Building Child Care Data Capacity in the Commonwealth of Virginia: Project Child HANDS (Helping Analyze Needed Data Securely)

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Project Description.
The goal of this project is to develop an interagency, integrated data system for the purpose of assessing accessibility and quality of early care and education programs available to and utilized by low-income working parents and at-risk families, as well as the impact of quality initiatives to support the school readiness of children in the Commonwealth of Virginia. Steps to creating the system include: identifying current data collected at the state and local levels; assessing data quality and gaps; establishing appropriate data sharing and protection agreements; designing and incrementally building and deploying the system. The data system produced will be a web-accessible, data management system designed to provide reliable data usable by appropriate state, local, nonprofit, academic and other stakeholders, to increase support for policy-level decision-making in Virginia.

Research questions.
- What types of and what is the quality of child care being used by families in the subsidy program?
- Does this vary by locality and family characteristics, such as ethnicity?
- How are these children faring in Kindergarten?

Sample. We established a local advisory and beta testing cohort of seven localities (Wave I). Localities were selected based on region, characteristics and data collected. A second wave of approximately 10 additional localities are being recruited to continue to test the new system. These localities collectively represent the highest use of subsidy dollars in the state.

Methods. To enable analysis of appropriate data sets to answer the research questions, a federated data system is being constructed to link data sets from different state agencies (initially Social Services and Education) in a de-identified manner. The system ensures the confidentiality of each child.

Timeline:
- Wave I Introductory Meeting June 22, 2010
- Locality meetings (Summer, Fall 2010)
- MOUs signed, QRIS data obtained (Fall 2010, Winter 2011)
- Local data obtained (March & April 2011)
- State data obtained (March 2011)
- Wave I follow-up meeting (May 2011)

Progress Update. During fall 2010 and spring 2011, the team received data from local departments of social services and the Virginia Department of Education. These data enabled the team to test the linking system and conduct very preliminary analyses. We are developing our data governance structure and sustainability plan, which include procedures for data security, access, data approval, data use, and system ownership. Virginia Tech will continue to host the system for the foreseeable future.

Data linkage: Linkage is achieved by a combination of deterministic and probabilistic matching algorithm. The probabilistic portion uses five core identifying variables (first name, last name, gender, race and locality). Tests in summer 2010 indicated an extremely high efficiency rate for the created linking algorithm of 98% using perfect (mock) datasets. Follow-up tests conducted using agency-provided 'real-world' data from 5 Virginia localities resulted in a still high 89% match rate (for data sets with previously-verified matching children). When matching between data sets without previous verification that the same children reside in the separate data sets, the match rate between child care subsidy records and kindergarten records was closer

to 60%. This decline in matching percentage was due to the fact that many of the children who received child care subsidies did not have kindergarten education records (for a host of probable reasons, e.g. moving). As a result of the data linkages across five of the seven Wave I Virginia localities, several preliminary results emerged to address the original research questions.

Types of Child Care. The majority of children are attending child care centers. Family day homes and voluntarily registered day homes are next in attendance for children. Very few children attend religiously exempt child day centers or short-term child day centers.

Subsidy Use. Children with more subsidy spells were more likely to be enrolled in multiple programs ($r = .378$) and slightly more likely to have longer spells ($r = .237$). The most common pattern was a single spell of about nine months in the same program.

Kindergarten Results. Children who had longer continuous spells of subsidized care attended more days of public elementary school. Children who had longer care spells scored higher on fall Kindergarten PALS screener. Accounting for greater attendance, this group of children was more likely to meet fall Kindergarten PALS benchmarks.

Future Work:
High subsidy-using localities are being recruited for Wave II in order to improve the match rate, code licensing violations using the VDSS Risk Assessment Matrix, and match child care providers who are participating in state quality improvement efforts to our system to ascertain how many children in subsidy care are currently attending a program in Virginia's QRIS. The team is helping to develop a state Professional Registry to link into Project Child HANDS and is in the process of discussions with administrators at the Virginia Department of Health to incorporate birth records and other health-related data into the system (such as the Birth Defect and Hearing Loss Registries). In the future we hope to include data from Head Start, Virginia's Home Visiting Consortium, and Early Intervention (Part C).

Funding to develop training modules, add the hoped-for additional databases, and conduct policy research analyses is being pursued. Creating a University-state agency policy work group will maximize the system's utility and help generate important questions and conduct analyses with this Project.

Implications for policy/practice
The data system created in the Commonwealth of Virginia will be an example for other states that are similarly decentralized and follow strict privacy guidelines. With individual-level data linked to program-level data across time, we can better evaluate investments and policies.

Implications for research

For more information:
http://www.childhands.org/
Our website includes three research reports that include previous preliminary findings.

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