

Beyond Integrated Data System Design: Ensuring Mature Systems Address Information Gaps in Policy

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How can we most effectively identify research and data needs for policy?

Over the last decades, tremendous growth in administrative data infrastructure, integrated data systems, learning agendas, and policy-focused analytics teams has removed many barriers to using data and evidence to drive policy. Published data, reports, and analyses are widespread. But decision-makers sometimes still feel they are lacking necessary information. This brief summarizes lessons learned from one effort to address this gap in the Chicago early childhood community (see inset).

When the project team began this effort, we suspected that the disconnect between published reports and the lack of information decision-makers expressed reflected either communication problems or differences in definitions. On the communications side, perhaps reports were not reaching or accessible to the right individuals. On the definitions side, perhaps reports didn't include the subpopulations or characteristics of most interest, or they lacked the necessary specificity in geography or time.

What we found, however, was that the defined use cases were functioning as proxies for more complex underlying information needs that were incompletely addressed by existing data. By investing in time and capacity to explore these needs with decision-makers, our project identified [simple, actionable items to improve the information landscape](#) that were not called out in the original use cases. We also identified areas where the missing information was more complex than what could be addressed as descriptive metrics calculated with available data, suggesting opportunities



About the Project

The Chicago Early Childhood Integrated Data System (CECIDS) team, together with researchers from NORC at the University of Chicago (NORC), set out to refine the early childhood research and data needs of CECIDS stakeholders, a group that includes program managers, city leaders, advocates, and funders in summer 2025.

At this time, CECIDS was a mature integrated data system, bringing together data from 5 large early childhood providers, the city of Chicago, and Chicago Public Schools. This project focused on refining a series of use cases focused on population and enrollment that were originally defined and prioritized by the CECIDS Executive Committee in fall of 2023 and reaffirmed by the Committee in August 2025. For more detail about the specific use cases and findings of this effort see our [findings brief](#).

Early childhood is an especially challenging area for leveraging data because of the many overlapping programs, definitions, and systems that encompass this space. This complexity made the domain a particularly good area to do this work. However, we believe our lessons learned are applicable to efforts attempting to use data in other domains as well.

where longer-term engagement and more extensive study design is needed.

Our experience highlights the need for continued iteration on data and information needs, as questions and information availability evolve. It also demonstrates that integrated data systems are at their most valuable when they provide infrastructure not only for descriptive analytics but also to support more traditional pilot and research projects tackling more complex questions. Defining use cases, a technique borrowed from the software engineering world to describe one of the ways a product is intended to be used, can help make integrated data system design more responsive to the needs of decision-makers. However, this strategy should be one of multiple tools the public and nonprofit sectors use to articulate what we need to know to inform policy and programs.

In this brief we report on the strategies that were most effective throughout our engagement with the CECIDS community and recommend some best practices for getting clarity about what information decision-makers need. Our process included a review of existing reports and dashboards, individual meetings with CECIDS partner organizations, and co-interpretation of findings with both the research and data communities and small groups from the CECIDS community. A [corresponding toolkit](#) provides more specifics about our approach and includes protocols and other templates for anyone seeking to replicate the process.

Our Approach and Lessons Learned

Information needs, not data needs. Decision-makers need evidence, which is richer than metrics alone. Evidence incorporates trends over time and relationships across data points; it is informed by an understanding of the gaps and biases that data may reflect and by the best possible information (such as from qualitative or survey data collection) to contextualize those gaps. The process of translating the need for information or evidence into a data ask can be challenging in its own right; starting with information needs rather than data needs helps avoid discrepancies between what's needed and what's requested.

Clarity, clarity, clarity. People often used the same words or phrases while meaning different things. Our approach emphasized probing wherever possible to clarify definitions, subgroups, calculations, and time frames. When someone mentioned needing a “unique count” of children served, what programs, geographies, time frames, and age groups were they thinking about? How did that count need to be subset? Was this a one-time ask or a need for regularly updated information? These conversations illuminated how similar sounding asks might be very different, or where the item being requested wasn't exactly the information needed.

Focus on what's actionable. We encouraged individuals looking for information to say exactly how they meant to use the results and how different results might change their plans or decisions. One helpful technique in this space is to consider a world in which the answer is known: “If the frequency of participation for this population was 14%, what would you do with that information? How would you behave differently if the frequency of participation was 60%?” For the most actionable information, the difference in behavior based on starkly different metrics is clear. When the information is not yet defined in an actionable way, next steps are murkier.

Acknowledge ambiguity. Our focus on clarity and actionability had the unexpected effect of making obvious the questions that were important but were neither clear nor actionable. For example, “Why are

programs underenrolled?” clearly speaks to an important information need. But it’s not yet developed as an actionable descriptive analysis. We identified these complex motivating questions as “North Star Questions.” It is tempting to set these kinds of questions aside as “too big” or “not specified”, or to attempt to pin them down as a more specific subquestion to facilitate answering them. But these approaches create the kind of disconnect we saw at the beginning of our project. In fact, these motivating questions should be the starting point for new thinking and longer term investments, designing new pilots or studies that could provide key evidence to the field.

Consider return on investment. In a vacuum, improved data is always a benefit. But in reality, data improvements come with opportunity cost in other areas. When asked to directly weigh those opportunity costs, individuals’ priorities often shifted. This focus was particularly valuable in assessing requests to make currently available numbers more specific, precise, or timely. In many cases when we asked how improved numbers would change practice or where current data were insufficient, the answer we got was that individuals mostly felt that improvements in accuracy or timeliness would have little impact on decision-making.

Explore data and methods, but do not let them drive design. We asked the CECIDS community to tell us about their information needs without worry about how those needs would be met—but then we also asked them to tell us their best ideas for meeting the needs. Thinking about available data and possible methods sometimes helped respondents to think through the specifics of what they would need. At the same time, this thinking could be limiting—causing us to focus on rehashing existing approaches rather than rethinking information needs in new ways. As with other areas of our process, iteration across conversations allowed us to benefit from both approaches at different times.

Let people speak to what they know, not what their role says they do. In practical terms, individuals who know the early childhood field usually have a diverse understanding, cutting across policy and process, data, and methods. Assuming that only program managers can speak to programs, only technologists can speak to data, and only researchers can speak to methods shortchanges the depth of individuals’ expertise and ignores the fact that individuals often move across roles or organizations. Having a diversity of roles involved in these conversation is crucial but restricting to role-based requests risks losing important insights. While we adapted some questions by audience, we tried to create space to allow for overlap in what people know and to solicit everyone’s best thinking across topics.

Prioritize dialogue and iteration. Our process involved a series of conversations, one-on-one or in targeted small groups. By keeping our conversations small, we allowed the space to dig in on specifics, clarity, and actionability in a way that simply isn’t possible in committees or convenings. We had repeated waves of conversations with different partners, facilitating a kind of extended dialogue. We translated across conversations to make sure everyone was using consistent language, and we repeatedly reflected back to respondents what we heard them say to give them chances to adapt or react. We also reflected how others were responding and created space for reactions to that feedback. Our iterative cycle meant respondents had time for their thinking to continue to develop and evolve between conversations. While this iteration required a time investment for participants, it yielded depth and clarity that would not have been possible with a single engagement.

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