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Measuring Up: Learning About Improving Equity from Australia's Early Childhood Development Census

Findings from population-based data can fill gaps in our understanding about vulnerable populations and identify community strengths to help support the development of all children.

Australia is the only country in the world that regularly collects comprehensive information about the holistic development of every child entering the first year of school. This information, gathered through the Australian Early Development Census (AEDC), guides national and state policy and informs program development. Overall the data from 2009, 2012, and 2015 show reductions in children's developmental vulnerability, especially among children from Australia's Aboriginal and Torres Strait Islander population, a group that has historically faced health, education, and well-being inequalities. The story of how the AEDC was adapted from the Early Development Instrument (EDI) developed in Canada and adopted by the Australian Government is useful for the United States. It can inform current discussions of equity and the role population-based measures can play in policy and community discussions about funding and service allocation. Findings from population-based research data can fill gaps in our understanding about vulnerable populations and identify community strengths to help support the development of all children. Examples of similar efforts in the United States using the EDI and related measures provide additional context for an ongoing discussion of the potential of population-based measures for informing policy and practice.

CANADIAN ORIGINS OF THE AUSTRALIAN EARLY DEVELOPMENT CENSUS

In the mid-1990s, early childhood policymakers, educators, community service providers, and researchers were focused on the idea of "school readiness." In some countries, early learning standards or definitions of readiness provided a broad vision for children's learning and outcomes for all children that included physical health as well as cognitive and social and emotional development (for example, the National Education Goals Panel 1997). In Canada, findings from neuropsychology about the importance of children's brain development together with recommendations from a national study on the state of early childhood by Fraser Mustard and Margaret McCain fueled the momentum to support development of a population-based measure of "children's brain development" (Offord Centre for Child Studies, accessed August 30, 2018).

Fraser Mustard's influential appointment as Australia's "Thinker in Residence." In October 2006, Fraser Mustard of McMaster University accepted the invitation of the future South Australian premier for a state-sponsored South Australia Thinker in Residence position at the University of Adelaide. Mustard was a renowned physician and international leader in the study of what he called the science of "early human development." An influential champion for children and for making policy and programmatic changes to reduce inequities in outcomes, Mustard used part of his time in Australia to make the case for government investment in population-based measurement of children's development using an Australian version of the EDI (Silburn et al. 2007).

In the late 1990s, Dan Offord and Magdalena Janus of the Offord Centre, McMaster University, in collaboration with national, provincial, and community stakeholders, led the development and testing of a teacher reported measure that became the Early Development Instrument (EDI): A Population-Based Measure for Communities (Janus and Offord 2000; Offord Centre for Child Studies, accessed August 30, 2018). The Offord Centre has supported EDI research, implementation, and interpretation in all but one province in Canada. Many provinces administer the EDI on a regular schedule to all of the children in their first year of school (at about age 5) and use the data (including geographic mapping of where children did well and where they did not) to guide early childhood programming and address systemic barriers to better and more equitable readiness for school. At the start of the 2017/2018 school year, more than 1.2 million children across Canada were included in the EDI data system. The Offord Centre has worked with more than 30 countries to adapt and use the EDI.

HOW THE "DUCKS LINED UP" FOR DEVELOPING AND SCALING THE AEDC

Six key events in the early 2000s set the stage for adaptation of the EDI and national implementation of the resulting AEDC in 2009 (Brinkman 2015; Australian Government, accessed November 1, 2018).

1. In 2002–2003, a local health district in Western Australia was interested in relocating nursing and mental health services to meet changing population needs, but there were limited data to guide decisions. In response, the regional Department of Health in Perth, in collaboration with Telethon Kids Institute, began piloting the EDI.
2. Independently, two research teams (the Centre for Community Child Health and the Telethon Kids Institute) identified the EDI as a potential solution for the tracking of children's development and well-being.
3. In the early and mid-2000s, government officials and other stakeholders welcomed visits to Australia by influential thinkers focused on the use of data on early childhood development as a pathway to better child outcomes and greater equity. Visitors included EDI developers and implementers Magdalena Janus and Clyde Hertzman and early childhood experts Fraser Mustard and James Heckman.
4. During the mid-2000s, government officials, leaders of philanthropic organizations, and researchers were focused on early childhood development as central to Australia's policy and programmatic goals.
5. From 2004 to 2007, funding to pilot the "Australian version of the EDI (AvEDI)" in 60 communities (70,000 children) provided the Centre for Community Child Health and Telethon Kids Institute the first opportunity to gather data and establish reliability and validity of the AvEDI on a large scale.
6. Following piloting and political advocacy in 2007, the Australian Government committed to conducting the 2009 census using the AvEDI.

What Is the Early Development Instrument, and How Is the Australian Early Development Census Different?

EDI

- The EDI is a teacher reported measure completed in the first year of children's schooling.
- The EDI includes 103 items in five domains, and it takes about 20 minutes for teachers to complete an EDI for a child. Additional items provide demographic information, early care history (whether the child was in non-parental care before school entry and of what type) and identification of any special concerns (for example, speech impairments or chronic medical/health issues).
- The five domains are: (1) physical health and well-being, (2) social competence, (3) emotional maturity, (4) language and cognitive development, and (5) communication skills and general knowledge.
- Ratings for some items within a domain are on a 3-point scale (for example, if the child's ability to take part in imaginative play is very good/good, average, or poor/very poor). Others are rated yes or no (for example, whether the child is able to recognize geometric shapes).
- Summary scores in each domain reflect whether children are developmentally on track (the 25th through the 99th percentile), developmentally at risk (the 10th through the 25th percentile), or developmentally vulnerable (below the 10th percentile). The proportion of children in each of these categories, as well as the average number of vulnerabilities across the five domains, are two population-level measures of risk for child outcomes in a specific geographic area.

AEDC

- Originally referred to as the Australian EDI (AEDI), the government changed the name of the program to the Australian Early Development Census (AEDC).
- One of the five AEDC domains has a slightly different name in the EDI than in the AEDC: language and cognitive skills (school based) rather than language and cognitive development (Exhibit 1).
- The national domain cutoffs are based on the 2009 data from the first country-wide administration.
- AEDC validity and reliability studies, research on the instrument with populations from different backgrounds, and expert input informed adaptations of the instrument to best fit the Australian context. As a result, the AvEDI has 96 items.

Exhibit 1. AEDC Domain Descriptions

Physical health and well-being	Social competence	Emotional maturity	Language and cognitive skills (school based)	Communication skills and general knowledge
Children's physical readiness for the school day, physical independence and gross and fine motor skills.	Children's overall social competence, responsibility, and respect, approach to learning and readiness to explore new things.	Children's pro-social and helping behaviors, and absence of anxious and fearful behavior, aggresive behavior, and hyperactivity and inattention.	Children's basic literacy, interest in literacy, numeracy and memory, advanced literacy, and basic numeracy.	Children's communication skills and general knowledge based on broad developmental competencies and skills measured in the school context.

TRIENNIAL IMPLEMENTATION OF THE AEDC

Following the successful implementation of the 2009 national AEDC rollout, the Australian Government committed to fielding it every three years. During each administration, adjustments enhanced operations, data collection, and use of the data by policymakers and program implementers across the states and territories. Highlights of implementation by data collection round include:

- 2012 marked the full ownership of the AEDC by the Australian Government. Previously, funding and support for implementation included a cooperating group of stakeholders and researchers. By setting up contracts with other entities for each component of the data collection and support, the government planned and led implementation. To support implementation, the central platform for collecting, storing, and analyzing the data was enhanced to meet the growing needs of users. The government commitment and centralization in 2012 signaled to state/territory and local users that that they could rely on the AEDC as a tool for improving policy, programs, and practice.
- Successes in 2015 included completion of the AEDC for 97 percent of children (16,968 teachers in 7,510 schools completed the AEDC on about 302,003 children). The demographics and circumstances of the children with a completed report included 6 percent Aboriginal and Torres Strait Islander children, 15 percent with English as a second language, 5 percent with special needs, and 12 percent requiring further assessment. On average, children were about 5 years and 7 months old. Overall, from 2009 to 2015, the proportion of children rated as vulnerable decreased (Department of Education and Training 2016).
- In August of 2018, the fourth round of AEDC data collection ended. The 2018 data and results will be available to communities and state/territory governments in March of 2019.

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The Australian Government works with the Centre for Community Child Health and the Telethon Kids Institute to administer and support the AEDC. Total cost of the 2018 round of AEDC data collection and all three years of supports (including relief teachers who provide participating teachers with time to complete assessments on the children in their class) is approximately $25 million AUD (about $18 million US). This includes support services (for example, training and research support) to 8 AEDC state and territory coordinators and their staff across Australia to help local and state/territory implementation and use of the data. The state and territory coordinators work with school systems to coordinate the AEDC collection. They also support stakeholders in government and communities as they integrate AEDC data in their planning. For children from an Aboriginal and/or Torres Strait Islander background, teachers are encouraged to work with a cultural consultant when completing the EDI to ensure they apply a cultural lens to teacher observations of the child. This is one way the Australian Government ensures that administration accurately reflects the capabilities of children from historically marginalized communities.

LESSONS FOR THE UNITED STATES FROM A LEARNING EXCHANGE

In 2018, Telethon Kids Institute and the Australian Government hosted a learning exchange focused on drawing implementation lessons for the United States about the AEDC. The delegation included six early childhood leaders from the United States (participants included researchers, national providers of supports for high quality early childhood services, and the director of a school district's implementation of the EDI). The group attended the March 2018 National AEDC Conference in Melbourne and visited government leaders, two Children's Centres, and one Home Instruction for Parents of Preschool Youngsters (HIPPY) program in Adelaide. In September, a team from Telethon Kids Institute visited Canada, the United States, and the United Kingdom to learn more about the types of approaches taken across the world for supporting families in the early years. The aim was to bring an understanding of the international context to their work in Australia. The team visited members of the Learning Exchange in Oakland, Chicago, and Princeton and participated in a national webinar on lessons learned for the United States.[1]

Overall lessons. Learning Exchange participants drew five key lessons about the AEDC for the United States. These are consistent with some of the points made by the team that holds the license for the EDI in the United States.

On this page:

[1] https://www.mathematica-mpr.com/events/measuring-up-equity-lessons-from-australias-early-childhood-development-census

"The data in Australia builds over time with people continually learning how they connect to it. There is a level of buy-in and clarity that comes from seeing data in regular intervals even years apart, similar to our Census data. This allows development of a better understanding of the bigger picture and supports a culture of data use. Most people have moved beyond simply questioning the value of the data itself, instead they are looking at how to see themselves in it, how what they are doing fits in, and questioning how to improve their practice."

Pat Bowie
UCLA Center for Healthier Children, Families & Communities

March 2018 Learning Exchange Delegate

1. **Long and intensive groundwork is required to demonstrate the utility of the measure.** This work sparks stakeholder interest and provides the legitimacy for increased funding and scaling up of population-based measurement of children's development.
2. **A common tool is useful for identifying strengths and gaps at all levels of the service delivery system.** Use of the same measure across communities and states/territories provided comparability.
3. **External and internal champions fuel momentum.** Key stakeholder and leader buy-in within and outside of the federal and state/territory governments increased interest and investment critical to scaling.
4. **Local ownership fuels action and decision making.** Establishing supports for local use of the data to inform municipal and local community decision making is critical to success. Repeated administration and data return created additional demand for the data at the local level as its utility became clear to stakeholders and program managers.
5. **Government leadership and ownership is key to sustainability.** The transition of ownership of the effort to government signals endorsement and expectations for repeated investment that support stakeholder engagement with the data. Given that there is a significant investment of time on the part of community and program leaders to understand and disseminate findings, this is key to buy-in and sustainability.

Policy, advocacy, and research lessons. Three key lessons inform use of population-based measurement.

1. **Repeated community-level measurement over time provides tools for policy advocacy and research.** The AEDC data track the status of children from each school community across time. Stakeholders can use the results to make the case for increased investment or changes to the mix of services offered to families.
2. **The language used to talk about children's development (on track, at risk, vulnerable) matters.** These terms resonate because they reduce an "us versus them" mindset. The data show that there are vulnerable children in all communities, and more vulnerabilities are associated with worse outcomes.
3. **Population-based data provide a basis for answering and generating a wide range of questions.** Stakeholders can work together to interpret the results and predict how policy changes may decrease or increase the proportion of children developmentally "at risk" or "vulnerable."

Members of the March 2018 Learning Exchange from the United States

Christie Anderson: Executive Director of Early Learning, Oakland Unified School District

Kimberly Boller: Senior Fellow, Mathematica Policy Research

Patricia Bowie: Senior Fellow, UCLA Center for Healthier Children, Families and Communities

Kaela Byers: Researcher, Chapin Hall at the University of Chicago

Debi Mathias: Deputy Director, Quality Rating and Improvement System (QRIS) Learning Network, BUILD Initiative

Jill Sells: Consultant and former Clinical Director of Early Childhood Initiatives, National Institute for Children's Health Quality

Members of the September 2018 Learning Exchange from Australia

Elizabeth Button: Research Assistant, Fraser Mustard Centre

Yasmin Harman-Smith: Deputy Director, Child, Health, Development and Education, Telethon Kids Institute (inclusive of the Fraser Mustard Centre)

Ashleigh Wilson: Research Assistant, Fraser Mustard Centre

The EDI in the United States

In the United States, the Center for Healthier Children, Families & Communities at the University of California, Los Angeles (UCLA) holds a license with the Offord Centre that has brought the EDI to more than 75 communities. The first U.S. pilot was conducted in Orange County in 2009 and the EDI grew from there. The UCLA team helps communities learn how the EDI can be useful for understanding children's development within the context of existing neighborhoods, schools, and systems. The Center helps stakeholders plan for using the data to build on strengths and address long-standing challenges. The UCLA Center leads the Transforming Early Childhood Community Systems National Learning Network (Center for Healthier Children, Families & Community, accessed August 30, 2018), a vibrant group of 74 sites (personal communication with E. Aguilar October 5, 2018) using the EDI that learn from one another how to leverage the data over time with support from community organizations, local and state government, and foundations.

Adaptation for Use in International Household Surveys

The United Nations Children's Fund (UNICEF) worked with the Offord Centre and a number of countries to develop and pilot a 10-item household survey version of the EDI. UNICEF offered to include the Early Development Index in the Multiple Indicator Cluster Surveys (MICS) 4 (2009 to 2012) and 5 (2013 to 2016) and the Demographic and Health Surveys. The 10-item version assesses development of children from 36 to 59 months in four domains (literacy-numeracy, physical development, social-emotional, and approaches to learning). Studies find this shortened version is correlated as expected with other measures of children's development and well-being and is useful for assessing population-level outcomes in low- and middle-income countries. Noted gaps include the lack of a measure of the development of infants and toddlers, but others are working on that measure. As of 2017, plans for the MICS5 were underway with a specific focus on tracking progress in early childhood on the Sustainable Development Goals.

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CONTACT INFORMATION

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