The Caregiver Reported Early Development Index (CREDI)

Dana Charles McCoy, PhD
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Harvard University
**Sustainable Development Goals** include a new focus on ECD as an important component of the international development agenda

- Increasing number of tools available to track ECD at the population level...
  - PRIDI, ECDI, ECD, IDELA
- ...but relatively little in the 0-3 time frame

**TARGET**
4.2 by 2030 ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
The Caregiver-Reported Early Development Index (CREDI) is designed as a global, population-level measure of ECD for the 0-3 age range.

Principal Investigators: Dana Charles McCoy (Harvard Graduate School of Education) & Günther Fink (Harvard School of Public Health)

Funding from Grand Challenges Canada

Website: sites.sph.harvard.edu/credi
To develop a set of caregiver-reported items that
- capture motor, language & cognition, and socio-emotional development for 0-36mo
- are clear and simple enough to be understood by caregivers and implemented quickly with minimal training
- are “culturally neutral” for global use
- are psychometrically valid/reliable, not subject to social desirability bias

To group these items into
- A brief scale (~20 items) for population-level monitoring
- A long scale (~60 items) for research & evaluation (& screening?)
- A supplemental indicator set for country-specific use

To make all scales, supporting documents, and data freely available via project website
Items asked to primary caregiver
Training takes <1 day
Basic literacy and numeracy is sufficient for administration
149 items across 3 age forms, each with 3 domains:
  - 0-11mo (76 items)
  - 12-23mo (103 items)
  - 24-35mo (95 items)
Total current time = ~20-25 mins (eventually much less)
Yes/no (1/0) response scale with option for “don’t know”

- **Skills/milestones** assessed as “Can the child…”
  - Can the child throw a small ball or rock in a forward direction?

- **Behaviors/traits** assessed as “Does the child…” with embedded frequency anchors
  - Does the child usually follow rules and obey adults?

Examples to concretize skills/behaviors when possible

- Can the child speak using short sentences of two words that go together (e.g., “Mama go” or “Dada eat”)?

In motor domain, pictures used to illustrate concept

- Can the child pick up a small object (e.g., a small toy or small stone) with just his/her thumb and a finger?
## SAMPLE ITEMS

<table>
<thead>
<tr>
<th>Motor Development</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross motor</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Fine motor</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cognitive &amp; Language Development</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive language</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Receptive language</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Problem solving &amp; reasoning</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Literacy/numeracy</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socio-emotional Development</th>
<th>Yes</th>
<th>No</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion Regulation</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Social Competence</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Internalizing</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Externalizing</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Executive Function</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>
Section prompts were included to:
- Explain directions to caregivers
- Improve comfort and reduce social desirability

Now I am going to ask you about the types of things the child is currently able to do. Please answer "yes" or "no" to these questions. If you are unsure, you can also answer "don't know." If the child does not currently do these things, but has in the past, you should answer "yes" to the question. For example, if the child used to crawl but now walks, answer "yes" to crawling. Children learn and grow at different rates, so it is fine if your child can't yet do these things. Some of these skills children only achieve at older ages. If there is any question you feel uncomfortable answering, please let me know and we can move to the next question.

Content of prompts differs by domain
An **item guide** provides detailed explanation of the intent and background of each item

<table>
<thead>
<tr>
<th>QC12</th>
<th>When you talk to the child, does he/she respond by making a sound (e.g., &quot;ba,&quot; &quot;da,&quot; or &quot;do&quot;) or by saying a word?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>When a caregiver is in front of the child talking to him/her, the child often (more than several times per day) makes sounds (e.g., babbling) or talking back in direct response. Sounds such as crying or grunting do not count. This item targets early expressive language and language reciprocity.</td>
</tr>
</tbody>
</table>

**Used for:**
- **Training** of data collectors
- **Translation** (and back-translation)

Small changes can be made to item wording to facilitate meaningful translation, but are not intended to be necessary
1. Creation of conceptual framework (Summer, 2013)
2. Collection of existing tools (Summer, 2013)
3. Selection & development of initial item set (Fall, 2013)
4. Pilot Phase I (18-36mo only; Jan-Oct, 2014)
   • Rural Tanzania
5. Pilot Phase II (June, 2015 - Jan, 2016)
   • Urban Tanzania, Zambia, Brazil, Bangladesh, Laos, United States
6. Pilot Phase III (March-April, 2016)
   • Lebanon, Jordan, Pakistan
7. Pilot Phase IV (June-Sept, 2016)
   • Brazil, Cambodia, Chile, Colombia, Ghana, Guatemala, Hong Kong, Laos, Philippines, United States
8. Public dissemination (end 2016)
VALIDATION PLAN

Data include:
- Quantitative work (all sites)
- Cognitive interviews (6 selected sites)
- Informal feedback from implementation teams (all sites)

Analyses will focus on:
- Reliability across time, rater, respondent, collection format
- Validity relative to direct assessment
- Clarity and understanding of items
- Evidence for social desirability bias
- Ease of translation
- Coverage and cross-cultural/policy relevance
Items to be grouped into **scales** (short and long) and **domains** using factor analysis and item response theory

Items to be ordered by difficulty, with **start/stop rules** for small age bands to reduce assessment burden

Rules to be developed for calculating both **continuous** (average) and **dichotomous** (on versus off track) scores

- Definition of on versus off track must be based on both empirical and conceptual considerations!
## PROS AND CONS

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Pro</th>
<th>Con</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver-Report Format</td>
<td>- Fast, easy, inexpensive</td>
<td>- May be subject to social desirability and other biases</td>
</tr>
<tr>
<td></td>
<td>- Provides insight when direct assessment is not feasible</td>
<td></td>
</tr>
<tr>
<td>Cultural Universality</td>
<td>- Allows comparability</td>
<td>- May be impractical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- May leave out important considerations within a given culture</td>
</tr>
<tr>
<td>Yes/No Format</td>
<td>- Easy to understand for all caregivers</td>
<td>- Provides less information than ordinal scale</td>
</tr>
<tr>
<td></td>
<td>- Easy to score</td>
<td></td>
</tr>
<tr>
<td>“On” vs. “Off Track” Cutoff</td>
<td>- Useful for reporting, interpretability</td>
<td>- Oversimplifies needs of children</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cutoff may be different cross-culturally</td>
</tr>
<tr>
<td>Inclusion of Socio-emotional Skills</td>
<td>- Important facet of ECD and predictive of later outcomes</td>
<td>- Difficult to measure reliably across settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Not milestone based (subject to inputs other than age)</td>
</tr>
</tbody>
</table>
When making or selecting a tool, ensure that items are collectively and individually:

- **Psychometrically sound** (reliable and valid)
- **Conceptually important** (central aspects of ECD and linked with later-life success)
- **Policy relevant** (related to goals of government, organization)

One tool cannot fit all needs!

- CREDI **short scale** should be used for cross-cultural, large-scale monitoring efforts
- CREDI **long scale** should be used for large-scale research of domain-general ECD, ideally *with* a direct assessment tool
- CREDI **supplemental indicator set** should be used to customize either scale for specific cultural needs
- CREDI should *not* be used (yet) as screening tool, measure of specific developmental constructs (e.g., executive function)
Appendix Slides
ITEM CRITERIA

- It represents a **developmentally appropriate, culturally common skill** or behavior of one of the **core ECD domains**
- It can be reported on by a **primary caregiver**
- It is **culturally neutral** (i.e., involves objects, ideas, or terminology that are common across contexts)
- It is **simple in its wording** (i.e., can be understood by those with minimal formal education and easily translated)
- It has the potential to **discriminate between individuals** (i.e., there will be variability in response)
- It is not subject to severe **social desirability**
- In total, items **cover all relevant constructs/domains** **without** being redundant or inefficient
CREDI MATERIALS

- **CREDI Item Set**
  - All items, with information on variable name, age form, domain, reverse coding, and illustration

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Question</th>
<th>Illustration</th>
<th>Reverse Code</th>
<th>Answer</th>
<th>Age range</th>
</tr>
</thead>
<tbody>
<tr>
<td>QM01</td>
<td>Does the child hold his/her hands in fists all the time?</td>
<td></td>
<td></td>
<td>1 Yes 0 No 9 DK</td>
<td>x</td>
</tr>
<tr>
<td>QM02</td>
<td>When held in a sitting position, can the child hold his/her head steady and straight?</td>
<td></td>
<td></td>
<td>1 Yes 0 No 9 DK</td>
<td>x</td>
</tr>
<tr>
<td>QM03</td>
<td>Can the child bring his/her hands together?</td>
<td></td>
<td></td>
<td>1 Yes 0 No 9 DK</td>
<td>x</td>
</tr>
</tbody>
</table>

- **CREDI Users Guide**
  - Project background, instructions for translation, implementation, scoring, etc.

- **CREDI Item Guide**
  - Details on intent behind each item to assist in translation

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<tr>
<th>Item Number</th>
<th>Question</th>
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<tr>
<td>QC12</td>
<td>When you talk to the child, does he/she respond by making a sound (e.g., “ba,” “da,” or “do”) or by saying a word?</td>
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# Domains of Interest

<table>
<thead>
<tr>
<th>Motor</th>
<th>Cognitive</th>
<th>Socioemotional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Fine</td>
<td>1) Expressive language</td>
<td>1) Early executive function &amp; effortful control</td>
</tr>
<tr>
<td>2) Gross</td>
<td>2) Receptive language</td>
<td>2) Emotion regulation</td>
</tr>
<tr>
<td></td>
<td>3) Preacademic skills/knowledge</td>
<td>3) Externalizing symptoms</td>
</tr>
<tr>
<td></td>
<td>4) Reasoning &amp; problem solving</td>
<td>4) Internalizing symptoms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5) Reactivity &amp; soothability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6) Social &amp; emotional competence</td>
</tr>
</tbody>
</table>
MEASURES CONSULTED

- Ages & Stages 3
- Bayley Scales of Infant Development III
- Behavior Rating Inventory of Executive Function
- Child Behavior Checklist
- Child Development Inventory
- Denver Developmental Screening Test
- Developmental Milestones Checklist
- Early Childhood Longitudinal Study – Birth Cohort, 9 or 24mo parent report
- Early Childhood Development Inventory from MICS-4 & UNICEF
- Home Observation for Measurement of the Environment Short Form
- Infant Behavior Questionnaire
- International Guide for Monitoring Child Development
- Kaufman Assessment Battery for Children (KABC)

- Kilifi Developmental Inventory
- Malawi Developmental Assessment Tool
- MacArthur-Bates Communicative Development Inventory
- Parent Rating Scale of Language & Motor Development (Zanzibar)
- Parents’ Evaluation of Developmental Status
- Preschool Self-Regulation Assessment Assessor Report / Leiter
- PRIDI
- Rapid Neurodevelopmental Assessment Instrument (RNDA)
- Strengths & Difficulties Questionnaire
- Vineland Adaptive Behavior Questionnaire
- World Health Organization’s Gross Motor Milestones
• Frances Aboud, McGill University
• Amina Ali, Lancaster University
• Jere Behrman, University of Pennsylvania
• Maureen Black, University of Maryland
• Kim Boller, Mathematica Policy Research
• David Bravo, Universidad de Chile
• Pia Britto, UNICEF
• Claudia Cappa, UNICEF
• Amanda Devercelli, World Bank
• Tarun Dua, WHO
• Melissa Gladstone, University of Liverpool
• Jena Hamadani, ICDDBR
• Magdalena Janus, McMaster University
• Pamela Jervis, Universidad de Chile
• Patricia Kariger, University of California, Berkeley
• Joan Lombardi, Bernard van Leer Foundation
• Sally Grantham-McGregor, University of the West Indies
• Jeff Measelle, University of Oregon
• Lauren Pisani, Save the Children
• Beth Prado, University of California, Davis
• Abbie Raikes, UNESCO
• Nirmala Rao, Hong Kong University
• Jack Shonkoff, Harvard Center on the Developing Child
• Fahmida Tofail, ICDDBR
• Aimee Verdisco, Inter-American Development Bank
• Susan Walker, University of the West Indies
• Hiro Yoshikawa, New York University
• Aisha Yousafzai, Aga Khan University
• Stephanie Zuilkowski, Florida State University
1. ELIMINATING INAPPROPRIATE ITEMS

- **Remove unclear items**
  - Clarity determined primarily by cognitive interviews and % “don’t know” responses, but also from local team feedback

- **Remove items with inadequate variation**
  - Items with floor or ceiling effects can be removed from a particular age range

- **Remove items with poor test-retest reliability**
  - Test-retest reliability tested in subset of sites over 1-2 week period
  - Reliability scored using Kappa and % agreement
2. GROUPING ITEMS INTO SUBSCALES

- Grouping primarily based on **factor analysis**
  - Current list of domains (motor, cognitive, socioemotional) may not be accurate
  - EFA, CFA, and IRT across and within countries to test factor structure and metric invariance
- Subscales tested by demographics to determine **subgroup differences**
  - Scores expected to differ by age, SES, anthropometrics, disability status, wealth, etc.
- Subscales tested for **internal consistency** using Cronbach’s alpha
- Subscales tested for **criterion validity** against existing “gold standard” ECD assessments
  - E.g., correlations with BSID
  - What is “gold standard” varies by country/context
  - Difficulty with finding a “gold standard” in the socio-emotional domain
3. REDUCING TO A SHORT FORM

- Items selected based on their empirical ability to discriminate subscale scores
  - Determined using IRT
- Items also selected based on policy relevance
  - Determined using expert consensus
  - Decisions must be careful, especially given tendency for policies to “teach to the test”
Pilot Sites

<table>
<thead>
<tr>
<th>Sample</th>
<th>Round Number</th>
<th>N</th>
<th>Age Range</th>
<th>Cognitive Interviews?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania - Ifakara</td>
<td>I</td>
<td>2,481</td>
<td>18-36</td>
<td>Y</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>II</td>
<td>280</td>
<td>6-27</td>
<td>N</td>
</tr>
<tr>
<td>Brazil</td>
<td>II</td>
<td>~4,900</td>
<td>24-36</td>
<td>Y</td>
</tr>
<tr>
<td>Laos</td>
<td>II</td>
<td>43</td>
<td>2-36</td>
<td>Y</td>
</tr>
<tr>
<td>Tanzania – Dar es Salaam</td>
<td>II</td>
<td>191</td>
<td>20-36</td>
<td>Y</td>
</tr>
<tr>
<td>United States</td>
<td>II</td>
<td>110</td>
<td>0-36</td>
<td>N</td>
</tr>
<tr>
<td>Zambia – Chipata</td>
<td>II</td>
<td>~500</td>
<td>6-36</td>
<td>N</td>
</tr>
<tr>
<td>Zambia – Choma</td>
<td>II</td>
<td>~500</td>
<td>5-30</td>
<td>N</td>
</tr>
<tr>
<td>Jordan</td>
<td>III</td>
<td>395</td>
<td>0-36</td>
<td>Y</td>
</tr>
<tr>
<td>Lebanon</td>
<td>III</td>
<td>427</td>
<td>0-36</td>
<td>Y</td>
</tr>
<tr>
<td>Pakistan</td>
<td>III</td>
<td>200</td>
<td>0-36</td>
<td>N</td>
</tr>
</tbody>
</table>

Pilot testing (Round IV) underway in Brazil, Chile, Ghana, Laos, Colombia, Guatemala, Philippines, Cambodia, Hong Kong
PILOT I

- **18-36mo only**
- Kilombero region, Tanzania
- Cognitive interviews
  - N=10
- Home visits
  - N=2481 caregiver/child pairs
  - Male field workers, high school ed
  - 70 items, SES, stimulation, anthropometry
- Clinic visits
  - N=1037 (42%)
  - BSID, repetition of 11 items for reliability
Acceptable internal consistency

- Motor alpha = .68
- Cognitive alpha = .90
- Socioemotional alpha = .68

Variable test-retest reliability (n = 11 items tested)

- Kappa range from -.02 (item on impatience, which has been dropped) to .66 (walking)
Relatively robust correlations with (adapted) BSID-III:

- **Motor items**
  - $r = .50$ w/ BSID fine motor
  - $r = .51$ w/ BSID gross motor

- **Cognitive items**
  - $r = .68$ w/ BSID cognitive
  - $r = .69$ w/ BSID receptive comm
  - $r = .73$ w/ BSID expressive comm

- **Socioemotional items**
  - $r = .16$ w/ BSID BOI

Significant score discrimination by age, stimulation, stunting, disability status (not gender)
PILOT I RESULTS: SCORES BY AGE

[Box plots showing scores by age groups: 18-24 mo, 24-30 mo, 30-36 mo.]
PILOT I RESULTS: SCORES BY STIMULATION
PILOT I RESULTS: SCORES BY DISABILITY

The diagram illustrates the distribution of SB Total Score - Home for participants with or without a disability. The box plots show the interquartile range (IQR) and median for each group, with outliers represented as individual points.
PILOT I RESULTS: SCORES BY GENDER
PILOT I RESULTS: ACCEPTABILITY

Did the caregiver **understand** the questions?

Did the caregiver answer the questions **truthfully**?

Motor | Cognitive | Socioemotional
--- | --- | ---
No, not at all | Yes, but only some | Yes, most | Yes, all
Monitoring Child Development: Why, What, and How?

Dana Charles McCoy, PhD
Harvard Graduate School of Education
GUIDING QUESTIONS

- **WHY** should child development be monitored?
- **WHAT** indicators should be considered?
- **HOW** to set up measurement systems
  - Questions to be asked
  - Considerations to be made
WHY
**WHY DOES EARLY CHILDHOOD MATTER?**

- Birth to 8 is:
  - period in which brain is most sensitive to positive and negative environmental inputs
  - period in which policies/programs are most impactful... but most segmented
### Approaches to Measuring ECD

#### Screeners
- Used to identify children with early signs of developmental delay who are in need of additional services
  - Precise
  - Resource intensive
  - Culturally specific

#### Individual Assessments
- Used in research to measure impacts of programs or policies

#### Population Assessments
- Used to monitor the overall ECD status of a community, country, or region
  - Quick/cheap
  - Cross-culturally valid
  - Imprecise
HISTORY OF POPULATION ASSESSMENT

- Until recently, most population assessments in early childhood have focused on:
  - Mortality
  - Stunting
  - Environmental inputs (e.g., poverty)
- More recent focus on other dimensions of children’s ECD

<table>
<thead>
<tr>
<th>Age</th>
<th>Assessment</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-7</td>
<td>EDI (Offord &amp; Janus)</td>
<td>Teacher Report</td>
</tr>
<tr>
<td>3.5-6.5</td>
<td>IDELA (Save the Children)</td>
<td>Direct Assessment</td>
</tr>
<tr>
<td></td>
<td>MELQO</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>ECDI (UNICEF)</td>
<td>Parent Report</td>
</tr>
<tr>
<td>2-4</td>
<td>PRIDI (Inter-American Development Bank)</td>
<td>Direct Assessment + Parent Report</td>
</tr>
<tr>
<td>0-2</td>
<td>CREDI (McCoy &amp; Fink)</td>
<td>Parent Report</td>
</tr>
<tr>
<td>0-2</td>
<td>WHO indicators</td>
<td>Parent Report</td>
</tr>
</tbody>
</table>
Population assessments of ECD allow us to:
- quantify children’s needs across space and time
- raise awareness of developmental inequities
- make informed decisions re: policies & resource allocation
- determine effectiveness of large-scale intervention efforts
- monitor progress in achieving goals (e.g., MDGs, SDGs)
WHAT
1. ECD “inputs”
   - Environmental or biological risk and protective factors
     - Positive and negative caregiving
     - Health, nutrition, & infection
     - Child protection
     - Early education participation and quality
     - Community inputs (e.g., violence, services)
   - “Predictor” focused

2. ECD itself
   - Child skills, behaviors, knowledge
   - “Outcome” focused
CORE ECD DOMAINS & EXAMPLE CONSTRUCTS

Cognitive/Language
- Receptive & Expressive Communication
- Problem Solving
- Math & Literacy
- Executive Function & Self-Regulation

Motor
- Gross Motor Skills
- Fine Motor Skills
- Social Competence
- Internalizing & Externalizing Behaviors

Social-Emotional
- Emotion Knowledge & Regulation
- Writing

HOW
There is no single **right choice** when monitoring and measuring ECD.

There is only a **best choice** for your particular goals and resources.
BEFORE YOU START

- Get a clear **consensus** from multiple stakeholders/sectors about your **goals** and **resources**
  - What exactly do you want to know? Who do you want to know it about?
  - Why do you want to know this information? What actions will be taken based on the data collected?
  - Are you particularly focused on understanding the effects of certain policies and programs? If so, what are these and what impacts do you hope they have? What impacts do you want to avoid?
  - How much time and money do you have to gather your data? What is the capacity of your data collectors and evaluation team?
  - Are there things in your data collection that you want to avoid?

- Development of **standards** should (usually) precede selection of **measures**
1. Do I want to measure “inputs” to ECD or ECD itself?
2. Do I want a screener, an individual assessment, or a population assessment?
3. What is my target age group?
4. What domain(s) and construct(s) do I want to measure?
5. What “types” of children do I want to identify?
6. What format of assessment do I want to use?
7. Do I want to use a tool that is culturally specific vs. cross-culturally comparable?
3. TARGET AGE GROUP

- Select the developmental period(s) you would like to measure:
  - Infants & toddlers (0-2)
  - Preschoolers (3-5)
  - Early school age (6-8)
- Tools typically fit within one of these periods, with (relatively) few options for monitoring across this entire age span
- Some constructs more relevant in certain age ranges
  - E.g., 3-5 as “sensitive period” for executive function
- How skills manifest looks qualitatively different by age
  - E.g., different language skills for different age periods
Select the **domains** (e.g., motor, cognitive/language, social-emotional) and/or **constructs** (e.g., receptive communication, expressive communication) that are most relevant to your goals.

Some recommendations:

- You must balance **breadth** with **depth**. You cannot measure *all* domains with a high level of precision.
- Do your research! Focus on ECD **skills** that are:
  - **amenable** to environmental input (e.g., changes in policy and practice)
  - **relevant** to your developmental period
  - **predictive** of later-life outcomes
Determine whether you want to identify children at the **bottom**, **middle**, or **top** of the developmental curve.

Recommendation: Use tools that are sensitive to **full curve**, but make your decisions on “cutpoints” based on these conceptual distinctions.
Determine whether you would like to use a **caregiver-reported** tool or a **direct assessment**

<table>
<thead>
<tr>
<th></th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver Report</td>
<td>• Fast</td>
<td>• May be subject to reporter bias</td>
</tr>
<tr>
<td></td>
<td>• Minimal training</td>
<td></td>
</tr>
<tr>
<td>Direct Assessment</td>
<td>• May be more objective</td>
<td>• Time consuming</td>
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<td></td>
<td></td>
<td>• Require a lot of training</td>
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<tr>
<td></td>
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<td>• May be difficult/biased in 0-3</td>
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</tbody>
</table>

**Choices should consider resources and practicalities**

- E.g., Direct assessment not always practical for assessing large numbers of children

**Some domains/constructs lend themselves better to certain assessment formats**

- E.g., Some social-emotional skills difficult to directly observe
Determine whether you would like to be able to compare your findings with other efforts or countries.

**Country-specific indicators** are useful for targeting culturally-specific processes/goals, but lose ability for comparison.

**Recommendation: Do both!**
- Use a tool or set of indicators with direct comparability.
- Complement with a set of country-specific indicators to target more specific goals/needs.
Once you have answered these questions, you can either:

- **Select** an existing tool (or set of tools)
- **Create** your own tool

Considerations for either selection or creation:

- Make sure you **validate** the tool(s) in your culture or setting
  - This includes **sub-settings** relevant to you (e.g., rural and urban environments, different language groups)
- Consider **interpretability** of tool
  - Does the tool make sense to respondents? Does the score it provides give you data that you need to make decisions?
- Consider **cost** of the tool
  - Copyrights, etc.
  - Training, implementation, and “back-end” analysis costs
CHALLENGES & OPPORTUNITIES

- **Challenges**
  - **Ethical** considerations of:
    - Identifying individual children who are doing poorly developmentally
    - Using resources on measurement instead of programming
  - **Balancing** breadth and depth of measures, representativeness of sampling
  - **Coordination** across sectors, agencies, countries to develop cohesive and comparable monitoring frameworks

- **Opportunities**
  - Better data allow for better **understanding** of how children develop and how we can best support them
  - Better data allow for better **decisions** on:
    - when and where to **scale** existing programs
    - how to **refine** or improve existing programs
    - how to **develop** new, more effective programs
  - Better data make for better **advocacy**
GENERAL RECOMMENDATIONS

- All choices should be made with your end goals in mind
  - Do not waste scarce resources on assessing something (a domain, an age group) that doesn’t matter to you
- Be willing to make compromises on content and/or effort
  - Perfection is unattainable. Decide in advance what is most important to you, & prioritize accordingly. Acknowledge tradeoffs explicitly!
- Focus on data that are just simple enough...
  - Simple results are more interpretable and actionable
- ...but no simpler
  - Nuanced data allow for more targeted decision-making and knowledge advancement
- Communicate with researchers and other sectors too
  - coordinate efforts and share lessons learned
  - If you’re struggling with something, it’s likely someone else is struggling with the same problem (and may have already solved it!)
QUESTIONS?