Appendix Table A.1 National Survey Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
American Indian and Alaska Native Head Start Family and Child Experiences Survey (AIAN FACES)	Educator, children, and families	Office of Planning, Research, and Evaluation (OPRE), Administration for Children and Families (ACF) and Mathematica	https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/38028	2019
Current Population Survey	Person	U.S. Census Bureau	https://www.census.gov/programs-surveys/cps/data/datasets.html	2022
Early Head Start-Child Care Partnership (EHS-CC), United States, 2016	Grantee, educator, child care partner	OPRE/ACF and Mathematica	https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/37233/summary	2016
Early Head Start Family and Child Experiences Survey (Baby FACES)	Home visitor, center or program director, educator and classroom, child and parent	OPRE/ACF and Mathematica	https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/37666/summary	2018
Head Start Family and Child Experiences Survey (FACES)	Parent, center/program, child, educator/classroom	OPRE/ACF and Mathematica	https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/36643/summary	2017
National Survey of Early Care and Education (NSECE)	Center-based provider, home-based provider, educator	OPRE/ACF and the National Opinion Research Center (NORC) at the University of Chicago	https://www.childandfamilydataarchive.org/cfda/archives/cfda/studies/37941	2019

^a Links active as of January 2024.

Appendix Table A.2 State and Local Survey Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Child Care Provider Survey ^b	Provider/center	Boyd-Swan and Herbst (2017) ^c	https://www.chrisherbst.net/files/Download/C._Herbst_RD.pdf	2017
Colorado Early Childhood Workforce Survey	Educator	NORC at the University of Chicago	https://earlymilestones.org/wp-content/uploads/2020/02/CO-EC-Workforce-Survey-metro.pdf	2017
North Carolina Child Care WAGE\$ Program	Educator	T.E.A.C.H. Early Childhood National Center	https://www.childcareservices.org/program/s/wages/results/	2021
South Carolina 2018 Early Childhood Education Workforce Survey	Educator	University of South Carolina	https://www.sc.edu/study/colleges_schools/education/research/units/cdrc/projects/ccrt/index.php	2018
Virginia's Preschool Development Grant Birth Through Five (PDG B-5) Workforce Survey	Educator	Virginia Early Childhood Foundation	https://education.virginia.edu/research-initiatives/research-centers-labs/edpolicyworks/edpolicyworks-research-projects/early-childhood-projects/virginias-federal-preschool-development-grant-birth-5	2019

^a Links active as of January 2024.

^b Educators cannot be identified in this dataset.

^c Boyd-Swan, Casey, and Chris M. Herbst. 2019. "Racial and Ethnic Discrimination in the Labor Market for Child Care Teachers." *Educational Researcher* 48, 7: 394–406.

Appendix Table A.3 State Workforce Registry Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Alabama Pathways Professional Development Registry	Educator/caregiver	Gulf Regional Early Childhood Services	https://www.impact-publications.com/assets/al_coreknowledgecompetencies.pdf	N/A ^b
Alaska System for Early Education Development (SEED) Registry	Educator	Alaska SEED Registry	https://www.threadalaska.org/seed/registry/alaska-seed-registry-application-forms	2021
Arizona Early Childhood Workforce Registry	Educator	Arizona Early Childhood	https://www.azregistry.org/index.cfm	2021
Arkansas Professional Development Registry	Educator/caregiver	Arkansas Department of Human Services, Division of Child Care and Early Childhood Education	https://pdregistry.arkansas.gov/	2021
California Early Care and Education Workforce Registry	Educator	California Department of Education	https://www.caregistry.org/	2021
Colorado Shines Professional Development Information System	Educator/caregiver	Colorado Department of Human Services	https://www.coloradoshinespdis.com/s/login/	2021
Connecticut Early Childhood Professional Registry	Educator	Connecticut Office of Early Childhood	https://ccaregistry.org/index.cfm?module=whatIsRegistry&navID=nav31	2021
Florida Professional Development Registry ^c	Educator/caregiver	The Children's Forum, Inc.	https://www.floridaearlylearning.com/providers/professional-development	2021
Georgia Professional Development System	Educator	Georgia Department of Early Care and Learning	https://gapds.decal.ga.gov/	2021
Hawaii Department of Human Services Early Childhood Registry	Educator/caregiver	Hawaii Department of Human Services	https://www.patchhawaii.org/programs/dhs-hawaii-early-childhood-registry/	2021
Idaho's Registry of IdahoSTARS Eligibility	Educator	IdahoSTARS	https://idahostars.org/	2021
Illinois Gateways to Opportunity Registry	Educator	Illinois Network of Child Care Resource and Referral Agencies	https://registry.ilgateways.com/	2021

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
i-PoWeR Iowa's Early Childhood and School Age Professional Workforce Registry	Educator/caregiver	Iowa Department of Human Services	https://ccmis.dhs.state.ia.us/trainingregistry/TrainingRegistry/Public/	2021
Louisiana Pathways Early Learning Center Career Development System	Educator/caregiver	Northwestern State University Child and Family Network	https://www.nsula.edu/pathways/careerdevelopment/	2021
Maine Roads to Quality Professional Development Network Registry	Educator, employer	Cutler Institute	https://mrtq.org/registry/	2021
Massachusetts Early Education and Care Professional Qualifications Registry	Educator, program	Massachusetts Department of Early Education and Care	https://www.eec.state.ma.us/PQRegistry/	2010
Michigan MiRegistry	Educator	Michigan Department of Education	https://www.miregistry.org/	2021
Minnesota Develop	Educator	Minnesota Department of Human Services	https://www.developoolmn.org/	2021
Missouri Professional Development Registry	Educator	University of Missouri	https://earlyconnections.mo.gov/MOPD	2019
Montana Early Childhood Project Registry Data	Educator	Montana State University	https://www.mtecp.org/mt-registry/get-started/	2021
My Oregon Registry Online	Educator	Oregon Center for Career Development in Childhood Care and Education	https://my.oregonregistryonline.org/faq/the-oregon-registry-and-oregon-registry-online/	2021
National Workforce Registry Alliance Dataset ^d	Educator/caregiver	National Workforce Registry Alliance	https://www.registryalliance.org/our-resources/?tax%5Bwpdmcategory%5D=data-sets	2019
Nebraska Early Childhood Professional Record System	Educator	State of Nebraska	https://www.education.ne.gov/oec/nebraska-early-childhood-professional-record-system-necprs/	2021
Nevada Registry	Educator	The Nevada Registry	https://www.nevadaregistry.org/	2021
New Hampshire Professional Registry	Educator	New Hampshire Department of Health and Human Services	https://www.nh-connections.org/providers/nh-professional-registry/	2020
New Jersey Child Care Information System	Educator	State of New Jersey, Department of Children and Families	https://www.njccis.com/njccis/help	2017

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
New York's The Aspire Registry	Staff member	New York Works for Children	https://nyworksforchildren.org/the-aspire-registry/data-stories/	2021
Texas Workforce Registry	Educator	Texas Early Childhood Professional Development System (TECPDS)	https://public.tecpds.org/texas-workforce-registry/about-the-texas-workforce-registry/	2021
Utah's Care About Childcare and the Utah Registry for Professional Development	Educator, program	State of Utah	https://jobs.utah.gov/occ/cac.html	2021
Vermont's Bright Futures Information System	Educator, program	Northern Lights at Community College of Vermont	https://northernlightscv.org/resource/bright-futures-information-system/	2014
Washington's Managed Education and Registry Information Tool Workforce Registry	Educator	Washington State Department of Children, Youth and Families	https://www.dcyf.wa.gov/services/earlylearning-profdev/merit	2021
West Virginia State Training and Registry System (STARS)	Educator	West Virginia STARS	https://wvstars.org/professionals/	2021
Wisconsin Registry	Educator	Wisconsin Registry	https://wiregistry.org/	2021
Wyoming STARS	Educator	Align	https://wyregistry.org/	2021

^a Links active as of January 2024.

^b This information is not publicly available.

^c This dataset contains information at the county level rather than the state level.

^d This dataset contains information at the national level rather than the state level. The National Workforce Registry Alliance dataset used in the data scan primary assessment was from 2019.

Appendix Table A.4 Unemployment Insurance (UI) Wage Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Alabama UI wage data	Person (employee)	Alabama Department of Labor	https://labor.alabama.gov/unemployment.aspx	2022
Alaska UI wage data	Person (employee)	Alaska Department of Labor and Workforce Development	https://live.laborstats.alaska.gov/	2022
Arizona UI wage data	Person (employee)	Arizona Commerce Authority	https://www.azcommerce.com/oeo/labor-market/unemployment/	2022
Arkansas UI wage data	Person (employee)	Arkansas Division of Workforce Services	https://dws.arkansas.gov/workforce-services/unemployment/	2022
California UI wage data	Person (employee)	California Employment Development Department	https://edd.ca.gov/en/newsroom/facts-and-stats/dashboard/	2022
Colorado UI wage data	Person (employee)	Colorado Department of Labor and Employment	https://www.colmigateway.com/	2022
Connecticut UI wage data	Person (employee)	Connecticut Department of Labor	https://www1.ctdol.state.ct.us/lmi/awiclaims.asp	2022
Delaware UI wage data	Person (employee)	Delaware Department of Labor	https://labor.delaware.gov/divisions/oolmi/	2022
District of Columbia UI wage data	Person (employee)	District of Columbia Department of Employment Services	https://does.dc.gov/page/labor-statistics	2022
Florida UI wage data	Person (employee)	Florida Department of Economic Opportunity	https://floridajobs.org/workforce-statistics/workforce-statistics-data-releases/latest-statistics	2022
Georgia UI wage data	Person (employee)	Georgia Department of Labor	https://dol.georgia.gov/area-unemployment-rate-and-labor-force-estimates	2022
Hawaii UI wage data	Person (employee)	Hawaii Department of Labor and Industrial Relations	https://labor.hawaii.gov/rs/home/unemployment/	2022

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Idaho UI wage data	Person (employee)	Idaho Department of Labor	https://lmi.idaho.gov/laus	2022
Illinois UI wage data	Person (employee)	Illinois Department of Employment Security	https://ides.illinois.gov/resources/labor-market-information/ui-program-data.html	2022
Indiana UI wage data	Person (employee)	Indiana Department of Workforce Development	https://www.hoosierdata.in.gov/nav.asp?id=217	2022
Iowa UI wage data	Person (employee)	Iowa Workforce Development	https://workforce.iowa.gov/labor-market-information/indicators/local	2022
Kansas UI wage data	Person (employee)	Kansas Department of Labor	https://klic.dol.ks.gov/vosnet/Default.aspx	2022
Kentucky UI wage data	Person (employee)	Kentucky Center for Statistics	https://kystats.ky.gov/KYLM/UnemploymentClaimsData	2022
Louisiana UI wage data	Person (employee)	Louisiana Workforce Commission	https://www2.laworks.net/LaborMarketInfo/LMI_MainMenu.asp	2022
Maine UI wage data	Person (employee)	Maine Department of Labor	https://www.maine.gov/labor/cwri/laus.html	2022
Maryland UI wage data	Person (employee)	Maryland Department of Labor	https://www.dlr.state.md.us/employment/unemployment.shtml	2022
Massachusetts UI wage data	Person (employee)	Massachusetts Department of Economic Research Data Index	https://www.mass.gov/lists/department-of-economic-research-data-index	2022
Michigan UI wage data	Person (employee)	Michigan Department of Labor and Economic Opportunity	https://www.milmi.org/DataSearch/LAUS	2022
Minnesota UI wage data	Person (employee)	Minnesota Department of Employment and Economic Development	https://www.uimn.org/	2022
Mississippi UI wage data	Person (employee)	Mississippi Department of Employment Security	https://mdes.ms.gov/information-center/labor-market-information/	2022
Missouri UI wage data	Person (Employee)	Missouri Division of Employment Security	https://labor.mo.gov/data	2022
Montana UI wage data	Person (employee)	Montana Department of Labor and Industrial Relations	https://uid.dli.mt.gov/	2022

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Nebraska UI wage data	Person (employee)	Nebraska Department of Labor	https://www.dol.nebraska.gov/Infolink	2022
Nevada UI wage data	Person (employee)	Nevada Department of Employment, Training, and Rehabilitation	https://ui.nv.gov/ess.html	2022
New Hampshire UI wage data	Person (employee)	New Hampshire Department of Employment Security	https://www.nhes.nh.gov/elmi/statistics/claims-data.htm	2022
New Jersey UI wage data	Person (employee)	New Jersey Department of Labor and Workforce Development	https://nj.gov/labor/myunemployment/	2022
New Mexico UI wage data	Person (employee)	New Mexico Department of Workforce Solutions	https://www.dws.state.nm.us/en-us/Researchers/Data/Labor-Force-Unemployment	2022
New York UI wage data	Person (employee)	New York State Department of Labor	https://dol.ny.gov/unemployment-insurance-ui-data-sharing	2022
North Carolina UI wage data	Person (employee)	North Carolina Division of Employment Security	https://www.ncworks.gov/	2022
North Dakota UI wage data	Person (employee)	Job Service North Dakota	https://www.ndlmi.com/	2022
Ohio UI wage data	Person (employee)	Ohio Department of Job and Family Services	https://ohiolmi.com/Home/UIClaims	2022
Oklahoma UI wage data	Person (employee)	Oklahoma Employment Security Commission	https://oklahoma.gov/oesc/labor-market.html	2022
Oregon UI wage data	Person (employee)	State of Oregon Employment Department	https://unemployment.oregon.gov/	2022
Pennsylvania UI wage data	Person (employee)	Pennsylvania Department of Labor and Industry	https://www.workstats.dli.pa.gov/Products/UCActivity/Pages/default.aspx	2022
Rhode Island UI wage data	Person (employee)	Rhode Island Division of Taxation	https://dlt.ri.gov/individuals/unemployment-insurance	2022
South Carolina UI wage data	Person (employee)	South Carolina Department of Employment and Workforce	https://dew.sc.gov/data-and-statistics/data-dashboard	2022
South Dakota UI wage data	Person (employee)	South Dakota Department of Labor and Regulation	https://dlr.sd.gov/lmic/overview.aspx	2022

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Tennessee UI wage data	Person (employee)	Tennessee Department of Labor and Workforce Development	https://www.tn.gov/news.weekly-unemployment-claims-data.html	2022
Texas UI wage data	Person (employee)	Texas Workforce Commission	https://www.twc.texas.gov/businesses/labor-market-information	2022
Utah UI wage data	Person (employee)	Utah Department of Workforce Services	https://jobs.utah.gov/ui/home	2022
Vermont UI wage data	Person (employee)	Vermont Department of Labor	https://labor.vermont.gov/unemployment-insurance	2022
Virginia UI wage data	Person (employee)	Virginia Employment Commission	https://www.vec.virginia.gov/ui-claims-dashboard	2022
Washington UI wage data	Person (employee)	Washington State Employment Security Department	https://esd.wa.gov/labormarketinfo/unemployment-insurance-data	2022
West Virginia UI wage data	Person (employee)	West Virginia Bureau of Employment Programs	http://lmi.workforcewv.org/DataRelease/CountyRelease.html	2022
Wisconsin UI wage data	Person (employee)	Wisconsin Department of Workforce Development	https://dwd.wisconsin.gov/uistats/	2022
Wyoming UI wage data	Person (employee)	Wyoming Department of Workforce Services	https://doe.state.wy.us/lmi/ui.htm	2022

^a Links active as of January 2024.

Appendix Table A.5 Quality Rating and Improvement System (QRIS) Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
ExceleRate Illinois	Program site	The Illinois Network of Child Care Resource and Referral Agencies (INCCRRA)	https://iecam.illinois.edu/data-descriptions/excelerate-licensed-child-care-centers-with-bronze-silver-and-gold-ratings	2021
Louisiana Department of Education QRIS observer data	Educator	Louisiana Department of Education	https://www.louisianabelieves.com/resources/library/performance-scores	2021

^a Links active as of January 2024.

Appendix Table A.6 Program Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Child Care and Development Fund ACF-801	Person/family	U.S. Department of Health and Human Services (HHS), Administration for Children and Families (ACF)	https://childcareta.acf.hhs.gov/ccdf-fundamentals/acf-800-801-child-care-data-reporting	2019
Head Start Program Information Report	Program	HHS/ACF	https://eclkc.ohs.acf.hhs.gov/data-ongoing-monitoring/article/program-information-report-pir	2020

^a Links active as of January 2024.

Appendix Table A.7 Policy Database Datasets Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Child Care and Development Fund Policies Database	States	Office of Planning, Research, and Evaluation and Urban Institute	https://ccdf.urban.org/search-database	2019
National Database of Child Care Licensing Regulations	States	U.S. Department of Health and Human Services, Administration for Children and Families	https://licensingregulations.acf.hhs.gov/	2020

^a Links active as of January 2024.

Appendix Table A.8 Integrated Data Sources Included in the BASE Data Scan^a

Data Source Name	Unit of Analysis	Source	Link to Access or Information	Year of Most Recent Data
Kentucky Center for Statistics (KYStats) Kentucky Longitudinal Data System	Person	KYStats	https://kystats.ky.gov/	2021
Linked Information Network of Colorado (LINC) Early Care and Education Workforce project	Educator	Colorado Department of Human Services, Office of Early Childhood	https://lincolorado.org/about-linc/	2019
Longitudinal Employer-Household Dynamics (LEHD) Restricted Microdata ^b	Person	U.S. Census Bureau	https://lehd.ces.census.gov/data/	2022
Ohio Longitudinal Data Archive (OLDA)	Person	The Center for Human Resource Research at The Ohio State University	https://ohioanalytics.gov/	2021

^a Links active as of January 2024.

^b This data source contains information at the national level rather than at the state level.

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