RESTACKING THE ODDS

SUPPORTING DATA-INFORMED DECISION MAKING IN EARLY CHILDHOOD EDUCATION AND CARE

Key messages

- High-quality early childhood education and care (ECEC) supports children to get the best start in life
- Services need reliable ways to know if their programs are high quality and if children are attending enough to benefit
- Consistent, timely and accurate data is essential to improving access, participation and quality in ECEC
- To support data use, services need a strong data culture, investment and staff training

Timely data enables ECEC services to make informed decisions and drive equitable outcomes for children and families.

October 2025

murdoch children's research institute

SVA innovators for good

BAIN & COMPANY

High-quality early childhood education and care (ECEC) is crucial for children's development in the early years – supporting school-readiness and long-term health and wellbeing. Children who attend preschool are less likely to have developmental vulnerabilities, such as problems with language, cognition and social competence.[1]

To improve children's access to and participation in high-quality ECEC, service providers and policymakers need timely and accurate data about the drivers of good outcomes, including: quantity (are there enough services available?), quality (are they high quality?), and participation (are children and families accessing them enough to benefit?).[2]

Limited understanding about what data to measure, inadequate data infrastructure and a lack of motivating factors make it difficult for ECEC services to use data for decision making. Building the capacity of ECEC practitioners to routinely use data would allow them to take more effective actions to enhance service quality and increase child participation.

Why collect and use lead indicator data?

Currently, many children in Australia are missing out on the high-quality ECEC that they need to thrive – particularly children from priority groups*, who often have less access to, and lower rates of participation in, high-quality ECEC.[3–5]

Lead indicator data (for example, the proportion of all children attending ECEC for 15 hours or more per week) provide early signals of progress toward an outcome. This makes lead indicators a valuable tool to guide continuous improvement efforts, enabling ECEC providers to make timely and evidence-informed adjustments. With lead indicator data like those shown in Figure 1, ECEC providers are better placed to ensure that families can access and participate in programs that support children's health, development and wellbeing. **See the full RSTO lead indicator guide here**.

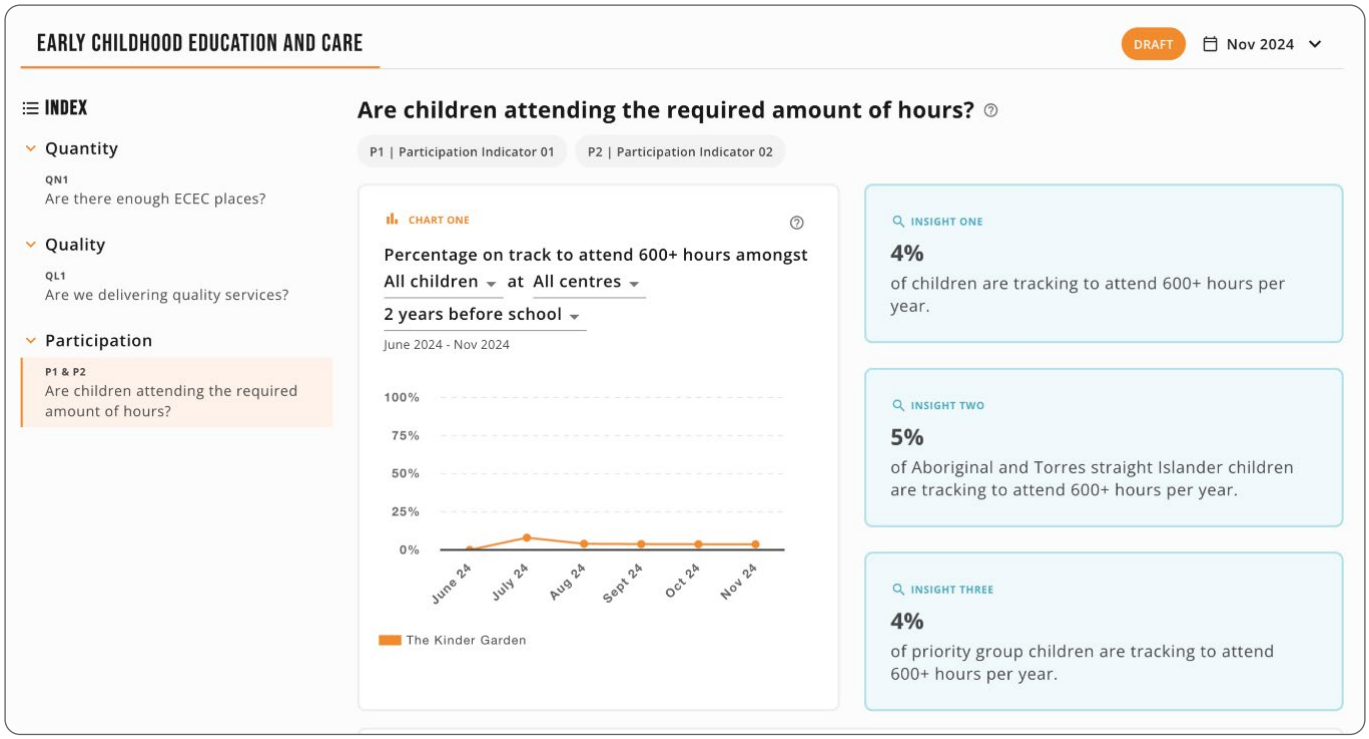

Figure 1. Participation data for an early childhood education and care centre on the RSTO dashboard

* Families disproportionately impacted by inequity due to factors including education, employment status, income and ethnicity.

What did we find?

This study explored the barriers and enablers to collecting, reporting and using evidence-informed lead indicators for decision making in Australian ECEC services. 15 ECEC staff and managers from 10 ECEC services, in 3 states, were interviewed. The barriers and enablers to data-informed decision making that were identified aligned with the 3 core components of the COM-B behaviour change model: capability, opportunity and motivation.[6]

Capability

Capability to undertake a particular behaviour is determined by an individual's knowledge, skills and abilities.[6] Interviews uncovered gaps in knowledge and skills – in particular, a general lack of awareness about what the 'right' data is to collect. Interviewees also noted a limited understanding of the data systems and reports used by their organisations, highlighting a need for staff with stronger data interpretation skills. Additionally, knowing how to use data systems was identified as an important facilitator of ensuring data quality.

> 'I think the biggest barrier is probably the knowledge of how to do it [data collection] right, and how you even do that in the system'
>
> Interviewee

Opportunity

The opportunity to engage in data-informed decision making is dependent on external physical or social factors.[6] ECEC interviewees encountered data systems and process barriers that limited data availability, access and quality. Data systems were described as expensive, clunky and inefficient. Problems with data quality related to accuracy, completeness, consistency and timeliness. Interviews suggest a need for practical, user-friendly data collection tools and applications that provide real-time help with efficiency and decision making.

The need for appropriate training and opportunities to engage in data collection and use were also noted. Time 'off the floor' protected specifically for data collection and use was similarly identified as an important enabler.

> 'If we can't draw that [essential demographic] information, then we can't know if what we're doing is working or benefitting families'
>
> Interviewee

Motivation

Internal processes that motivate behaviour can be automatic (without 'thinking') or reflective (after some deliberation).[6] As such, data-informed decision making can be influenced by an individual's social or professional role and identity, their beliefs about the consequences of data use, and their goals. Interviewees indicated that motivation to collect and use data for decision making was undermined by several factors, including pressure on staff resources, a poor data culture and a lack of trust. Some noted that as leaders, they were inundated with paperwork and unable to provide mentorship for data use. This diminished staff views of data use as an important part of their professional identity. Motivation was also undermined by a fear that measuring and sharing data could result in losses to funding and resources. However, motivation increased when staff understood the rationale for collecting and using data. Demonstrating the value of data and subsequent benefits to families and workers was considered essential.

> 'It comes down to creating a whole job to collect the data, whereas I'd rather have someone on the floor delivering services to children'
>
> Interviewee

What does this mean?

Implications for policy and practice

When ECEC services and policymakers use the right data effectively, they are better placed to make informed decisions that ensure children can access and participate in high-quality ECEC. This will lead to better outcomes for children and families.

Barriers that hinder the capability, opportunity and motivation of ECEC services to use data for decision making could be reduced by:

1. national adoption of consistent evidence-informed lead indicators
2. substantive investment in data systems, processes and training to support routine data use, including the establishment of communities of practice
3. sufficient and sustainable funding to facilitate data sharing
4. embedding lead indicator use into funding deliverables through policy changes
5. communicating the benefit of using evidence-informed lead indicator data.

Embedding the use of lead indicators into routine practice will require multifaceted interventions that build workforce capability, increase opportunities to collaboratively engage in data-informed decision making and increase motivation.

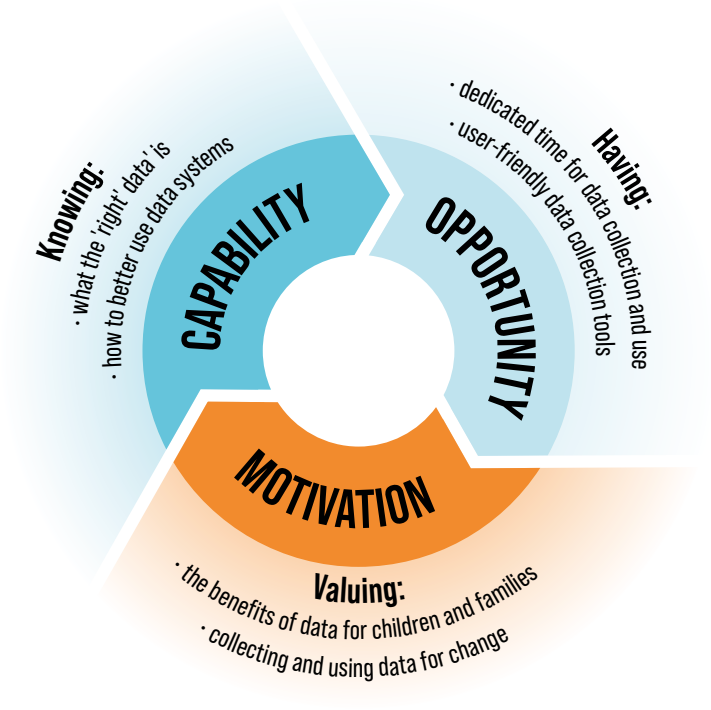

Figure 2. Enablers of data-informed decision making

For further information

Sherker, S., Villanueva, K., Beatson, R., Macmillan, C.M., Lee, W.Y., Hilton, O., Molloy, C., & Goldfeld, S. (2025). Barriers and facilitators to data-based decision making in Australian early childhood education and care: A qualitative study. *Social Sciences & Humanities Open*. **https://doi.org/10.1016/j.ssaho.2025.101285**

Suggested citation

Restacking the Odds (2025) Supporting data-informed decision making in Early Childhood Education and Care. Research Snapshot. The Centre for Community Child Health at The Royal Children's Hospital and Murdoch Children's Research Institute Parkville, Australia. **https://doi.org/10.25374/MCRI.30362533**

References

1. Goldfeld, S., O'Connor, E., O'Connor, M., Sayers, M., Moore, T., Kvalsvig, A., & Brinkman, S. (2016). The role of preschool in promoting children's healthy development: Evidence from an Australian population cohort. *Early Childhood Research Quarterly*, 35. https://doi.org/10.1016/j.ecresq.2015.11.001

2. Molloy, C., Perini, N., Harrop, C., Goldfeld, S. (2025) Evidence-based lead indicators to drive equitable early years services: Findings from the Restacking the Odds study. Child Indicators Research. https://doi.org/10.1007/s12187-025-10215-z

3. Cloney, D., Cleveland, G., Hattie, J., & Tayler, C. (2016) Variations in the availability and quality of early childhood education and care by socioeconomic status of neighborhoods, *Early Education and Development*, 27(3), 384–401. https://doi.org/10.1080/10409289.2015.1076674

4. Hurley, P., Matthews, H., & Pennicuik, S. (2022). Deserts and oases: How accessible is childcare? Mitchell Institute, Victoria University, Melbourne.

5. Molloy, C., O'Connor, M., Guo, S., Lin, C., Harrop, C., Perini, N., & Goldfeld, S. (2019). Potential of 'stacking' early childhood interventions to reduce inequities in learning outcomes. J Epidemiol Community Health, 73(12), 1078-1086. https://doi.org/10.1136/jech-2019-212282

6. Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*, 6(1), 1-12.

7. Molloy, C., Moore, T., O'Connor, M., Villanueva, K., West, S., & Goldfeld, S. (2021). A Novel 3-Part Approach to Tackle the Problem of Health Inequities in Early Childhood. Acad Pediatr, 21(2), 236-243. https://doi.org/10.1016/j.acap.2020.12.005

RESTACKING THE ODDS

RSTO is a collaboration between the Centre for Community Child Health at the Murdoch Children's Research Institute, Bain & Company, and Social Ventures Australia.

For information about the study or RSTO

Email: restackingtheodds@mcri.edu.au
Visit: www.rsto.org.au

The Centre for Community Child Health

The Royal Children's Hospital Melbourne
50 Flemington Road
Parkville 3052 VIC, Australia

LinkedIn: CCCH
ccch.org.au

The Centre for Community Child Health is a department of The Royal Children's Hospital and a research group of the Murdoch Children's Research Institute.

We acknowledge the Traditional Owners of the land on which we work and pay our respect to Elders past, present and emerging.