

# A Development Plan for Early Care and Education Data and Research Systems

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A Report on  
Building Data and Research Capability and  
Supporting Policy Decisions with Quality Data

***Early Childhood  
DataCONNECTIONS***  
*November 2006*



The Child Health and Development  
Institute of Connecticut, Inc.

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### ***About the Early Childhood DataCONNECTIONS Project***

Early Childhood DataCONNECTIONS is a public-private partnership of the State of Connecticut's Department of Social Services (DSS) and the Child Health and Development Institute of Connecticut (CHDI). The project mission is to promote well-informed decisions on policies and programs for young children by improving state agencies' research capability. For more information, contact Susan Wilson at 860-679-1524 or [swilson@uchc.edu](mailto:swilson@uchc.edu).

### ***About the Child Health and Development Institute of Connecticut***

The Child Health and Development Institute of Connecticut is a not-for-profit organization established to promote and maximize the healthy physical, behavioral, emotional, cognitive and social development of children throughout Connecticut. CHDI works to ensure that children in Connecticut who are disadvantaged will have access to and make use of a comprehensive, effective, community-based health and mental health care system.

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**We have a long way to go to get the data we need, but we can start with what we have, while we work to improve our data resources.**

**Mark Friedman, Vermont Communities Count, Using Results to Strengthen Services for Families and Children**

## *Hearing the Call for Data*

Given the increasing attention to public policy issues surrounding young children, the demand for reliable information on the systems that serve and protect children in their first few years of life is growing. Early care and education (ECE)<sup>1</sup> data is a major focus of that demand, as evidenced by the Early Childhood Partners Strategic Plan, the report of the Early Childhood Finance Project and, most recently, work of the new Early Childhood Education Cabinet and Early Childhood Research and Policy Council. Yet Connecticut must vastly improve its data systems if it is to address the information needs of policymakers, state administrators and other state and local leaders.

Early Childhood DataCONNECTIONS<sup>2</sup> has demonstrated the potential of current early care and education data systems to respond to key policy questions, while pointing out the many gaps in the quality and availability of information. DataCONNECTIONS offers this plan to advance a strategic investment in a data and research infrastructure that can support ECE policy initiatives and public accountability. This work builds on previous efforts by DataCONNECTIONS to broadly identify the deficiencies in and opportunities for improving data systems that speak to early childhood issues.

## *Doing Our Homework*

DataCONNECTIONS commissioned Words & Numbers Research, Inc. to conduct a scan and assessment of ECE databases and to survey the research needs of state agency staff who use these databases. This scan was built upon an earlier inventory<sup>3</sup>, providing updated information on new data systems and changes to previously evaluated systems. From the scan, we were able to describe the overall state of ECE data, identify key problems and outline the ECE Data Development Plan that is presented in this report.

### *Potential Uses of Enhanced Administrative Data Systems*

- Measure the performance of the ECE system in achieving outcomes
- Measure and monitor quantity and quality of ECE programs by age and subgroups
- Plan new or expanded initiatives
- Provide early warning of changes, forecast effect of changing influences on children's development, anticipate need for specific services and interventions
- Improve the understanding of the mechanisms of children's development and determine how changes affect child outcomes
- Improve administrative operations through quality assurance and enhancement.

## ***Building Data and Research Capability***

The Plan takes a broad view of the data landscape and identifies needs for system improvements, data integration and research capability. Part I of the Plan describes ten overarching recommendations.

## ***Supporting Policy Development***

Critical policy and programming decisions are influenced by the information that policymakers and administrators receive. We asked ourselves “what do we want to know?” and “how can we know it?”. Part II of this report of the Plan presents the resulting profiles in six major policy areas, in which information on ECE is crucial and recommends improvements in the data systems to produce that information.

## **The Plan At-A-Glance**

### ***Part I. Building an Early Care and Education Data and Research Capability: Overarching Infrastructure Recommendations***

With the help of key stakeholders, DataCONNECTIONS determined priority steps for developing a comprehensive state-of-the-art set of databases that can be integrated or linked. Implementing these recommendations will provide a data and research infrastructure for producing information that can be reported and analyzed to enhance state operational and policy decision-making. Some of these descriptions reference supporting papers produced by DataCONNECTIONS to provide even more detail. They can all be found at [www.chdi.org/resources\\_download.asp](http://www.chdi.org/resources_download.asp).

1. **Develop an interagency research partnership with state investment and an agenda for research and reporting.** The potential for using administrative data and new research is great, but it will require sustained relationships with researchers and an organized and ongoing interagency capability. In addition, each of the child and family serving agencies should build research committees and processes to promote and support policy-relevant research. (For more information, see *Laying the Foundation for a Ready State: A report on Successes and Opportunities to Support Policy Decisions with Data*).
2. **Develop the technological capability to link datasets from multiple early childhood databases.** Many of our ECE data analysis needs can be solved with technology that allows multiple databases to be linked and data to be cleaned and analyzed efficiently through data

warehouses and through flexible web-based information networks. Data standards are needed to support this data integration. (For more information, see *Putting Administrative Data to Work: A Toolkit for State Agencies on Advancing Data Integration and Data Sharing Efforts to Support Sound Policy and Program Development*).

3. **Monitor early childhood issues by reporting on population indicators and program performance measures.** In connection with the General Assembly's Appropriations Committee Results-Based Accountability (RBA) pilot, basic data on key indicators that quantify outcomes or their proxies and show trends should be reported. A system of performance measures should report on the level and quality of effort and the effects of those efforts. (For more information, see *Keeping Children on the Path to School Success*).
4. **Make improvements to priority ECE provider databases.** The most important databases that need enhancement are those that service Child Care Infoline resource and referral (United Way of Connecticut), child care licensing (Department of Public Health), School Readiness program (State Department of Education), state funded child development centers (Department of Social Services) and the Registry of individual teachers (Connecticut Charts-a-Course). These improvements will facilitate data analysis regarding provider supply and quality and workforce issues.
5. **Collect workforce data through individual licensing with an individual-level registry and a program-level tracking of key staff.** By mandating a registry through licensing of individual teaching staff in centers and family child care homes, a new source of workforce data will be available. This will facilitate reporting on provider staff to the licensing agency and monitoring staffing qualifications by public grant programs. (For more information, see *How Do We Know About Who Is Caring for our Young Children?*).
6. **Initiate a quality rating system for licensed child care.** This powerful policy tool provides families valuable information on programs, and assists the state and communities to target where and how to improve ECE programs. It is highly dependent on quality data systems. (For more information, see *Quality Rating Systems: Family Choices, Accountability, and Quality Improvement*).
7. **Develop a child tracking system.** Child-level data on young children is scattered in many databases that could be integrated or linked to the

State Department of Education student tracking system, affording administrators and researchers a basis for examining outcomes as well as interventions.

8. **Develop a data system to support child assessment and accountability systems.** Data systems to support child assessments at the preschool and kindergarten levels will help classroom teachers to tailor their programs for the needs of their children. Systems are also needed to facilitate longitudinal research, benchmarking for accountability and research for planning and program improvement.
9. **Conduct a household survey.** Asking families about their work patterns and their child care arrangements and preferences is the only way to gather in-depth information about ECE demand, so vital to planning. Such data will also fill out the picture of child care in Connecticut by mapping the use of informal child care. (For more information, see *Survey of Connecticut Families: Child Care and Early Education Needs, Utilization, Preferences and Accommodations*).
10. **Address the need for data and research on the local level.** Concerted effort is needed to make state data more available to local policymakers, administrators and planners and reported by community. (A study of local data needs is underway by Early Childhood DataCONNECTIONS and a report will be available by Spring 2007).

## ***Part II. Supporting Policy Development and Accountability with Quality Data: Data Profiles of Six Major Policy Areas***

We approached the questions of “what do we want to know?” and “how can we know it?” by looking at a single policy area at a time. From that process, we produced focused recommendations for improving and integrating data regarding:

1. **Provider Supply**
2. **Early Care and Education Workforce**
3. **Quality of Providers and Programs**
4. **Family Demand for Early Care and Education**
5. **Child and Family Outcomes**
6. **Early Care and Education Cost and Financing**

Each policy area profile identifies relevant administrative databases and assesses the quality and accessibility of the data as they relate to state operations and

policy research. It then makes recommendations on enhancing the state's capacity to collect, retrieve, and analyze ECE data. This detailed look at each policy area will have different constituencies of interest who will want to promote system improvements in one area. We hope that the recommendations will guide those efforts.

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<sup>1</sup> Early care and education (ECE) is the broad category of services for families and young children (birth to age 12) that meet their child care and/or developmental and educational needs. It can be provided in a formal, licensed setting, school-based classroom or by family, friends and neighbors. It does not include summer camps though they may be used by families to meet their child care needs. Some special education center programs are included. For the purposes of this plan, ECE is generally related to children who are not yet in school, but some data systems for school-age child care will be addressed.

<sup>2</sup> Early Childhood DataCONNECTIONS is a demonstration project through a partnership of the Department of Social Services and the Child Health and Development Institute, with sustained funding from the federal Child Care Bureau, DSS, Children's Fund of CT and David and Lucile Packard Foundation. It has transition funding from the Early Childhood Education Cabinet, the Departments of Social Services, Education and Public Health, the Children's Fund and the William C. Graustein Memorial Fund. The project's purpose is to improve the state's capacity to analyze data and do research on early childhood policy issues.

<sup>3</sup> The inventory and analysis of early childhood databases was summarized in Duran, F. and Wilson, S. (2003). *Reshaping Administrative Databases into Tools for Policy-Relevant Research*, Farmington, CT: Child Health and Development Institute of Connecticut.

## **Part I. Building an Early Care and Education Data and Research Capability**

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In this Part I of the Early Care and Education Data Development Plan, DataCONNECTIONS has lifted up ten overarching infrastructure recommendations that are cross-cutting in scope and provide a significant foundation for multiple policy research efforts. In order to identify priority data and research infrastructure needs and make the highest level recommendations, we looked for the actions that would:

- **Facilitate accountability for results, administrative monitoring, planning and research and**
- **Provide evidence for decision-making**

The discussion and decision-making that we hope the Data Development Plan evokes will undoubtedly offer additional options as more perspectives and other priorities come to the table. We welcome that process and trust that this information will be helpful. We are confident that these recommended actions will leverage considerable improvement in what we can know and how we can know it. The following section takes us into more detail on each of these recommendations.

### *Overarching Infrastructure Recommendations*

#### **1. Develop an interagency research partnership with state investment and an agenda for research and reporting.**

The potential for using administrative data<sup>1</sup> and new research is great, but it will require sustained relationships with researchers and an organized and ongoing capability. An enduring infrastructure for policy research and data analysis is needed as proposed in the Early Childhood Partners Strategic Plan. It should build on the work of the Early Childhood DataCONNECTIONS demonstration project. The State should develop an interagency capacity to propose, conduct and communicate research and data analysis on early childhood issues to improve policy and practice and to advance public accountability. This partnership should:

- Develop and manage an early childhood research agenda which includes new research and data analysis to support policy and program development and accountability
- Report on early childhood population indicators and program performance measures and conduct return-on-investment studies
- Enhance state data systems to better support policy-relevant research
- Improve data access for local communities

- Build and nurture research partnerships
- Share expertise and best practices

Establishing a permanent partnership for this work is paramount. The state needs to invest on a long-term basis in an entity that it can trust to provide balanced non-partisan information on impacts of social policies to policymakers, administrators and the public and that will be the constant advocate for improving data quality.

The audiences for this work are broad, including policymakers, state agencies, ECE providers and advocates, communities, families and the public.

Each of the child and family serving state agencies should also build its own research committee and processes to promote and support policy-relevant research.<sup>2</sup>

The Early Childhood Education Cabinet, in consultation with the Early Childhood Research and Policy Council, should review options for the framework for the partnership, its structure, scope and funding and offer a budget to the Governor and General Assembly.

(For more information on this recommendation, see *Laying the Foundation for a Ready State: A report on Successes and Opportunities to Support Policy Decisions with Data*).

## **2. Develop the technological capability to link datasets from multiple early childhood databases.**

Many of our ECE data analysis needs can be solved with technology that allows multiple databases to be linked and data to be cleaned and analyzed efficiently through data warehouses and through flexible web-based information networks. The most important program-level databases to consider over time are those that service:

- Child Care Infoline resource and referral (United Way of Connecticut)
- Child care licensing (Department of Public Health)
- Care4Kids subsidy program (Department of Social Services)
- School Readiness program (State Department of Education)
- Head Start (Head Start Bureau)
- State funded child development centers (Department of Social Services)
- School-based centers (State Department of Education)
- Registry of individual teachers and directors (Connecticut Charts-A-Course)

This technology can also be used to link child-level databases. It is particularly relevant to the discussion in seventh recommendation below of a child tracking system.

Integrating data from multiple sources for standard and ad hoc analyses is considerably easier with technology that has done the linking into a subset or extract of information. Such technology is able to 1) provide timely and accurate responses to user queries 2) query across database boundaries and 3) provide access to data in a standard format that is compatible across databases. In addition a data warehouse or other linking technology is an effective way to integrate data for an ECE quality rating system.

Two emerging data integration efforts are being developed by the University of Connecticut. The Center for Public Health and Health Policy is proposing a web-based tool called the Connecticut Health Information Network. The new Department of Public Policy has received state funds to create the Connecticut Research Institute and will work on data integration with its client agencies. Both of these systems should be explored for their capability to integrate ECE program and child data.

The Department of Information Technology (DOIT) should be charged with managing the development of data standards for early childhood child and program level databases across health, child development and education fields and selecting or developing a data linking technology.

Massachusetts, Wisconsin and Vermont have developed warehouses to facilitate reporting, data analysis and research in early care and education. They all had to address the need for a common record identification method for providers and children and families.

(For more information, see *Putting Administrative Data to Work: A Toolkit for State Agencies on Advancing Data Integration and Data Sharing Efforts to Support Sound Policy and Program Development*).

### **3. Monitor early childhood issues by reporting on indicators and performance measures.**

Connecticut participated in the 17-state School Readiness Indicators Initiative. Through that effort, DataCONNECTIONS produced the first statewide and community early childhood factbook in 2004<sup>3</sup>, but resources are not in place to replicate it. The indicators drew from administrative data reports and by analyzing datasets that track providers and subsets of children. As a factbook of statewide and local level data, it has proven itself to be a valuable resource. It spotlighted early childhood issues and data on child and family outcomes and

the service systems that try to support them. It also revealed the extent to which data are available and the quality of the data.

Since the publication of the DataCONNECTIONS indicator factbook, a much more focused effort has been initiated by the Appropriations Committee of the General Assembly and the Office of Policy and Management by using an indicator and performance measurement system called Results-Based Accountability<sup>4</sup> (RBA) designating early childhood as an area to pilot their efforts. The Cabinet, Research and Policy Council and Early Childhood Partners have been working on indicators to accompany their planning efforts with the intention of monitoring a designated set of measures. These efforts are attempting to converge with the legislature's RBA initiative to track measures of child well-being related to the state's early childhood goals.

Annual reporting of basic descriptive and trend data on the participation in programs and the quality of those programs should complement key outcome indicators. They are essential both for state and community planning and for policymakers in assessing progress on achieving the desired outcomes for children and families. The state should fund and vest this work in a single entity with a mandate to collaborate with experts and users of the indicators.

(For more information, see *Keeping Children on the Path to School Success* and *Building an Accountability System for Early Childhood Using Indicators*).

#### **4. Make database improvements on priority ECE provider databases.**

The most important databases that need enhancement are those that service:

- Child Care Infoline resource and referral (United Way of Connecticut)
- Child care licensing (Department of Public Health)
- School Readiness program (State Department of Education)
- State-funded child development centers (Department of Social Services)
- School-based centers (State Department of Education)
- Care4Kids child care subsidy program (Department of Social Services)
- Registry of individual teachers (Connecticut Charters-A-Course)

Improvements to these databases will facilitate data analysis regarding provider supply and quality and the ECE workforce.

Child Care Infoline's provider database covers licensed centers, group family homes and family child care homes. Through diligent effort, Infoline has been able to include many license-exempt centers operated by schools, but a more systematic registry of these programs is needed. A standard identification numbering system for these license-exempt center-based programs is essential.

Web-based collection of some of the Infoline provider data should be explored. Infoline should continue to build its capacity to generate analyses and use the mapping functions of their new software. Infoline's methodology for calculating intended enrollment should be adopted as the accepted measure of capacity and the data should be made available to state and community agencies and researchers.

Anticipating that the Department of Public Health (DPH) licensing requirements for education and training will be raised for center directors and teachers and family child care home providers as proposed by the Career Ladder Advisory Committee,<sup>5</sup> the licensing database should be enhanced to capture expanded workforce information on teaching staff and directors.

Uniform reporting of core data elements is needed for school-based preschools and School Readiness, Head Start and state-funded child development centers on capacity and basic characteristics such as sources of funding, child and workforce characteristics and type of slots. These databases should be linkable to each other and to Care4Kids Child Care Management Information System (CCMIS) to establish public datasets. At standard intervals, CCMIS should produce reports by town on the utilization of child care subsidies and data should be archived for future research.

Data recorded on the Infoline provider database from ongoing provider surveys about their participation in these grant and subsidy programs should be validated and expanded by linking to these other databases. A standard provider record identifier should be established across datasets.

The Connecticut Charts-A-Course (CCAC) Registry documents the characteristics, qualifications and other workforce data on individual ECE practitioners. The Registry is moving to an automated database. It should also be mandatory for teachers and directors of licensed facilities to register as proposed by the Career Ladder Advisory Committee.<sup>6</sup>

**5. Collect workforce data through individual licensing with an individual-level registry and a program-level tracking of key staff.**

Mandating a registry of individuals working in ECE settings through licensing or credentialing of individual teaching staff in schools, centers and family child care homes, will create a new source of workforce data. Such a central registry of individuals through a required licensing process complemented by teacher certification and credentialing would track education and training and certify the person at key steps on the CCAC career ladder. As the state increases the teacher requirements for publicly funded preschool programs and entertains the

development of a quality rating system, the absence of workforce data is a major barrier to policy development and planning.

The administrators of the School Readiness program and DSS Child Development Centers should be able to validate the qualifications of staff their programs by linking staff lists with the registry.

If DPH licensing requirements of teachers and directors in licensed facilities are strengthened, DPH should certify that the staff in those facilities meet those requirements by using a link to the registry that holds data on individuals. This will make it possible for programs to report on staff to DPH and for DPH to monitor staffing qualifications efficiently.

To provide additional data on provider staff, Child Care Infoline or the Registry should be commissioned to survey all providers on wages, benefits and turnover as part of their data collection on an annual or biennial basis.

(For more information, see *How Do We Know About Who Is Caring for our Young Children?*).

## **6. Initiate a quality rating system for licensed child care.**

This powerful policy tool, similar in concept to, but far more sophisticated and scientifically-based than, the star rating systems for hotels and restaurants, provides families valuable information on programs and at the same time helps the state and communities to target where and how to improve ECE programs. We can identify measurable factors that in composite have been shown to predict whether the early care and education setting will significantly contribute to positive child outcomes. Those factors include:

- The structure of the setting (e.g., group size and adult to child ratio)
- Teaching staff and director qualifications
- Program dynamics (e.g., curriculum, learning environment, interactions with parents)

The specific quality indicators that are chosen for the rating system will determine the data needs. Implementing the system is highly dependent on quality data, much of which will be newly collected. For example, many states do a periodic observation of classrooms and family child care homes using the recognized environment rating scale instruments. Like those states, Connecticut would have to develop such an observation system if environment rating scores are chosen as an indicator. If we can compile reliable data on each program on these factors and evaluate and report it, we have the basis for a quality rating system. Data linking technology would facilitate compiling of the data. Using

the ratings and the data behind them will allow for a quality improvement program to accompany it.

There are at least 11 states and numerous counties that have established quality rating systems. Most of the other states in the country are in various stages of considering such a system.

(For more information, see *Quality Rating Systems: Family Choices, Accountability, and Quality Improvement*).

## **7. Develop a child tracking system.**

Child-level data on young children is scattered in many databases including, but not limited to:

- Public School Information System (State Department of Education)
- Preschool Special Education (State Department of Education)
- Client databases for child and family programs (e.g., Even Start, Birth to Three)
- Health Registries (Department of Public Health)
- Child Protective Services and Child Abuse and Neglect Reporting (Department of Children and Families)

The state should explore linkages that could be made to a revised State Department of Education student tracking system, called the Public School Information System (PSIS). The PSIS system tracks individual students through uploads from school district databases. Each child is given a unique identifier that is used throughout SDE data management. The preschool component was initially inclusive of school-operated programs only, but was mandated to expand to community-based programs receiving state funds. Children enrolled in School Readiness and Head Start programs have been added at this point, but not DSS Child Development centers.

PSIS has the potential to be a broader child tracking system by including younger children and linking to other child-level databases thereby affording administrators and researchers a basis for examining outcomes as well as interventions. PSIS could become the platform to which other databases are attached using a data linking tool as suggested in the recommendation above regarding technology. Longitudinal analyses would be facilitated with such an integration of data. This will take consensus on the uses and design to create a system that is workable, integrates data from education, child welfare, health, early intervention, and early care and education and protects children and families.

Some linking of child level databases is already happening or is being contemplated among health and among disability programs to track children. For example the Department of Mental Retardation and SDE have successfully linked the Birth to Three and Preschool Special Education databases to track the participation of young children from one program to the other.

**8. Develop a data system to support and integrate a child assessment system.**

Data systems to support child assessments at the preschool and kindergarten levels will help classroom teachers to tailor their programs for the needs of their children and will facilitate longitudinal research. Connecticut has an assessment tool for preschool children and is mandated by legislation to design one for kindergarten. A longitudinal study of school readiness efforts and outcomes is also mandated by statute and designing it is a task of the Early Childhood Education Cabinet and Research and Policy Council.

The preschool assessment was developed in 2000 and is focused on classroom instruction purposes. Teachers would benefit from an easy-to-use data system to support this assessment like the one developed by EastConn. SDE is also designing a kindergarten assessment which like the preschool assessment would be used as an instructional tool that will assist kindergarten teachers in adapting their curriculum to individual children and their classroom. Much discussion of the kindergarten assessment among policymakers has centered on accountability, as they need to evaluate the results of their preschool investments and benchmark children's skills and readiness for school. Instructional assessments are not designed as evaluations of preschool programs or for benchmarking of how all children or a subset of children measure against the curricular goals. The confusion of purposes for these efforts needs to be addressed so that appropriate tools are used and the aims of all parties are satisfied.

The Cabinet, with lead from SDE, should:

- Review research-based best practices regarding assessment for young children and work with the legislature to clarify the purposes of the assessment initiative
- Design an instructional kindergarten assessment that can be aligned with preschool and primary grade curricular frameworks and support it with a classroom-oriented data system
- Design a system of research that can address the needs for accountability, producing data for population indicators and program performance measures, and for program evaluation to inform quality improvement

- Design a methodology for longitudinal research. It could draw partially from the preschool and kindergarten assessments pulling a sample of children or a matrix of children and skill assessments from the data system.

These systems should also be developed to complement and interface with new preschool special education student performance requirements.

## **9. Conduct a household survey.**

Basic policy research about families' work patterns and child care arrangements and preferences is needed to gather in-depth information about ECE demand, so vital to planning. Asking families directly through a household survey is the only way to obtain that data, as there is no administrative data source except the limited data from Child Care Infoline caller database.

Information is needed on how families accomplish the best arrangements they can with imperfect choices available to them. Knowing about the process of making these tradeoffs deepens our understanding of family needs and preferences.

A household survey will also tell us about the large informal sector of child care provided by family members and friends and care in the child's home. We are least informed about the extent, quality and nature of these caregivers.

Public policy decision makers need demand data in order to design funding formulas, regulations, technical assistance and training strategies to better meet child development and family self-sufficiency goals. Such analyses will facilitate policies to affect the distribution and utilization of different care arrangements.

This valuable dataset should be made available to researchers for further analysis. Geo-coding and collecting information on child and family characteristics will allow numerous analyses and linking the data with administrative data. This study should be conducted every three to five years.

(For more information, see *Survey of Connecticut Families: Child Care and Early Education Needs, Utilization, Preferences and Accommodations*).

## **10. Address the need for data and research on the local level.**

Concerted effort is needed to make state data more available to local policymakers, administrators and planners in published reports, web access and datasets that can be used by locally commissioned researchers. The data should be collected and reported by local community and geo-coded to allow linking

databases for local analysis. This need was stressed in the Early Childhood Partners Strategic Plan and the report of the Early Childhood Alliance's ECE Finance Project. It is also consistently articulated by the Early Childhood Discovery Community Initiative funded by the William C. Graustein Memorial Fund. DataCONNECTIONS is conducting a study of local data needs and will publish a report in spring 2007 of the findings.

A study commissioned by the Cabinet in April 2006 asked School Readiness Councils about their data needs when doing their community planning. Of the 24 councils responding to the survey, 17 reported that they were not sure what data they needed and would like assistance in developing a systemic process. They pointed to data that was not available and challenges in trying to get data from state agencies.

Connecticut should review local efforts to assemble and analyze child and family data on a large scale. Philadelphia and Ventura County have made considerable advances in linking state and local data and making it useable and widely available. Because Connecticut towns are so small and not part of county government, we will need state effort to support a community-based data access system. An investment in a data linking technology as recommended above and a web-based access, analysis and display tool will benefit both state and local planners and leaders.

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<sup>1</sup> Administrative data is collected by state agencies and used for: record-keeping and case management; monitoring and evaluating program performance; and ensuring agency accountability.

<sup>2</sup> For more information about state agency research committees, see the Early Childhood DataCONNECTIONS Toolkit -- *Putting Administrative Data to Work* (2005), online at [www.chdi.org](http://www.chdi.org).

<sup>3</sup> Duran, F. & Wilson, S. (2004). *Keeping Children on the Path to School Success: How is Connecticut Doing?* Farmington, CT: Child Health and Development Institute of Connecticut.

<sup>4</sup> Online at [www.resultsaccountability.com](http://www.resultsaccountability.com).

<sup>5</sup> *Connecticut Career Ladder Advisory Committee Report* (2004), online at [www.cga.ct.gov/publications/career\\_report.pdf](http://www.cga.ct.gov/publications/career_report.pdf).

<sup>6</sup> Ibid.

## **Part II. Supporting Policy Development and Accountability with Quality Data**

Early care and education public policy spans a broad landscape that benefits from and intensely needs quality data and analysis. The Early Care and Education Data Development Plan identifies six areas of policy interest:

- 1. Provider Supply**
- 2. Early Care and Education Workforce**
- 3. Provider Quality**
- 4. Family Demand for Early Care and Education**
- 5. Child and Family Outcomes**
- 6. Early Care and Education Cost and Financing**

This Part II of the Plan will define these interests, their information needs and data sources. We offer recommendations for data improvement. As a complement to the Part I priority data system recommendations, these profiles attempt to map changes that will establish a flexible and enduring infrastructure for data analysis, reporting and future policy-relevant research. They anticipate “what we want to know” and “how we can know it” and questions we have yet to ask. We hope the profiles will stimulate interest and investment in these vital data systems.

### *Data Profiles of Six Major Policy Areas*

#### **1. Provider Supply: How do we know about the quantity of ECE programs and their characteristics?**

The supply of ECE providers and services is a public policy concern because of its key influence on attaining work and education goals. In an economic discussion, the supply is one side of an industry’s market. From a family point of view, it determines whether parents have access to the care and education services they need to work and prepare their children for school. For providers, it affects their mission and livelihood. For a community, it is an asset addressing all of these dimensions. For state administrators, planners and community advocates, the perspective on the supply of ECE providers encompasses all of these interests and the practical need to have a healthy array of quality programs from which families can choose and the state can commit to support.

A profile of the ECE supply should document and assess the type of providers, the quantity of ECE spaces, their geographic location and their characteristics such as eligibility criteria and schedule of hours and days. A key element of

supply is affordability of the provider's service as it relates to fees charged and funding sources that subsidize the cost for all or some families. To the extent that a provider follows a particular program model required by a public or private funder, that data is relevant to the supply. It is also age-specific, because much of the supply is not flexible enough to accommodate a range of ages. ECE supply exhibits some elasticity. Families often find flexible alternatives to formal programs by enlisting the help of families, friends and neighbors. There is little documentation of this important informal sector of the supply.

For both families and public agencies, the quality of the providers and programs is an equally important concern, but for this discussion of the data issues about supply, measuring quality will be deferred to a later section. Likewise, supply becomes most relevant when juxtaposed to measures of demand. That relationship will also be addressed later.

For this profile, the concentration is on counting the slots, knowing who they can serve, locating them geographically and cataloguing basic characteristics. Unless we know this much about the supply, our public policy development is severely impeded.

### **Provider Supply Policy and Program Questions**

As policymakers, planners and advocates plan and review public policy and programming about the supply of ECE providers, they ask:

- How many child care slots exist in targeted communities? How many of the slots are publicly supported for targeted children?
- How well does the supply reflect the need when considering type, age of children, geographic location, full-time/part-time and financial accessibility?
  - In what types of ECE are there gaps and over-supply? Geographically where are the gaps and over-supply?
  - For children from low-income families, which communities have gaps and over-supply?
  - Where should there be public investment in slots, facilities, etc.?
- What are the market trends for various segments of ECE?
  - Where is the supply of family child care diminishing?
  - As publicly-funded preschool program slots have increased, have there been changes in the supply of private preschool or of public or private infant and toddler care?
  - Have recruitment or facilities development affected the supply of slots?
- What investment is needed to make publicly-funded programs financially viable at a level of quality?

- How is the ECE market distributed among regulated and unregulated providers?
  - What are the nature and dynamics of the unregulated (informal) sector?
  - Are efforts to bring unregulated providers under regulations effective?
  - How does Care4Kids policy affect the viability of regulated and unregulated care?
  - When families have access to quality regulated programs, do they still choose informal care? Why or why not?

Improved administrative data systems have the potential of answering many of these questions. For others, new data collection would be required.

#### **Data Issues on Provider Supply**

Child Care Infoline maintains an extensive database of formal ECE providers in order to serve the resource and referral needs of families. In 2004, the Department of Social Services (DSS) and United Way of Connecticut committed to converting the Child Care Infoline Provider and Client Databases from CSP to software developed by the National Association of Child Care Resource and Referral Agencies (NACCRRRA) called NACCRRAware.

Considerable advantages were evident over the existing software program for referral functions in terms of ease of data entry, screen displays, worker search to assist callers, on-line searches by customers, adding and customizing data fields and elements and producing standard reports. In addition, the database is archivable and easily exported as an ASCII text file that can be converted into spreadsheet and relational formats so that it can be manipulated for reporting and research purposes.

**Sources of Provider Supply Data**  
*Early care and education provider supply data are recorded in multiple administrative databases. We identified the following sources:*

- *Department of Public Health: Licensing and Enforcement*
- *United Way of CT: Child Care Infoline Provider Database*
- *State Department of Education: School Readiness Evaluation System*
- *Department of Social Services: Child Development Centers*
- *US Department of Health and Human Services: Head Start Program Information Report*
- *State Department of Education: State Head Start*
- *State Department of Education: Public School Information System (PSIS)*
- *State Department of Education: Preschool Special Education (PC-ISSIS)*
- *State Department of Education: Strategic School Profiles*
- *Department of Social Services/ United Way of CT: Care4Kids Subsidy Program (CCMIS)*

*Characteristics of these databases are included in Table 1 in the Appendix.*

Conversion of the Provider Database to NACCRRRAware began in the summer of 2004 and was completed by January 2005. There are some unconfigured fields that have potential for new data collection on providers. Child Care Infoline will also be able to produce geographic reports and map data.

Obtaining an accurate count of slots in licensed facilities is more difficult than would be expected. The problem is that when DPH establishes the license capacity of a center, it applies the regulations to the square footage of the facility. The facility may be large and have the potential of accommodating more children than the center actually intends to enroll. However, this potential capacity is what is set as the license capacity and is reported. Another complication is that some programs run more than one shift. They may actually serve, on a part-time basis, more children than their license capacity. Even when there is a single session, children may come at different times and share a slot. It would be impractical to capture all such variations, but when there are morning and afternoon programs, license capacity significantly underestimates the actual enrollment – a problem that should be addressed. License capacity for family child care and group homes are recorded by DPH at the maximum allowed by regulations. This also overestimates homes that intend to keep their operation small or to target the age of the children they serve.

Child Care Infoline does an annual survey of the providers in its database. By asking for current enrollment and current vacancies, Infoline is able to total these numbers to derive the program's intended enrollment capacity. Those data are now recorded in the NACCRRRAware database and updated annually. Because that information by provider has not been available to planners and researchers, data on license capacity have generally been used. Acceptance of the Infoline methodology and the resulting data should be resolved so that data on provider capacity are consistently reported.

Child Care Infoline has made attempts to expand their provider database to include all early care and education providers, both licensed ones and license-exempt center-based programs. There is no reliable source list of the license-exempt center-based programs. These mostly school-based programs can legally operate without a license. SDE has made an effort to transfer a list of public school programs to Infoline, but the list is not complete or accurate until the end of the school year and changes by the beginning of the next year as programs are added or dropped. Private school programs are not recorded anywhere unless Infoline discovers them.

Other administrative databases cover subsets of public ECE providers (e.g., state-funded child development centers). Some have more detail in some areas than the Child Care Infoline database and would be helpful for research and data

analysis. For example, Infoline lacks the verified information on slots funded and governed by these public programs, making it difficult to study the overlap of funding and regulations among programs. Data collection for the various public programs is also not uniform. A core set of data elements could be established for Head Start, School Readiness, state-funded centers and public school-based programs to facilitate aggregating and providing an accurate count of publicly funded ECE slots.

In addition to the databases maintained for these funding programs, databases on accreditation, consultation and other relevant programs have important information on providers. Linking the Child Care Infoline database to other databases is difficult because there is no standard provider record identification across datasets. The same provider may variously be identified by agency, owner, common name or location. A DPH license number for the site is a good identifier except for license-exempt centers that do not receive a number. As mentioned above, there is no registry of license-exempt center providers maintained by DPH or SDE. CCMIS, that supports the Care4Kids program, has a system-generated provider identification procedure that works for the child care subsidy program that could be adopted if DPH or SDE were mandated to create a registry of license-exempt center programs.

Expanding the Infoline database and making it possible to easily link to other databases would enable one to create subsets on the basis of age, geography or type and study the characteristics of those programs (e.g., part-time vs. full-time, accreditation status or acceptance of subsidies). As other quality measures are collected, the complete registry of ECE programs would be necessary to examine the quality of various sectors. For example, a researcher or administrator might be able to look at the characteristics and quality indicators of providers that have a large number of Care4Kids subsidies. In states that have adopted quality rating systems that assign levels of quality to programs based on established criteria they depend heavily on a full registry of centers and homes and a completely reliable way of identifying records for data linkage.

There is no goal to include informal family, friends and neighbor care in the Infoline database. The only source of supply information regarding informal caregivers is the Care4Kids CCMIS and it covers only those providers who are serving subsidized children. A sample survey of families is the best method of learning about the size and dynamics of this segment of the ECE supply. A few other states have done such a household survey and found it very useful and enlightening. Without it, states must rely on national household survey information or their own best guesses.

## **Recommendations for Developing Provider Supply Data**

Data on the supply of early care and education is one of the most basic needs for understanding the child care policy regarding regulation, professional development, facilities, grant allocations, subsidies and provider supports. Implementing the following recommendations will enhance the data systems and the quality of data available for policy-relevant research.

1. Establish Child Care Infoline as the repository for supply data on ECE using the NACCRRAware software. Configure the database to address Connecticut needs. New features of the system include:
  - Maintenance of the desired enrollment data fields
  - Archiving the data sets quarterly
  - Activating the data mapping function
  - Producing standard reports on ECE supply at the town level and making them available for further analysis by researchers.

Develop a standard identification number procedure for license-exempt centers and programs that can be used in the Infoline database and complements the licensing identification numbering system.

Validate Infoline data with data from other public program databases and populate the fields with the additional data.

2. Develop a registry of license-exempt centers and programs with a mandate that they be registered.
3. Develop a core set of data on capacity and basic characteristics (funding source, public slots) that all public programs (Head Start, School Readiness and state-funded child development centers) would collect. Link these data with the Infoline database periodically to keep Infoline current and to validate some data collected from providers.
4. Explore a web-based data collection of some Infoline data.
5. Ensure that homes that have been removed from the Department of Public Health family child care licensing roster and those current at anytime can be identified and that associated data is retrievable.

6. Conduct a supply and demand study, using the Infoline provider data and a household survey to include:
  - Analysis of the existing supply of care, both formal and informal
  - Analysis of the demand and preferences of families
  - Analysis of the gaps or overabundance of care geographically
  - Analysis of work and child care patterns of families
  - Description of the informal sector, its size, characteristics and functions

## **2. Early Care and Education Workforce: How do we know about who is caring for our young children?**

The early care and education (ECE) workforce is a complex policy sector that encompasses issues of standards, professional development, compensation, recruitment and retention. These are key policy issues because early care and education is a labor-intensive service and the qualifications of the teacher/provider are central to the quality of the service. It is not surprising that a demand for in-depth information about the people who teach and care for the state's young children is voiced by a diverse group of interests coming with different reference points and that they are frustrated that the data they need is not readily available.

Economists see this workforce in terms of labor markets and the impact on the economy and want to know the size of the workforce, the range of employee salaries and the relationship of compensation to the price of child care. Families want information so they can be confident that the teacher/provider is competent and trustworthy, is like them and can meet their goals for their children. Staff want to be valued and paid appropriately and have affordable ways to improve their knowledge and skills. Program directors try to recruit and retain good staff and worry about this largest expense in their budgets.

Public administrators want standards that promote health, safety and learning goals, systems that produce qualified teachers and adequately-financed, effective programs with a stable workforce. Higher education and training institutions want to know the demand for teachers and directors who they are educating in order to tailor the nature and size of their professional development programs. Workforce information is necessary to plan initiatives for recruitment, retention

and improving qualifications of teachers and directors. Most of the data interest is in the formal providers, but the numbers, characteristics and education needs of the informal provider sector of family, friends and neighbors should be available as well.

In addition to addressing these information needs, data development regarding the ECE workforce is needed to support many administrative functions. If we knew more about who is providing ECE services, it would help administrators in:

- Tracking compliance with standards
- Determining training needs
- Planning for quality improvements
- Reporting on quality rating of programs and providers
- Recruiting new teachers and directors
- Developing a wage supplement program
- Distributing training and other information

Meeting the information needs of these varied interests and others is particularly difficult for the early care and education industry because of the paucity and scattered nature of ECE workforce data. Today, Connecticut cannot produce definitive data that even tells us how many people are in the field, much less their qualifications or salaries.

Connecticut's Early Childhood Education Cabinet began a planning process in 2005 for an expansion of prekindergarten programs as part of a larger early childhood agenda. With mandates<sup>1</sup> for higher teacher qualifications being phased in over the coming decade and significant increases anticipated in the supply of programs, ECE workforce data is in high demand. The lack of data hampers the Cabinet and the Early Childhood Research and Policy Council in their attempts to project the need for professional development and the required infrastructure investment as these programs are implemented.

For this profile we will focus on how to identify, track and characterize individuals in order to determine, through regular reporting, analysis and research, the needs for improving and supporting these workers and the programs that employ them. Before developing strategies for data development, we should describe the elements of a profile of the ECE workforce that would include data on individuals and the workforce as a population.

On an individual level, we need to know demographic characteristics of teachers and administrators, their education and experience specific to early childhood, their compensation, their working conditions and their professional intentions.

We should know their teaching or administrative level and the segment of the ECE system in which they work.

On a population level, that profile should be able to show trends in these elements and progress in meeting standards and to differentiate among various segments of the system (e.g., Head Start teachers). We are interested in the dynamics of this workforce including how individuals move along a career ladder and increase their education, how compensation levels affect job choices and how these dynamics cumulatively affect turnover in the field and among programs.

### **Workforce Policy and Program Questions**

As policymakers, planners and advocates plan and review public policy and programming, they raise many questions about the early care and education workforce. They ask:

- What are the patterns of compensation, benefits, qualifications and turnover of various segments of ECE? What are the trends over time?
- Are publicly funded programs going to be able to reach higher workforce standards? Are there sufficient individuals in the training and education pipeline to meet benchmarks?
- What parts of the ECE industry and what key positions have under-qualified staff?
- Are professional development investments being sustained because qualified staff are retained?
- What are the minimum standards that will help children achieve their learning goals? Should a BA teacher in every classroom be the goal of workforce development and is it attainable?
- Do program characteristics such as having a director with a credential, accreditation of a program and other proxies for provider quality correlate with each other?
- How long does it take teachers to move from entry levels to degree levels? What paths do they take?
- Do our higher education institutions have the capacity to meet the demand of increasing programs and higher teacher standards?
- How big an investment will be required to effect a living and competitive wage for ECE staff?
- How can the state build qualified leadership in ECE centers?
- Are increases in grants and subsidies translating into higher staff salaries?
- How will offering group health benefits to family child care providers affect the supply of these homes?
- Do ECE staff reflect the ethnic/racial characteristics of the families they serve?

Policy-relevant research can be designed to answer many of these questions if public administrative data systems are put in place or improved.

### **Data Issues on ECE Workforce**

Regularly collected data about the ECE workforce is strikingly inadequate to identify and describe the population of people who care for and educate young children in Connecticut. There are some databases that help us describe teachers for a limited program or funding stream. These databases are unable to meet many of our larger data needs because they only cover a subset of the workforce, do not capture all the desired data elements and are reported in aggregate.

For example, among the publicly funded programs, the Head Start program has the most complete data on staff, but reports in aggregate by grantee. The School Readiness Evaluation System reports qualifications of individuals, but does not collect salary or turnover information. The Department of Social Services (DSS) does not collect any data on workforce issues on its state-funded child development centers. The preschool special education database records, on a district level, the number of teachers and the full time equivalent staff for that specific program.

Similarly, both community-based and higher education professional development programs are circumscribed in that they only capture data on those individuals who for a period of time are enrolled. They are useful for monitoring the movement of students through their systems, but not for describing the progress of all staff in the field.

The most ambitious attempt to document the characteristics, qualifications and other workforce data on individual ECE practitioners is the professional development registry used by a growing number of states. Connecticut Charts-

#### ***Sources of ECE Workforce data***

*Early care and education workforce data is recorded in multiple administrative databases. We identified the following sources:*

- *Connecticut Charts-A-Course: Child Care Registry*
- *State Department of Education: School Readiness Evaluation System*
- *State Department of Education: State Head Start*
- *State Department of Education: Strategic School Profiles*
- *Department of Higher Education: Student Graduation and Retention data*
- *Department of Public Health: Licensing and Enforcement*
- *US Department of Health and Human Services: Head Start Program Information Report*
- *US Department of Labor, Bureau of Labor Statistics and CT Department of Labor, Office of Research*
- *United Way of Connecticut: Child Care Infoline Provider Database*
- *United Way of Connecticut and Department of Social Services: Care4Kids Child Care Assistance (CCMIS)*
- *Wheeler Clinic: Training Program in Child Development*

*Characteristics of these databases are included in Table 2 in the Appendix.*

A-Course (CCAC), the state's early childhood development system, was actually a pioneer in developing a Registry tied to its career ladder of educational qualifications. For over 12 years CCAC has taken Registry applications from ECE practitioners and trainers for the purpose of tracking an individual's credentials and producing a certificate of their qualifications, much the way a college tracks course completions to produce a transcript for a student. Likewise, the Registry has taken applications from trainers seeking approval from the Training Approval Board. The Registry has been able to serve these purposes well. However, it has been voluntary, with few incentives for individuals (other than trainers) to participate. At its peak, the Registry had records on 9,000 individual teachers, directors and trainers.

The major drawback of the Registry is that it has not been an automated database, but rather it is primarily paper files in file cabinets. This not only makes it impossible to use the data, but compromises the reliability of the data itself because it is not easily and regularly up-dated. Significantly, CCAC is planning by 2007 to automate its Registry and other functions, such as the scholarship program, into an integrated system. This initiative will be a breakthrough in workforce data development.

United Way of Connecticut's Child Care Infoline and Department of Public Health (DPH) Regulatory Services Branch are the other data sources that one might expect to have workforce data. Infoline can deliver data on the highest educational status of individuals who operate family child care homes. It is a single data element that is not validated, relying on self-report from the individuals, but it does track the entire population of licensed family home providers. DPH's licensing database is not a rich source of workforce data, because it only reflects the administrative need to document the qualifications of head teachers and mandated consultants. With few requirements for staff qualifications in the regulations, there is little basis to collect more data on education and training.

The Departments of Labor, at both the state and federal levels, collect and report wage and employment data on ECE caregivers and teaching staff. The Bureau of Labor Statistics at the US Department of Labor determines the uniform classifications for reporting. It uses three categories of workers that report these data on some ECE staff, leaving out self-employed family child care home providers. Unfortunately preschool teachers, child care workers and assistant teachers are not defined occupational codes. This creates confusion and makes the data very difficult to use.

Without reliable, consistent administrative data regarding the ECE workforce, states have turned to special surveys to produce a useable profile. Such surveys

are difficult to administer when there is no registry of individuals from which to draw a universal or random sample. These studies usually use the provider supply records from the licensing agency to draw a sample of facilities. To keep the inquiry manageable, they use directors as informants and ask for aggregate information on the teaching staff. The resulting data is adequate for describing the workforce, but cannot be analyzed to show the relationships of compensation, qualifications, and turnover of employees in surveyed programs.

The Department of Social Services (DSS) made its first attempt to collect workforce data on licensed providers in 2001 by adding a few questions to its biennial market rate study.<sup>2</sup> This sample survey was greatly expanded in the summer of 2005 under the auspices of Early Childhood DataCONNECTIONS, through funding from the Career Ladder Advisory Committee. The University of Connecticut Center for Survey Research and Analysis conducted both surveys. Analysis of data from the 2005 study was published in November 2005<sup>3</sup>. Until Connecticut has a mandated registry of individuals, it will have to rely on these periodic special studies.

### **Recommendations for Developing Workforce Data**

Connecticut should begin to address the data development needs regarding the ECE workforce. DataCONNECTIONS has not only inventoried and evaluated the current status of workforce data, but we have also reviewed the systems of other states. States that invest in child care registries, recruitment and retention studies and regularly track and analyze the qualifications and compensation of their workforce are able to evaluate their professional development endeavors, rate their providers, and plan effective quality improvements. Connecticut is beginning to build an outcomes monitoring system using the results-based accountability model and contemplating a quality rating system for child care providers. Reliable workforce data is essential to these efforts.

The following recommendations result from this review of workforce data systems in Connecticut and nationally, and reflect the data gaps we detected and the anticipated need for both policy and program-relevant data. Please note that we have not tried to address the data needs regarding the training and higher education systems that are also relevant to workforce planning.

1. Develop systems to track individual practitioners. We recommend that the state do the following:
  - In the short-term, develop and support an automated web-enabled database at CCAC to record the current Registry data and adapt it when a licensing or certification system is implemented. Make registration mandatory for administrative and teaching staff

working in School Readiness programs and DSS Child Development centers. For other programs where participation would be voluntary and we would need to make the Registry effective and attractive to as many ECE staff as possible, increased outreach and incentives should be directed to potential registrants to promote participation.

- By 2009, implement a mandatory early childhood licensing or credentialing system for individual community practitioners through a single state agency, similar to the way nurses, teachers and electricians are licensed or certified, and build individual level Registry functions into that licensing system. The system should:
    - Use levels of credentialing that articulate with major steps on the CCAC career ladder.
    - Develop competency-based examinations or portfolio systems to establish an individual's level of credential.
    - Collect data by individual practitioner including license identification number, level of credential, education and training qualifications, experience, compensation, employer, and position.
    - Explore and evaluate the options of designating Connecticut Charters-A-Course, Charter Oak College, or the Departments of Public Health, Education, Social Services or Consumer Protection as the credentialing agency.
    - Issue credentialing cards with identification numbers to individuals in the Registry.
  
  - The Career Ladder Advisory Committee and Office of Workforce Competitiveness should work with the State Department of Labor to influence the way ECE workforce data is collected and reported by the Bureau of Labor Statistics to reflect more useful categories of employees.
2. Develop systems to track workforce issues by programs and providers. The individual licensing and Registry should complement and link to enhanced systems to track workforce issues on the program level and by provider segment. We recommend that the state take the following steps over the next biennium to develop tracking systems for programs:
- Add language to the Department of Public Health's child care facility licensing statute and regulations that requires individual

credentialing levels for directors and teachers in centers and for family child care providers.

- Require licensed facilities to report on their compliance with these new staff education and training regulations. Data should be collected by category of staff including number of employees, education and training qualifications, and certification that minimum requirements are met.
  - Develop an annual or biennial data collection as an extension of the Infoline provider database or workforce Registry in order to have a universal database by provider on program level workforce issues. Survey providers on the number of staff by category, wage ranges, benefits and turnover. If the Department of Public Health licensing requirements described above are added, much of this information can be transferred from DPH to Infoline, thereby reducing the survey requirements for Infoline.
  - Create uniform reporting for publicly funded early care and education programs (Head Start, School Readiness, State-funded centers, public school preschools) with a repository at State Department of Education or Social Services of data from all these programs.
  - Link data from the Registry on individuals to licensed programs by using individual identification numbers.
3. Conduct Research. In addition to regular analysis of the enhanced administrative data discussed above, we recommend that the following new research be conducted:
- Include a limited number of workforce questions as part of the biennial child care market study that sets reimbursement rates. The research should inquire about program and policy-relevant issues such as intentions and motivations to improve staff qualifications and compensation, behavior of providers to seek more training or education, how much compensation has increased, and staff turnover.
  - Conduct a comprehensive compensation/retention study of ECE practitioners through a sample survey. It should focus on the dynamics of the workforce in regard to salaries, benefits,

professional development, requirements, recruitment and retention.

- Conduct a household survey of families with young children every three years to research the needs and preferences of families. It should capture the utilization of early care and education services and provide information on the extent to which informal care by family, friends and neighbors is used.
- Conduct a second phase of the early care and education economic impact study and include an analysis of child care workforce wages and impacts.

### **3. Provider Quality: How do we know about the quality of ECE programs and providers?**

Policymakers, program administrators and advocates understand that the quality of the settings in which young children receive care and engage in developmental learning is an important measure for public oversight and investment. Though there is still much discussion about what constitutes “quality” in providers and programs in early care and education, a body of knowledge is accumulating about the components of a quality ECE program.

The recognized components are:

- Healthy and safe practices and facilities
- Staff trained in early childhood
- Planned program and curriculum based on child development theory and research
- Adult and child interactions that are caring and purposeful
- Parent involvement and positive and frequent teacher and parent interactions
- Sound management
- Effective linkages to child and family services
- Practices and relationships that link the early childhood program to the school system

The field is beginning to codify that knowledge in standards and measurement systems. The first frontier for states was setting standards for licensing of centers and family child care homes. Without federal mandates, states developed these regulations independently. Most, including Connecticut, have revised them over the years, but maintained a goal of ensuring that programs were safe and healthy places for children to be. There is general recognition that the Connecticut requirements of licensing are not sufficient to meet the aims of preparation and readiness for school. Connecticut may need to push beyond the health and

safety threshold, especially in the area of pre-service qualifications of staff, but it is impractical to require all programs to meet high standards for effecting readiness for school.

States are developing other ways to elevate and measure the quality of their ECE programs and providers. These include:

**Performance standards** – Head Start pioneered performance standards and many of the pre-kindergarten programs have followed this model. Connecticut’s School Readiness program, though not as prescriptive as Head Start, has performance standards embedded in statute, state agency guidance and the evaluation system.

**Accreditation** – Several national and regional bodies have performance standards that are used to accredit programs. The pre-dominant accreditation system, and the one Connecticut has used the most, is the National Association for the Education of Young Children’s (NAEYC) accreditation. Connecticut has invested significantly in its nationally-recognized Accreditation Facilitation Project (AFP) operated by Connecticut Charters-A-Course which assists centers to attain NAEYC accreditation. Other systems include those established by the American and International Montessori Associations, National Association of Family Child Care, the National School-Age Care Association, New England Association of Schools and Colleges and the Council for Accreditation.

**Quality rating systems (QRS)** – The newest method of tracking and reporting on quality of programs and providers is the quality rating system. Several states have established criteria for rating ECE providers using stars to designate the level of quality. Standard data are collected to measure against these criteria and create the index of quality (3 to 5 star ranges). Connecticut does not have a QRS in place. North Carolina has tied quality rating into their licensing system for data collection, analysis and reporting. Most states use the QRS to inform parents and funders, but also to target programs and practices needing improvement.

**Evaluations** – Local and state level evaluations of programs and providers are one-time or infrequent methods of assessing how well programs are reaching their goals. A variety of tools and methodologies are employed, some of which would be prohibitive on an on-going basis, but are reasonable for an evaluation. Some Connecticut School Readiness Councils have conducted these evaluations. For example, several Councils used the Early Childhood Environment Rating Scale – Revised (ECERS-R) to evaluate their grantees.

Each of these systems has instruments and processes for measurement that support the certifications, ratings and findings that are produced. They constitute administrative databases that can be helpful in drawing a picture of the quality of ECE programs and providers.

For this profile, we are focusing on identifying the indices of quality to answer the yes/no question of whether a program is quality and then how high, but also to evaluate the components of that assessment. If we are aiming to improve quality in these components, more specific measurement results are needed to identify programs needing improvement and generalized deficiencies across many providers. Tracking at all these levels will allow stakeholders to evaluate the outcomes of program improvement initiatives from professional development to facilities improvements.

### **Provider Quality Policy and Program Questions**

There are fundamental policy questions regarding provider quality that need to be answered. It will also be necessary to examine more deeply the components of quality as our expectations of child outcomes increase. Policymakers, planners, families and advocates ask:

- Are ECE programs of sufficient quality to ensure learning and support families?
- Are publicly funded programs meeting quality standards? Can we track the improvements in the broad supply and in these programs in particular?
- Can we determine in what areas improvements are needed (e.g., teacher qualifications, turnover, literacy, facilities, teacher-child interaction) in order to target quality enhancement efforts?
- What is needed to monitor programs and to provide quality improvement assistance?
- What information can be provided to parents in a user-friendly way about the quality of providers?

**Sources of Provider Quality Data**  
Early care and education provider quality data are recorded in multiple administrative databases. We identified the following sources:

- Department of Public Health: Licensing and Enforcement
- United Way of CT: Child Care Infoline Provider Database
- State Department of Education: School Readiness Evaluation
- Connecticut Charts-A-Course: Accreditation Facilitation Project
- US Department of Health and Human Services: Head Start Program Information Report
- State Department of Education: State Head Start

*Characteristics of these databases are included in Table 3 in the Appendix.*

### **Data Issues on Provider Quality**

Very little data on quality of ECE in Connecticut is available. The most basic standard of quality, as discussed above, is compliance with licensing regulations that address health

and safety issues and minimal teacher/caregiver qualifications. Substantiated violations of regulations are recorded in generic categories by provider and maintained in an automated database.

The next level of quality is represented by accreditation and meeting Head Start or School Readiness standards. The various accrediting authorities maintain a registry of accredited programs by state. The information is limited to the certifying that the program has achieved the status. Infoline also captures this information from providers, but does not validate it with the accrediting agency. AFP keeps records on programs that have entered that support program for NAEYC accreditation and those in the process of accreditation. AFP is working with NAEYC to obtain an Excel spreadsheet on-line with Connecticut accreditation data by program. Head Start and School Readiness programs monitor their grantees using their respective standards. Head Start ratings are not available in a database that could document areas for improvement. The SDE School Readiness Evaluation does rate grantees on major components of the program. These data are available through School Readiness Councils, though they are reported in aggregate by SDE.

As measures of quality, data on staff are captured through databases for individual funding programs. Limited information on teacher qualifications is available for Head Start, School Readiness programs and school-based programs because they have requirements for teachers that are captured by their individual reporting systems.

Though some communities have rated their ECE programs (mostly School Readiness) using ECERS-R environment rating scale, the data are not generally reported by site and rating is not updated. A definition of quality that encompasses accreditation or Head Start compliance was used in the DataCONNECTIONS' early childhood indicators book.

### **Recommendations for Developing Quality Data**

Early care and education tries to meld the dual functions of a support for parents while they work or go to school with enhancing early learning and child development. As the goal of preparing children to be successful in school and life comes to the fore, the need to know if programs can meet standards that will achieve that goal becomes essential. The following recommendations will help us know if families have quality choices.

1. Create a quality rating system for regulated providers of ECE.
  - Determine rating criteria and collect new data or use existing administrative data as appropriate.

- Collect on-site rating data as determined by rating criteria.
  - Report ratings on the web.
  - Use the rating system to target quality improvement investments.
2. Support the efforts of the General Assembly and Office of Policy and Management Results-Based Accountability pilot and Early Childhood Education Cabinet to track quality of state programs and their relation to population outcomes.
  3. Monitor public programs and collect core information on their quality, use the data for targeting quality improvement efforts and to report annually.
  4. Conduct a cost and quality study on ECE programs.
  5. Track the qualifications of teachers, directors and family home providers as a major component of quality.

#### **4. Family Demand for Early Care and Education: How do we know what families want and need?**

If provider supply of early care and education is one side of the classic equation, the other side is family demand. In the usual sense of supply and demand, family demand can be thought of as choices that families actually make in their care arrangements. Examination of this utilization data, where available, will tell us the distribution of that demand among available choices. But with early care and education, it is also the preferences and needs that are not satisfactorily met that concern the policymaker.

A major factor of demand is the work schedule that parents must cover with care for their children, oftentimes with a patchwork of providers. The prevalence of irregular and non-traditional hours of work for low-wage employees makes many center-based programs a difficult match. The informal sector often takes up the slack, but we are least informed about the extent, quality and nature of these caregivers, as discussed in previous sections of this report. In fact, parents use multiple criteria for determining their care arrangements – schedules, cost, comfort with caregiver, location, cultural and linguistic matching. Focusing only on supplying programs that meet the educational and developmental goals families have for their young children without taking into account their other

needs and preferences may lead to poorly planned supply that families will not use.

To fill out the picture, information is needed on how families accomplish the best arrangements they can with imperfect choices available to them. Knowing about the process of making these tradeoffs deepens our understanding of family needs and preferences.

A basic economic dynamic of early care and education is the skewed relationship of supply and demand from the ideal equation because both suppliers (ECE providers) and consumers (parents) are caught in an untenable economic situation. Parents cannot afford the true cost of the service, so providers have difficulty offering and expanding quality programs that meet family needs and preferences without highly subsidized fees. The result is that formal providers cannot adequately respond to those needs. Demand, therefore, becomes an important public policy issue as government must finance, improve and supply this vital service for many families that the market cannot easily accommodate.

Knowing the current match between supply and demand in a given community or across the state can inform policy decisions at all levels, those of individual providers, community planners, employers, support organizations, advocates and agencies working with families. Public policy decision makers need demand data in order to design funding formulas, regulations, technical assistance and training strategies to affect the distribution and utilization of different care arrangements in meeting child development and family self-sufficiency goals.

In summary, for the family demand profile, we are concerned with: 1) utilization of all types of care and education, 2) family needs and preferences, and 3) the accommodations parents make to mediate between their needs and the available supply. Of particular interest is an examination of work patterns of parents. The state should pay close attention to low-income parents, especially those who receive child care subsidies through Care4Kids. Since the subsidy's purpose is to assist working parents to pay for good child care, the state should research the dynamics of the demand and family choice from that caseload and study changes in family utilization as policies change.

### **ECE Demand Policy and Program Questions**

States that have put resources into research regarding families' need for early care and education have wanted to understand the dynamics of public policy and the market and how demand relates to the supply of providers. They ask:

- What part of the family demand for quality ECE is not being met under current public policy and market forces?

- What are the employment patterns of Connecticut families with young children, especially low-income families? What is the nature and duration of participation in the Care4Kids subsidy program? How does that affect the child and the family?
- What ECE arrangements do families use? How many?
- What role does informal care play in the ECE system? How large is this sector?
- What factors affect parental choices of ECE?
- What proportion of families is presented with at least two good choices among provider arrangements?
- How can the state and the ECE field shape family choices and provider responses to family needs?
- Are policies for Care4Kids and public grants facilitating placement of young children from low-income families into quality settings? Are they promoting continuity of care arrangements?
- Where is it choice or necessity that drives the arrangements parents make?
- How informed are families about options, development needs of their children and what constitutes a quality program when they make choices about their ECE arrangements?

### **Data Issues on Family Demand**

There is little known about the ECE needs and preferences of Connecticut parents beyond anecdotal information. If the most basic measure of demand is actual utilization, then approximations of enrollment can be made using the Child Care Infoline annual survey of formal providers. Databases of publicly funded programs can sometimes validate the data on those individual programs. Data on the utilization of informal care is unavailable, except for those families that use child care subsidies, through Care4Kids. We are, therefore, unable to document fully how families obtain their early care and education across formal and informal sectors. In other words, we do not know if the informal sector provides 75% or 25% of care or some point in between for various age groups. Connecticut must look to national studies for this information without state-specific data.

Data on preferences and needs of Connecticut families is also absent. Gross estimates on child care needs are made using the

***Sources of Family Demand Data***  
*Data on family demand for early care and education are recorded in multiple administrative databases. We identified the following sources:*

- *United Way of CT: Child Care Infoline Client Case Service Program Database*
- *Department of Social Services/United Way of CT: Care4Kids Subsidy Program (CCMIS)*
- *U. S. Census*
- *Enrollment and waiting lists for various funded programs*

*Characteristics of these databases are included in Table 4 in the Appendix.*

number of working families with children under age 6, but the assumptions about family needs are so broad as to make this information virtually worthless. Likewise, estimates of the demand for publicly funded education and child development programs such as Head Start and School Readiness are commonly based on data regarding the population of an age cohort and the number of low-income families. There is no data on the factors that influence family choices and their relative weight to refine those estimates and conventional wisdom about population subgroups (whether they are ethnic minorities or families of children with disabilities) takes the place of valid current data.

Matching supply and demand data is hampered because both are incomplete.

### **Recommendations for Developing Family Demand Data**

Our understanding of the demand for early care and education must come from the expression of family desires and behaviors. A few existing databases can be mined for their behaviors in terms of utilization of ECE. Much more information is needed about their desires and needs and how they behave and can only be captured by asking them directly. The following recommendations come from the realization that families are the best informants regarding demand for ECE.

1. Conduct a household survey to determine family needs, preferences and the relationship of stability of employment to the stability and quality of ECE used by families. Replicate that study every 3 to 5 years.
2. Analyze the Care4Kids child care subsidy data for information on utilization of providers and to determine the influence of policy and procedure changes on that utilization.
3. Study the dynamics of subsidy utilization regarding duration of arrangements and episodes of utilization and the relationship to employment changes.
4. Analyze vacancy data from Infoline in the context of supply and demand.

### **5. Child and Family Outcomes: How do we know how children and families are doing?**

Sifting through the current public policy discourse regarding accountability and outcomes regarding children and families requires defining concepts and clarifying purposes. As policymakers and the public take seriously their responsibility to know that public investments pay off, the need for data to

support evaluation and planning is particularly important at the child and family level.

In measuring child and family outcomes, one looks for changes in behavior, knowledge, skills or attitudes as a result of the home environment and participation in a program or service. Outcomes are connected back to inputs. The more they are shown to correlate, the more can be said about accountability – the demonstration of the results of an initiative or circumstance.

Tracking child outcomes for young children often culminates in testing for academic achievement in the third or fourth grade using standardized testing. Prior to that age, testing is generally unreliable. Preschool and kindergarten assessments based on observations allow teachers to determine a child’s ability on a broad range of developmental skills and knowledge. These assessments are designed to tailor instruction to a child’s needs as measured against learning standards. Sampling these data or using other appropriate instruments and tracking children longitudinally allows administrators and researchers to understand across populations of children, the outcomes as related to early experiences and interventions these children have had.

When outcomes are not connected to the inputs they can serve a tracking purpose and are called indicators or benchmarks. These global data points can effectively flag positive or negative movement regarding a goal for children and families.

Child outcomes in ECE should not be limited to academic skills and knowledge. The early childhood field stresses that young children must be viewed holistically and developmentally and in a family context. The desired outcomes for these children address the full range of their physical, social, emotional, language, artistic and knowledge acquisition skills. These are measured in terms of observable behavior. Child outcome data give us more understanding when related to family conditions of security, economic stability, family nurturance and stable quality child care arrangements. All of these outcomes are relevant to the goals of early care and education, though some are more easily measured than others.

States are developing and using systems to describe the expectations for child learning and development at various stages. Some of those tools include:

**Developmental assessments:** Several widely-used assessments map child expectations based on typical development. In Connecticut, these include Ages and Stages, PEDS and the DECA instruments and systems. Developmental

assessments concentrate on physical, emotional and social development and the use of language.

**Early learning guidelines:** These child level benchmarks on the full range of child learning and development are connected to a curriculum framework and assessment. They have advanced the quality of practice making it at the same time more intentional and more individualized. The guidelines, in turn, have informed professional development programs. Connecticut has a model set of early learning guidelines in the Preschool Curriculum Guidelines. Infant and toddler guidelines are being developed by the Department of Social Services. Assessment instruments are usually developed to aid in measuring a child's skill and knowledge level in relation to the age-appropriate guidelines.

In profiling the child and family outcomes data and policy sector, we will look at outcomes that are points along the development continuum and major time periods such as kindergarten entry and fourth grade. We will also consider how to relate these outcomes to inputs.

### **Child and Family Outcomes Policy Questions**

There is a new interest in looking at outcomes in order to evaluate public investments. Outcomes also inform policymakers on our progress in solving significant problems and researching goals. Policymakers, planners and advocates want to know:

- Can we determine whether children under age 6 are developing typically?
- What are the outcomes in kindergarten for children who attend public preschool programs?
- How can we track child progress overall, for low-income children and for children participating in public programs?
- What percentage of children who enter kindergarten have the skills and an approach to learning that help them succeed? In what areas of preparation do they need help?
- Is participation in a quality early care and education program correlating with higher Connecticut Mastery Test scores for at-risk children?
- Are a minimum number of hours in preschool programs needed for children to achieve learning goals?

### **Data Issues on Child and Family Outcomes**

Though the demand for accountability for public policy and spending is rising, the ability to respond in terms of child outcomes is very limited. Longitudinal studies that follow a cohort of children are expensive, especially if most of the data is newly collected.

Major discussions about child assessments are taking place. Connecticut's preschool early learning guidelines and curriculum framework have an accompanying preschool assessment designed for classroom use. A data tracking system is being used with the preschool assessment by some programs and school readiness councils, but there are currently no data collection systems in place to support aggregating widespread child assessments. A kindergarten assessment system is mandated and being developed by the State Department of Education. Clarity will be needed about its purpose - instructional, benchmarking or evaluation of preschool experiences.

The SDE Public School Information System (PSIS) system tracks individual students through uploads from school district databases. The preschool component was initially inclusive of school-operated programs only, but was mandated to expand to community-based programs receiving public funds. Children enrolled in School Readiness and Head Start programs have been added, but not the DSS centers.

PSIS has the potential to be a broader child tracking system by linking to other individual level databases. The Department of Mental Retardation and SDE have successfully linked the Birth to Three and Preschool Special Education databases to track the participation of young children from one program to the other.

Health and development data on young children at the child level is also limited. Birth data are reported through various registries and databases. A new collaborative, called eHealth, is working on electronic health record sharing. Some health plans, including the HUSKY Medicaid plan, collect some useful health status data through diagnostic and service codes and there are discussions regarding improvements in practice and data collection regarding developmental assessments. This ECE Data Plan is not intended to address these databases, but they are pertinent as we think about tracking child outcomes and developmental benchmarks.

A useful addition to reporting data from point in time assessments of individual children is a system of child, family, community and system indicators that track multiple measures of child well-being, the participation in programs and the

#### **Sources of Outcome Data**

*Child and family outcome data are recorded in multiple administrative databases. We identified the following sources:*

- *State Department of Education: Public School Information System (PSIS)*
- *State Department of Education: Preschool Special Education (PC-ISSIS)*
- *Client databases for child and family programs (e.g., Even Start, Birth to Three, Health Registries)*

*Characteristics of these databases are included in Table 5 in the Appendix.*

quality of those programs. These indicators can draw from administrative data reports and by linking datasets to track samples of children. CHDI produced the first statewide early childhood factbook in 2004, but resources are not in place to replicate it. DataCONNECTIONS has worked with the Cabinet and Early Childhood Partners initiative to identify indicators that can be used with their plans, but the capacity to collect, analyze and report these data consistently has not been established. Part I of this Plan recommends that the state make a long-term commitment to use the Result-Based Accountability (RBA) process to monitor early childhood issues by reporting on population indicators.

### **Recommendations for Developing Outcome Data**

Stakeholders need to clarify the disparate arguments for outcome data so that systems for measuring and using outcome data match the purpose. That process can then inform the following recommendations:

1. Build on the SDE PSIS student tracking system.
  - Include participation in all publicly funded ECE programs with policy-relevant information.
  - Explore links with other child level datasets, solving the record identification issue. Encourage research using these child tracking systems.
2. Develop child assessment systems at the infant/toddler, preschool and kindergarten levels.
  - Develop data systems to support teachers for instructional purposes.
  - Develop study designs to appropriately report on a sample of children using assessment information from various sources.
3. Continue the exploration of appropriate ways to measure and report child benchmarks across disciplines for public policy accountability and state and local planning.
4. Develop longitudinal research designs using administrative data including assessment data and other observational and competency data for a sample of children.
5. Report annually or biennially on a consistent set of indicators regarding young children and families using administrative data.

6. Incorporate assessment of children into a broad evaluation of preschool, schools and family strengths.

## **6. ECE Cost and Financing: How do we know about ECE finance?**

Understanding cost and financing of early care and education begins with documentation and cataloguing of revenues and expenditures at the provider level. ECE providers notoriously have difficulty creating working budgets. Besides needing to analyze the actual budgets of providers, policymakers should have data on the true cost of care that would be necessary to support a stable, well-qualified workforce, well-designed facilities and quality programming. This true cost of ECE is skewed by the limits of what parents are able or willing to pay and the artificially low wage scale for ECE employees.

The biggest funder of ECE is the individual family who regardless of income must spend a large proportion of their budget on care to maintain employment and acquire a safe, healthy and hopefully nurturing learning arrangement for their young children. The impact of this family necessity on various parts of the population is a public policy issue because it informs how government should subsidize both the family and the provider system in order to meet policy goals.

The other major funders are primarily the state and federal government, but also local government and school systems, foundations and employers. Their roles are important considerations in piecing together the financing of a high quality ECE system. Projections of the cost of financing of the ECE infrastructure in order to support and improve the early care and education system and of expansion of public initiatives for infant and toddler and preschool programs are dependent on better data about the cost and financing.

For this profile, ECE administrative databases that cover grant programs, the resource and referral registry and the child care subsidy program are examined. In addition, the market rate survey that is conducted every other year is a source of consistent cost and financing data.

### **Cost and Financing Policy Questions**

Policymakers and the public are naturally concerned about cost and financing policies. State administrators and the provider and advocacy communities are also asking questions about cost and financing as they try to improve the depressed ECE market and improve quality while worrying whether families will be squeezed out of the market. The following questions emerge:

- Who pays for ECE services?

- How much does ECE programming cost for various segments of the market?
  - at various levels of quality in regards to staff/child ratios, group size, quality, and compensation of staff and for infants and toddlers and preschoolers
  - with various scopes of services in regards to schedules and comprehensive family services
- What will it cost, over what period of time, to ensure access to high quality settings for all Connecticut three and four-year old children whose parents request preschool?
- What financing strategies can be designed to make quality ECE programs more readily available across different income levels?
- What is the relationship between the cost of ECE programs and their outcomes?
- How financially viable are various sectors of the ECE industry?
- What financing of the ECE infrastructure – professional development, facilities, governance, data management and research, parent information and education and quality assurance – is needed in order to support the supply of quality providers? What are the costs (especially for professional development) associated with the progression of quality programming from poor, through mediocre to good and excellent?
- Are there different supply and demand side strategies to consider in expanding financing for quality ECE services?
- What percent of families’ income is currently spent on ECE across different income groups? How many parents, especially low-income parents, experience difficulty in obtaining child care as a result of cost?
- To what extent do eligible families make use of child care subsidies?
- Do the providers of care that are subsidized differ from those that provide care to the general population? In what ways is the care different?
- How can child care subsidies be used to improve the quality of funded programs?
- How does the presence of subsidized care influence the work and earnings of families transitioning from welfare?
- How can tax incentives either encourage or discourage families from seeking high quality care and education? What effect would a state dependent care tax credit have on families and the market?

### **Data Issues on ECE Cost and Financing**

There is no standard way of estimating the per child cost of providing ECE. Most programs package funding from more than one source that may include public and private grants, public and private subsidies, in-kind services and

family fees. This is even true of for-profit providers. Neither the advertised nor actual fee charged to parents accurately depicts the actual or the needed cost.

The Early Childhood Research and Policy Council has experienced the lack of quality cost data on early care and education programs in its effort to project costs of implementing the Early Childhood Education Cabinet’s framework of priorities. The scope of those estimates included: 1) per child costs for individual ECE slots; 2) teacher salaries; 3) facility costs; 4) administration of programs; 5) new systems for professional development, quality rating and accountability and more. The Council has made extensive use of existing research and data, but has continuously been forced to make estimates without good evidence.

New models are being developed to estimate costs for individual centers and policy initiatives. The Tool for Comparing Program Costs, developed through the Connecticut ECE Finance Project, is an interactive spreadsheet that estimates the costs of center-based care and allows the comparison of costs by changing the values of design elements such as qualifications of teachers, adult to child ratios, etc.

Tracking the revenue that is received by ECE programs is difficult, because much of the data is missing or not reported in comparable ways. Following slots funded by each source does not easily produce a per child cost, because slots are often funded by multiple sources. Nor does the data produce an unduplicated count of slots or children.

Costs and revenues for public school preschool programs and preschool special education programs are not recorded in any common database. Very little is known about the financing of programs that are not publicly funded.

The only information about cost or revenues for informal care comes from Care4Kids CCMIS on the families enrolled in that subsidy program using that type of care. Other states have used their subsidy databases to study the patterns of use by enrolled families and refined their policies on income eligibility, fees, rates and continuation of eligibility.

**Sources of Cost and Finance Data**

*Cost and finance data are recorded in multiple administrative databases. We identified the following sources:*

- *United Way of CT: Child Care Infoline Provider Database*
- *State Department of Education: School Readiness Evaluation*
- *Department of Social Services: Child Development Centers*
- *US Department of Health and Human Services: Head Start Program Information Report*
- *Department of Social Service/ United Way of CT: Care4Kids Subsidy Program (CCMIS)*
- *Department of Social Services: Biennial Market Rate Survey*
- *Office of Policy and Management and individual state agencies budget system*

*Characteristics of these databases are included in Table 6 in the Appendix.*

Child Care Infoline’s provider database documents self-reported provider fees charged. The DSS biennial market rate survey is used to establish the child care subsidy rates and could be used to better understand the public and private segments of the market and how their rates relate to the cost of quality care.

Estimates of revenue in economic models such as REMI have not been scrutinized by economists who know the ECE market segment well. In the emerging studies of the economic impact of ECE, economists are hampered by poor data on providers, workforce, revenue and demand.

Little data is available on families’ ability to pay for ECE. Connecticut’s family fee policy takes into account multiple children in a family needing care, but is not based on evidence of how much families can afford.

### **Recommendations for Developing Cost and Financing Data**

There is likely to be great interest in developing better data for analyzing cost of ECE and determining the impact of financing options. The following recommendations on data development will support those tasks and inform policymaking:

1. Review the cost and finance data needs identified by the Research and Policy Council.
2. Use the market rate study that is conducted biennially combined with the Infoline provider database to track changes in the child care market. Use mapping software with the datasets to further define the differences in rates by location and type.
3. Develop standard ways of tracking public grants to providers and link that data to the Infoline provider database.
4. Develop reporting from school districts on their expenditures and revenues for preschool and classroom spaces provided.
5. Study the impact of increasing per child grants on staff compensation.
6. Study the impact of the scholarship and program grant models on family access to quality care.
7. Conduct return-on-investment studies to document the extent of savings to the state in the short term created by quality early care and education programs. Improve data on the wide range of child, family,

community, business and state benefits of ECE and relate it to cost to produce return on investment information.

8. Conduct a cost and quality study of ECE programs in Connecticut.
9. Continue to refine the center cost template developed by the ECE Finance Project and apply it to projecting costs of various policy options for ECE and to develop programs to improve budgeting skills for local providers.
10. Support reviews of policy initiatives in other states regarding financing ECE improvements.
11. Review the REMI methodology for modeling ECE financing and recommend appropriate changes. Continue to study the economic impact of ECE. Conduct phase II of the early care and education economic impact study to include:
  - Analysis of child care workforce wages and impacts
  - Analysis of impact by labor market regions.
12. Conduct a household survey to determine families' perspectives on affordability, capability and willingness to pay for ECE.
13. Develop a standard methodology and project the need for subsidies for low-income working families and those in education and training programs.
14. Conduct research on the dynamics of child care subsidy use and its impact on employment and wages of low income families.

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<sup>1</sup> The Connecticut General Assembly has mandated that all center-based classrooms that receive School Readiness funds have a teacher with a BA in early childhood by 2015. The National Association for the Education of Young Children is requiring a phased-in increase of teacher qualifications for centers that they have accredited – about one-third of Connecticut centers including virtually all of the School Readiness and Department of Social Services funded child development centers.

<sup>2</sup> King, J. (2003). *Connecticut's Child Care Workforce*. Farmington, CT: Child Health and Development Institute of Connecticut.

<sup>3</sup> Wilson, S. and Duran, F. (2005). *Shaping Young Lives, A Profile of Connecticut's Early Care and Education Workforce*, Farmington, CT: Child Health and Development Institute of Connecticut.

**APPENDIX. TABLES OF DATABASES FOR SIX MAJOR POLICY AREAS**

**Table 1. Databases Containing Provider Supply Data**

<b>Database</b>	<b>Providers Included</b>	<b>Scope (Key Supply Data Elements)</b>	<b>Comments</b>
Department of Public Health: Licensing and Enforcement	Licensed: -family day care homes -group day care homes -centers -camps	Type of care Capacity – licensed and intended Age endorsements Location License expiration date	Family day care closures are archived.
United Way of CT: Child Care Infoline Provider Database	Licensed: -family day care homes -group day care homes -centers -camps License-exempt: -public school-based centers -private school-based centers	Type of care Capacity – licensed and intended Age of children Location Schedule Rates Funding sources Accreditation Affiliation	Updated by DPH licensing file and periodic calls to providers  Incomplete data on school-based centers
State Department of Education: School Readiness Evaluation System and Monthly Service Delivery Reports	Licensed and license-exempt preschool centers funded by School Readiness grants in priority and severe need districts	Capacity of funded slots Enrollment Full-time/part-time etc. Accreditation Health, income, disability characteristics of children	Individual sub-grantees submit data to towns, which forward combined town data. Only this aggregate data is kept for towns at the SDE.
Department of Social Services: Child Development Centers	Licensed and license-exempt infant/toddler, preschool and school-age centers funded by DSS	Capacity of funded slots Enrollment Age of children	Individual grantees submit paper reports to DSS. Enrollment data is not entered into database.
US Dept of Health and Human Services: Head Start Program Information Report	Licensed and exempt infant/toddler (Early Head Start) and preschool (Head Start) centers funded by US Dept of Health and Human Services	Enrollment and capacity Characteristics of children/families Types of programs	Individual grantees submit electronic reports to DHHS.
State Department of Education: State Head Start	Licensed and exempt Head Start and Early Head Start preschool centers funded by SDE	Categories of type and schedule Enrollment, waiting list Children with disabilities and receiving services	Data collection is monthly on provider level.
State Department of Education: Public School Information System (PSIS)	Public school preschool programs	Number of children enrolled by type of program by district	Database is on child level and does not identify specific provider except by type. Does not include preschool special education students.
State Department of Education: Preschool Special Education (PC-ISSIS)	Placements of special education students in school-based and community services	Number of preschool special education children in various settings	Database is child level and does not identify specific provider except by type.
State Department of Education: Strategic School Profiles	Public school district operated programs	Number of preschools operated by district Enrollment	Aggregate report

Database (Supply continued)	Providers Included	Scope (Key Supply Data Elements)	Comments
United Way of CT and Department of Social Services: Care4Kids Subsidy Program (CCMIS)	Licensed and license-exempt providers for children birth to age 12 who are receiving Care4Kids subsidies	License status of provider Characteristics of subsidized child/family Accreditation of provider	Uses license and system-generated id numbers. Source to identify some informal providers.

**Table 2. Databases Containing ECE Workforce Data**

<b>Database</b>	<b>Providers Included</b>	<b>Scope (Key Workforce Data Elements)</b>	<b>Comments</b>
Connecticut Charts-A-Course: Child Care Registry	Individuals who voluntarily registered including teachers, directors, trainers, students in training and education programs	Demographics and contact information Job title, employer type Education and training Scholarship information	The Registry has potential to provide good individual data but because it is voluntary, its population is limited. CCAC is preparing to automate the Registry. Income data is only available for scholarship applicants.
Connecticut Charts-A-Course: Accreditation Facilitation Project	Center enrolled in AFP	Education of staff	CCAC is preparing to automate the AFP data.
State Department of Education: School Readiness Evaluation System	Licensed and license-exempt preschool centers funded by School Readiness grants in priority and severe need districts	Highest educational level of individual by position Salary range and benefits by position	Individual sub-grantees submit data to towns, which forward combined town data. Only this aggregate data on education level is kept for towns at the SDE. Salary and benefit data is kept by towns from center reports.
State Department of Education: State Head Start	Licensed and exempt Head Start preschool centers funded by SDE	Number of staff by position Educational qualifications of teaching staff	Data is collected monthly.
State Department of Education: Strategic School Profiles	Preschool special education teachers by school district	Number and full-time equivalents of preschool special education teachers working in district by area of concentration	
Department of Higher Education: Student Graduation and Retention Data	Graduates of collegiate programs approved by Board of Higher Education	Degrees conferred in academic year by degree type and gender and ethnicity/race of graduate	Aggregate report by institution compiled from data collection for US Dept of Education Integrated Postsecondary Educ Data System. The number of students enrolled in these early childhood programs is not maintained by DHE.
Department of Public Health: Licensing and Enforcement	Licensed centers	Degree or professional licensure held by: Head teacher Consultants: - Health - Early childhood education - Dental - Social services - Dietician	Data is intended to show compliance with regulations and therefore does not apply to all providers, nor all staff. No data on preservice or continuing education of teacher staff.
US Dept of Health and Human Services: Head Start Program Information Report	Licensed and exempt infant/toddler (Early Head Start) and preschool (Head Start) centers funded by US Department of Health and Human Services	Staff with ECE or related degree by position Average teacher salary by qualifications Teacher turnover	Individual grantees submit electronic reports to DHHS. Data is reported in aggregate by grantee.

Database (Workforce continued)	Providers Included	Scope (Key Workforce Data Elements)	Comments
US Dept of Labor, Bureau of Labor Statistics and CT Dept of Labor, Office of Research	Preschool teachers Teacher assistants Child care workers	Number Wage	These are not defined occupational codes.
United Way of CT: Child Care Infoline Provider Database	Licensed: -family day care homes -group day care homes -centers -camps License-exempt: -public school-based centers -private school-based centers	Education level of family child care providers	The education data is self-reported and only available for family child care providers. Centers are asked if they have anyone teaching with each level of education, but this data is not useful.
United Way of CT and Department of Social Services: Care4Kids Child Care Subsidy (CCMIS)	Licensed and license-exempt providers for children birth to age 12 who are receiving Care4Kids subsidies	Individuals who are license-exempt	Source to identify some informal providers.
Wheeler Clinic: Training Program in Child Development	Participants in the Training Program in Child Development	Demographics and contact information Provider type Education, training and experience Tracking module participation Scholarship information on income	Income data is only available for participants requesting scholarship and is self-reported.

**Table 3. Databases Containing Early Care and Education Quality Data**

<b>Database</b>	<b>Providers Included</b>	<b>Scope (Key Quality Data Elements)</b>	<b>Comments</b>
Department of Public Health: Licensing and Enforcement	Licensed: -family day care homes -group day care homes -centers -camps	Complaint/incidents	Compliance with regulations is recorded on an exception basis to track complaints and actions.
United Way of CT: Child Care Infoline Provider Database	Licensed: -family day care homes -group day care homes -centers -camps License-exempt: -public school-based centers -private school-based centers	Education level of family child care providers Accreditation by type	The education data is self-reported and only available for family child care providers. Centers are asked if they have anyone teaching with each level of education, but this data is not useful. Accreditation data is self-report, but could be validated.
State Department of Education: School Readiness Evaluation System	Licensed and license-exempt preschool centers funded by School Readiness grants in priority and severe need districts	Highest educational level of individual by position Rating on quality components -Collaboration -Parent involvement, education, outreach -Immunizations and screenings -Nutrition services -Family literacy -Admission policy -Transition plan -Professional development -Sliding fee scale -Annual evaluation -Serving children with disabilities Continuous Quality Improvement Plan includes accreditation and ECERS	Individual sub-grantees submit staff qualifications data to towns, which forward combined town data. Only this aggregate data is kept for towns at the SDE.  Quality components receive point scores for each of the 11 domains.
Connecticut Charts-A-Course: Accreditation Facilitation Project	Applicant and enrolled centers in AFP, accredited family child care homes and centers	Accredited sites by category and status Status of applicants Number by funding/sponsorship	Comparison data is tracked from 1997. Data is aggregated statewide and by region. Individual participant program data is available.
US Dept of Health and Human Services: Head Start Program Information Report	Licensed and exempt infant/ toddler (Early Head Start) and preschool (Head Start) centers funded by US DHHS	Staff with ECE or related degree by position Average teacher salary by qualifications Teacher turnover	Individual grantees submit electronic reports to DHHS. Data is reported in aggregate by grantee. Compliance with HS standards is not recorded in a public database.
State Department of Education: State Head Start	Licensed and exempt Head Start preschool centers funded by SDE	NAEYC accreditation Teacher qualifications Disability plans	Data collected monthly by provider

**Table 4. Databases Containing Early Care and Education Demand Data**

<b>Database</b>	<b>Families Included</b>	<b>Scope (Key Demand Data Elements)</b>	<b>Comments</b>
United Way of CT: Child Care Infoline Client Case Service Program Database	Individual callers seeking child care information and referrals	Types of care that parents are interested in and characteristics about the families	Does not record utilization, only expressed needs.
United Way of CT and Department of Social Services: Care4Kids Child Care Subsidy (CCMIS)	Eligible low-income working families	Utilization of various types of care, including informal caregivers Family income Length of enrollment in subsidy Parent's employment hours and days	This is the only administrative database with substantial information on informal care and the patterns of use of all types of care by low-income families.
US Bureau of the Census: Decennial Census	Working families with children of various ages	Number of families in tracts that are working with children under 6	These are gross numbers to estimate the demand. The data do not account for the needs and resources of families.
Enrollment and waiting lists for various funded programs	Eligible families who cannot access the program because of insufficient slots available	Number of families registered on waiting list	Care4Kids, Head Start, School Readiness and state-funded centers sometimes maintain waiting lists.

**Table 5. Databases Containing Child and Family Outcome Data**

Database	Children and Families Included	Scope (Key Outcome Data Elements)	Comments
State Department of Education: Public School Information System (PSIS)	Students from PreK through 12 <sup>th</sup> grade enrolled in school or school operated programs	Demographic data on individual student Enrollment in school programs and non-school preschool programs	Unique identifier allows linking with school records
State Department of Education: Preschool Special Education (PC-ISSIS)	Special education students from Preschool through 12 <sup>th</sup> grade	Demographic data Educational setting	
Client databases for child and family programs (e.g., Even Start, Birth to Three, Health Registries)	Individual children and families enrolled or participating	Demographic data Services rendered Status – sometimes outcomes	Linking databases is difficult because of record matching. Birth to Three and preschool Special Education have been linked.  Some health registries have been linked.

**Table 6. Databases Containing Early Care and Education Cost and Financing Data**

Database	Providers and Children/ Families Included	Scope (Key Cost and Financing Data Elements)	Comments
United Way of CT: Child Care Infoline Provider Database	Licensed: -family day care homes -group day care homes -centers -camps License-exempt: -public school-based centers -private school-based centers	Type of care Capacity – licensed and intended Age of children Location Schedule Rates Funding sources Accreditation Affiliation	Updated by DPH licensing file and periodic calls to providers  Incomplete
State Department of Education: School Readiness Evaluation System and Monthly Service Delivery Reports	Licensed and license-exempt preschool centers funded by School Readiness grants in priority and severe need districts	Capacity of funded slots Enrollment Budget and reimbursement Family fees and subsidies Full-time/part-time etc. Accreditation Health, income, disability characteristics of children	Individual sub-grantees submit data to towns, which forward combined town data. Only this aggregate data is kept for towns at the SDE.
Department of Social Services: Child Development Centers	Licensed and license-exempt infant/toddler, preschool and school-age centers funded by DSS	Capacity of funded slots Enrollment Budget and reimbursement Family fees and subsidies	Individual grantees submit paper reports to DSS. Enrollment data is not entered into database.
US Dept of Health and Human Services: Head Start Program Information Report	Licensed and exempt infant/toddler (Early Head Start) and preschool (Head Start) centers funded by DHHS	Enrollment and capacity Budget Characteristics of children/families Types of programs	Individual grantees submit electronic reports to DHHS.
State Department of Education: State Head Start	Licensed and exempt Head Start preschool centers funded by SDE	Capacity of funded slots Budget and reimbursement	
United Way of CT and Department of Social Services: Care4Kids Subsidy Program (CCMIS)	Licensed and license-exempt providers for children birth to age 12 who are receiving Care4Kids subsidies	License status of provider Subsidy by provider type Subsidy by eligibility category, age and service type Family fees Characteristics of subsidized child/family	
Department of Social Services: Biennial Market Rate Survey	Licensed family child care homes and centers	Rates charged by provider type, age of children and region of state	Questions are asked to fit into the Care4Kids rate structure.
Office of Policy and Management and individual state agencies: Budget Systems	Funding programs Grantees	Budget Expenditures	Some data is accessible at OPM or individual state agency but not reported to the public.