Calculating Reach
Guidance for the National Collaborative for Infants and Toddlers

The National Collaborative for Infants and Toddlers (NCIT) is committed to advancing policies and programs to ensure that all families have the support they need to provide young children with a strong foundation for success in school and life. Our collective goal is to expand access to high-quality services for 1 million infants and toddlers by 2023 so they are on track developmentally by age 3 and ready for school, assuring the following:

- Healthy Beginnings
- Supported Families
- High Quality Child Care and Learning

To achieve this collective goal, participants in the Collaborative need to be able to estimate how many children currently are and will be reached through the NCIT over the years. The method for estimating the number of children reached as a result of the Collaborative will be based on the PN-3 Outcomes Framework. There are three levels within this framework, and indicators within each of these levels:

- Prenatal-to-Three Systems
- Prenatal-to-Three Program and Policy Expansion
- Child and Family Outcomes

What is reach and why is it important?

Reach is defined as the number of children and families affected by the expansion of or changes to services designed to support their well-being. For example, the number of children receiving early intervention services reflects the number currently reached. Changes in that number across five years show how many more children were reached because of PN-3 efforts.

For the NCIT to pinpoint progress geared toward getting 1 million infants and toddlers on track for school readiness, the initiative should calculate the number of young children it is reaching at the baseline (when it started) and over time. Calculating the reach also helps states and communities determine who is and is not receiving services, and how to modify or expand efforts to reach all infants and toddlers. In this way, reach calculations serve as an important data point for monitoring the Collaborative's progress overall and its work in participating states and communities. Calculating reach also helps identify disparities and opportunities to promote equity.

Reach calculations are based on two key ingredients:

- The definition of and calculation guidance for each indicator (found in the NCIT Data Guidebook). For example, the indicator Increase in Children Receiving Developmental

Screening and Referral contains two data points that must be tracked. This indicator is defined in the guidebook as follows:

- "The screening portion of this indicator, measured at the child-level, can be calculated as the percentage of children ages 9 months to 35 months, who received a developmental screening using a parent-completed screening tool in the past year."

- "The referral portion of the indicator, measured at the child-level, can be calculated as the percentage of screened infants and toddlers (age 0–3) who received a referral to a comprehensive assessment based on the screening results."

- *The details of each state's and community's data system (breadth, depth, quality of the data).* For instance, data on the developmental screening portion of the indicator defined above may be garnered from health care providers, or via a parent-report. Data may represent the entire population of infants and toddlers in a community or be focused on a particular subgroup. In addition, data may only be available for a subset of the population. All slightly alter interpretations of the reach calculations. In all cases, the data used in the reach calculations should be error-free and appropriate for the indicator being calculated.

Here are important points to note about calculating reach:

- Reach calculations are designed to support a state and community in monitoring specific indicators such as the number of children served by a program or initiative, or the number of children displaying healthy outcomes or in healthy environments. For more information on indicators, please refer to the NCIT Data Guidebook. Reach calculations can indicate when there is a change in the number of children and families affected by services; they must also indicate why those changes have taken place. That is, a change in an indicator cannot necessarily be attributed as a result of any specific service, program or initiative within a larger system.

- Reach calculations are useful for evaluating whether an initiative is promoting equity. Analyze reach using key demographic factors, including race/ethnicity, family income, location, and other sociodemographic factors that may be of interest to individual communities. This will help determine who is and is not being reached.

- Children can also be reached indirectly by initiatives, programs and services. For example, a community initiative that focuses on professional development to support teachers and caregivers in improving social-emotional development has an indirect impact on the children they serve. Additionally, those teachers and caregivers will teach other young children who will benefit from their improved skills. While the NCIT is focused on the number of infants and toddlers who have been directly reached, the initiatives can also have indirect and important impacts on families, caregivers and communities around them.

- Reach calculations should be updated at least once a year.

- System change takes time, and PN-3 strategies can differ in the length and investment of time and resources needed to move toward full implementation. States and communities may launch new strategies but might not see any changes in reach for some time, but then suddenly see a surge in positive outcomes.

- The calculations include the total numbers served or demonstrating the indicator, as well as change in reach over time. They also include the numbers reached and the percentage reached as a fraction of the total target population.

Using reach calculations

Principally, reach calculations allow each state, community and the NCIT to quantify progress geared toward improving the well-being of infants, toddlers, and their families. It is an important metric of success. However, reach calculations also afford two other important opportunities:

- *Understand who is and is not being reached.* When calculating and reporting reach, states and communities should disaggregate their data by sociodemographic factors to determine whether their efforts are reaching at-risk families in their communities. States and communities are encouraged to self-define "at-risk" and analyze data across multiple subgroups. Disparities can change and emerge over time, which is why it is necessary to evaluate the equity of the initiative's reach at least annually.

- *Set achievable targets for subsequent years.* Beginning with baseline data, reach calculations can be used to help set aspirational, yet achievable, reach targets for the next year.

Calculating reach for each indicator
Prenatal-to-Three Systems

In the PN-3 Outcomes Framework, the Systems indicators are foundational and provide infrastructure needed to support work at the Program and Policy Expansion or Child and Family Outcomes levels. It is not possible or appropriate to calculate reach at the Systems level, because the intent of Systems work is to create infrastructure, not direct services. Instead, these Systems level indicators can be thought of as the foundation upon which children and families can be reached. As the Systems become more mature (e.g., secured long-term financing, and/or implementation of a robust and reliable data system), communities will be able to reach more children and families, and more accurately report their reach calculations. The following examples highlight the role of two systems indicators in calculating reach:

- *Data systems.* Although data systems do not directly affect children or families, their characteristics (e.g., what data is included, how is it accessed, when it is reported or available) help define the properties of the reach calculation. That is, calculations of reach at the Program and Policy Expansion and Child and Family Outcomes levels can be conducted more easily if there is a system in place that collects data on those indicators. Therefore, although a state or community will not count how many children were "reached" by a data system, they should consider how such systems can provide more accurate estimates of reach, and how they may support children and families through increased access to services or the use of services. In addition, the characteristics of the data system influence the interpretation of the reach calculation.

- For example, if a community has a data system that collects, integrates or links data from early intervention, home visiting, and Women, Infant and Children (WIC) programs, an estimate can be calculated of the number of children, ages 0–3, who are being served in those programs. States and communities should consider the role of the data system in increasing access to early intervention as a function of the linkage of these three sectors/programs.

- *Coordinated intake and referral.* Like data systems, coordinated intake and referral systems do not directly reach children and families, but are designed to increase the number of children and families receiving services and experiencing positive outcomes.

- States and communities should consider and could calculate the number of children and families being served in specific programs before and after the intake and referral system was established. For instance, a calculation can be made of the number of children enrolled in early intervention services or receiving home services before the system was developed.

Then, the number now enrolled or participating in those services since the system was created could be calculated. These calculations offer insight about how the coordinated intake and referral system indirectly reached children and families.

- The four other systems indicators support impact at the state and community level, and pave the way for changes at the child, family, or Early Childhood Education (ECE) workforce level. Indicators that fall within this category are:

- Coordinated planning and finance

- Political will and engagement

- Continuous quality improvement

- Workforce development

Prenatal-to-Three Program and Policy Expansion

When calculating reach for Program and Policy Expansion indicators, a state or community can estimate the number of infants and toddlers being reached in several ways. It would include children being reached directly (e.g., counting the number who received developmental screenings and referrals). Reach could also include children being reached indirectly through services provided to their family. For example, if a community served 5,000 PN-3 mothers through home visitation services, it would report that it reached both 5,000 mothers and 5,000 children. This section provides recommendations for how to calculate reach for each of the Program and Policy Expansion indicators from the Outcomes Framework, separating them by direct and indirect indicators.

- Direct indicators can be examined at the child-level by obtaining baseline numbers of children and then measuring the change in number of infants and toddlers receiving services or gaining access. For these indicators, use a direct count of the number of children being served or reached in your state or community.

- Children who have access to a medical home; receive regular well child visits

- Children receiving developmental screening and referral

- Indirect indicators are measured at the mother- or caregiver-level instead of at the child level. To estimate reach at the mother or family-level assume **one child** is "reached" for every mother served. If data indicate there is more than one child under age 3 in the family being served, use a different multiplier (e.g., two children per family) to inform your reach numbers.

- Prenatal care

- Families with access to mental health services

- Universal family connection and referral

- Evidence-based home visiting

- Family share of care less than 7 percent of income

- To estimate reach at the caregiver-level, assume **four children** are affected by these indicators for every caregiver served. However, if a state or community has data to inform this calculation, use those numbers instead to inform the calculation of reach.

- Affordable care in settings

- Teachers and caregivers have opportunities to build competencies

- Financial supports provided to caregivers

Child and Family Outcomes

When calculating reach for child and family outcome indicators, a state or community can estimate the number of infants and toddlers in several ways. For example, the amount being reached directly if a community expands a policy to reduce the instances of low birth weight, and the number of children with low birth weight decreases from 1,000 to 500, they would estimate that they reached 500 children. Reach can also be calculated by estimating the number of children being reached by serving parents or caregivers. This section has recommendations for how to calculate reach for each of the *Child and Family Outcomes* indicators, separating them by direct and indirect indicators.

- Direct indicators: These can be examined at the child level by obtaining baseline numbers of children and then measuring the change in number of infants and toddlers receiving services or having certain outcomes, such as a healthy body mass index (BMI).

- Low birth weight

- Pre-term births

- Prenatal exposure to drugs/alcohol/smoking

- Children receive appropriate services through screening

- Children have a healthy BMI

- Children are reported to be in good/excellent health

- Child injuries, death and health issues

- Indirect indicators: These are measured at the mother or caregiver level instead of at the child level.

- The following are measured at the mother level. To estimate reach, assume **one child** is affected by these indicators for every mother served. If data indicate there is more than one child under age 3 per family being served, use a different multiplier (e.g., 2 children per family) and use the data to inform reach calculations.

- Maternal depression

- Parenting stress

- Incidence of abuse and neglect

- The following are measured at the caregiver level. To estimate reach, assume **four children** are affected by these indicators for every caregiver served. However, if the state or community has data to inform this calculation, use those numbers instead to inform reach calculations.

- Children receive warm, responsive caregiving

- Children benefit from regular reading/storytelling

- Children experience caregiver interactions responding to individual needs

- Children experience language-rich environments

Other considerations

The guidance on reach shared in this document reflects the goals of the NCIT, which are to support the well-being of all infants, toddlers, and their families in 29 selected communities and in participating states. The Collaborative also has a focus on reaching at-risk populations, given the

disparities in service provision and outcomes for children from marginalized groups. When calculating reach, consider how many children are reached in the total population, as well as how many are reached in various at-risk subgroups. This means that when calculating the percentage reached, some calculations will use the "total population" of infants and toddlers in the state or community as the denominator, and some will use the subpopulation total as the denominator.

In some cases, complete data will not be available for all infants and toddlers in the state or community. For example, how would reach be calculated for a community that has engaged in a universal strategy to promote reading and positive parent-child relationships? Perhaps, the community knows that there are 4,000 infants and toddlers in the population. Data are available on the number of children who were read to regularly for 2,000 of the 4,000 children. Out of the 2,000, data indicate that 900 were read to regularly. How should reach be calculated in this scenario?

- Calculate and report what is known: Nine hundred out of 2,000 were experiencing this indicator of positive parent-child relationships, which is 45 percent. Additional analysis could be conducted of the data to identify the characteristics of those 900 children and how they differ from the overall group of 2,000.

- Extrapolate when appropriate. Are the 2,000 children you have data on representative of the young children in your community? If so, then it might be the case that approximately 1,800 children experienced regular book-reading, although you only have data for 900. If the 2,000 children you have data on are not representative of the young children in your community, investigate that as a question of equity—why are you missing data on them?

Here to help

This guidance is meant to support initial discussions about what reach is, how to calculate it, and how to use the calculations to inform your work in states and communities. It is not one-size-fits-all advice. It is likely that states and communities will have specific questions about the data or measures used to track indicators, systems that calculate reach, or how to report reach with incomplete data. Child Trends is here to help!

For technical assistance with calculating reach on any indicator at any level, please contact the Child Trends team at NCITSupport@childtrends.org