National Survey of **Early Care & Education**

NSECE Downloadable Presentation I: Overall Study Design and Sampling Approach

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NSECE Design

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- An integrated set of surveys conducted in 2012 with
  - Households with children under 13
  - Home-based providers regularly providing early care and education to children under 13
  - Center-based programs providing early care and education to children not yet in kindergarten
  - Center-based classroom-assigned staff
- Sponsored by Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services

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- The NSECE considered an individual a home-based provider if they provided care to a child under 13 who was not their own in a home-based setting at least five hours a week.
- The NSECE defined center-based program as all ECE services to children age birth through thirteen years provided by an organization at a single location. Only programs serving children five years and under, not yet in kindergarten, were sampled.
- Center-based classroom assigned staff worked at least five hours a week in the randomly selected classroom in one of the following roles: lead teacher, assistant teacher, teacher or instructor, or aide.
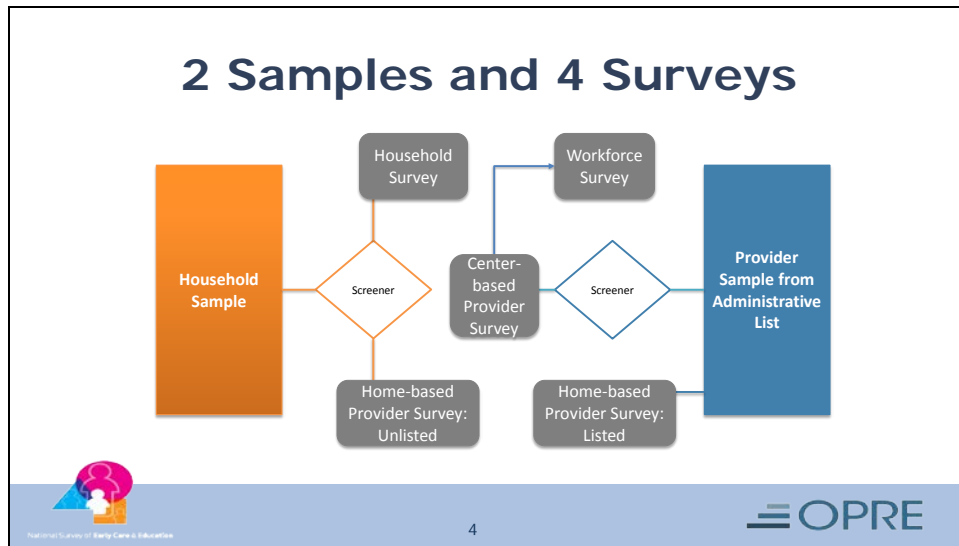
The figure on the slide depicts the interrelationship among the two sample sources and the four NSECE surveys at the foundation of the NSECE data collection design. The two long rectangles on the right and left sides represent the two NSECE sample sources; each of the gray boxes in the middle indicates a survey, and the diamond shaped boxes stand for screening instruments.

Beginning on the left, you see the household sample. The household sample was primarily an address-based sample of housing units selected from the Delivery Sequence File (DSF) maintained by the US Postal Service. Household addresses were screened to identify households with children under the age of 13 for participation in the household survey and home-based providers not appearing on any administrative lists (unlisted) for participation in the home-based provider survey.

On the right hand side of the figure, the blue rectangle represents the provider sample which was developed from state and national administrative lists. These lists of providers included licensing, regulation, and license-exempt lists, as well as lists of providers in specific programs such as offering Head Start or public pre-kindergarten. This sample provided respondents for three NSECE surveys: the home-based provider survey (listed), center-based provider, and workforce.

Note that the home-based provider survey includes sample from both sample sources: the household (for unlisted providers) and the administrative lists (for listed providers).
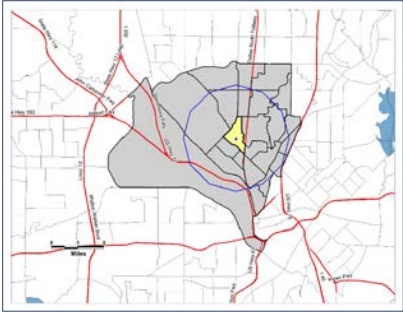
Sample Sizes and Reference Populations

Data File	Number of Observations	Reference Population in 2012
Household	11,629 households with children < 13 years 21,665 Children birth to age 13	Almost 30M households with children under 13 years About 50M children under 13
Center-Based Provider	8,265 center-based programs	129,000 center-based programs serving >= 1 child birth through age 5 years
Classroom-assigned Workforce	5,556 workers	1,000,000 classroom-assigned workers working with children birth through age 5 years
Home-Based Provider	3,934 listed providers 2,052 Unlisted providers	121,000 listed providers to children birth to age 13 years 5.0 M unlisted providers to children birth to age 13 years

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- The Center-based and Workforce files have some additional observations slightly outside of the stated weighted populations.
- Data were collected in 2012.
- The NSECE has defined 'center-based program' as all ECE services to children age birth to thirteen years provided by an organization at a single location. There may have been multiple types of services offered at a single center-based program, and a center-based program may have been freestanding or part of a larger entity, such as a community service organization or a chain. Only programs serving children five years and under, not yet in kindergarten, were sampled.

Slide 6

- The NSECE sample design introduced the concept of a provider cluster to generate nationally representative estimates while capturing the very local nature of how families seek and use ECE/SA, how providers seek and serve children, and how these things together affect the context in which ECE utilization occurs.
- The image on the slide depicts a hypothetical provider cluster using a location in Dallas, Texas.
- The NSECE included 755 provider clusters across the nation.
- Clusters vary substantially in square mileage.
- Clusters may overlap with one another.

Hypothetical Provider Cluster

- Yellow
  - anchor tract selected for Household survey
- Blue star
  - population centroid
- Blue circle
  - a radius of 2 miles
- Grey
  - intersecting "scatter" tracts

Dallas County 0006.01

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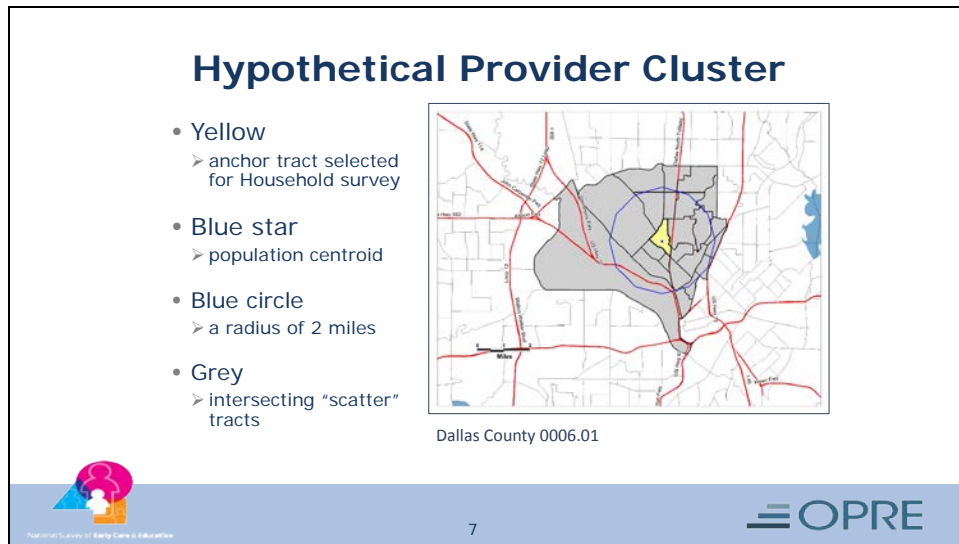
- The yellow wedge in this hypothetical cluster is a census tract which serves as the anchor tract of the cluster and represents the cluster's core of households. Households in the yellow core (generally one or a small number of adjacent census tracts) were sampled for inclusion in the household and home-based provider questionnaires.
- The blue star marks the population centroid of the anchor tract.
- The blue circle marks a two mile radius from the population centroid of the tract.
- Any tracts that intersected the circle of two mile radius are scatter tracts and are colored gray in the map above. The provider sampling frame included providers identified on administrative lists from throughout the gray and yellow portions of the cluster, approximating the locations from which the centrally located households might seek ECE services, whether or not they ultimately use services within those locations.
- The use of the provider cluster allows us to document the interaction of the supply of and the demand for early care and education where it occurs—in local communities—while simultaneously capturing data that efficiently construct national estimates.
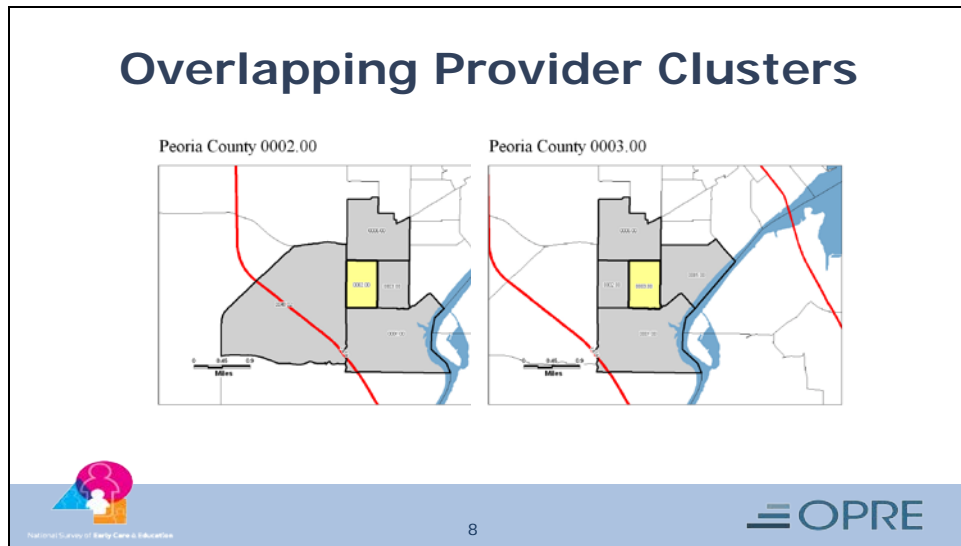
It is possible for two provider clusters to overlap. In the hypothetical example shown on the slide, two tracts located next to each other in Peoria County could have been randomly sampled for inclusion in the study (0002.00 on the left and 0003.00 on the right). You can see that both clusters share some of the same scatter tracts (in gray) along with the anchor tract from each.
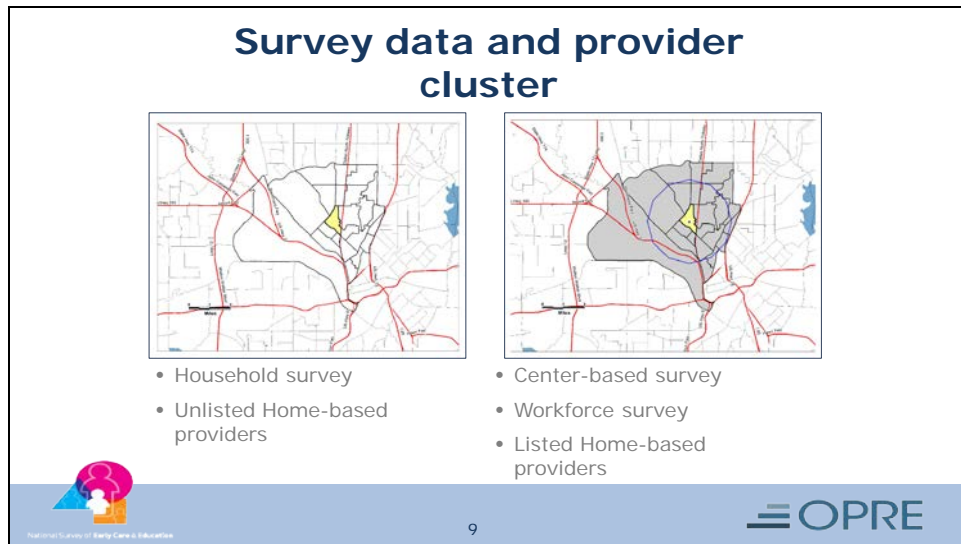
- The images above illustrate the relationship between the survey data and the provider cluster more specifically:
    - Household data and unlisted home-based provider data come only from the anchor tract, depicted in yellow, which lies at the core of the provider cluster.
    - Center-based provider data, listed home-based provider data, and workforce data come from both the anchor tract and the scatter tracts shown in gray.

Geographical Counts

- 50 states, and DC
- 219 counties or county clusters
- 755 provider clusters
  - ➢ Each state has at least two counties (county clusters)
  - ➢ Each county/county cluster has a minimum of three provider clusters
  - ➢ Clusters strongly over-represent areas with high densities of families at or below 250% Federal Poverty Level

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- Some very populous counties have more clusters, ranging from three clusters to more than 20.
- Not all clusters have data in every public-use file.

Anchor Tracts and Cluster Sizes

- All 755 anchor tracts covered 35,000 square miles and the associated clusters covered no more than 127,000 square miles- 4 percent of the country

- The average anchor tract is 46 square miles, the median is 2.3 square miles

- The smallest cluster is 11 square miles and the median is 57 square miles

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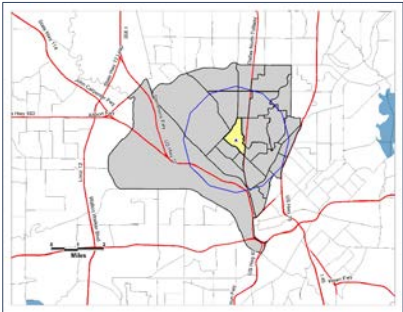
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What geographies can be analyzed?

- **Depends on the research question, sample sizes, and precision requirements**

- National-level geographic characteristics (rural, high-poverty, dominated by service sector employment, etc.) are likely to be supported

- Although all 51 "states" contribute data, sample sizes vary widely

- Geographies not part of the sample design (e.g., cities or school districts) may not have unbiased samples

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Dallas County 0006.01

NSECE data files include a 'Community Characteristics' variables. These have been constructed in parallel to the NSECE provider cluster. For each sampled unit, whether a household or a provider (or a worker in a provider), we define a community surrounding the sampled unit as having the anchor tract where the sampled unit is located, and scatter tracts falling within a circle of 2-mile radius around the population centroid of the anchor tract. We use tract-level American Community Survey data to construct a community characteristic variable that is the adjusted weighted mean of the values of the component tracts. Adjustments are made based on the number of children in each scatter tract under age 18 years, as well as the inverse of the distance between the anchor tract and the scatter tract. Community characteristics available in the public use files include: community poverty density and community urbanicity, and for providers (but not households), rates of African-American population, Hispanic population, and other selected measures. Additional characteristics are found in the Restricted Use Level 1 data.

Several aspects of the design 'distort' the sample relative to the population:
Inclusion of 50 states and DC.
Oversampling of low-income areas.
Overlapping of provider clusters.
Sub-sampling during data collection.

Comprehensive Data

- NSECE data were designed to be:
  - ➢Flexible to analysts' definitions
  - ➢Capture very broad spectrum of activity

- Carefully examine which cases and what values are appropriate for a given analysis

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Slide 16

Questions about using the
NSECE data?

Please write **NSECE@NORC.ORG**

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