

A Brief Introduction of the ECDI2030 - A New Tool to Measure SDG 4.2.1

Why ECDI2030?

Early moments matter. Children who receive good health, adequate nutrition, early stimulation, learning opportunities, care and protection in initial years of life tend to have better cognitive, language, and psychosocial development. Neuroscientists indicated that the environment where a young child grows during the early childhood period is critical in shaping the development and function of brain. Economists have also demonstrated that the benefits of investing in early years of the child far outweigh the costs.

The compelling evidence has prompted the international society to include early childhood development (ECD) in the Sustainable Development Goals (SDG), or Target 4.2, and SDG indicator 4.2.1 is used to specifically monitor the impact of government actions towards this target.

With its unique position in promoting children's wellbeing, UNICEF led the development of a measure for SDG indicator 4.2.1. The resulted measure is the Early Childhood Development Index 2030, or ECDI2030, which has the conceptual validity and content coverage for measuring the three domains stated in SDG indicator 4.2.1 among children aged 24 to 59 months (health, learning and psychosocial well-being).



Target 4.2

Ensure that, by 2030, all girls and boys have access to quality **early childhood development**, care and pre-primary education so that they are ready for primary education

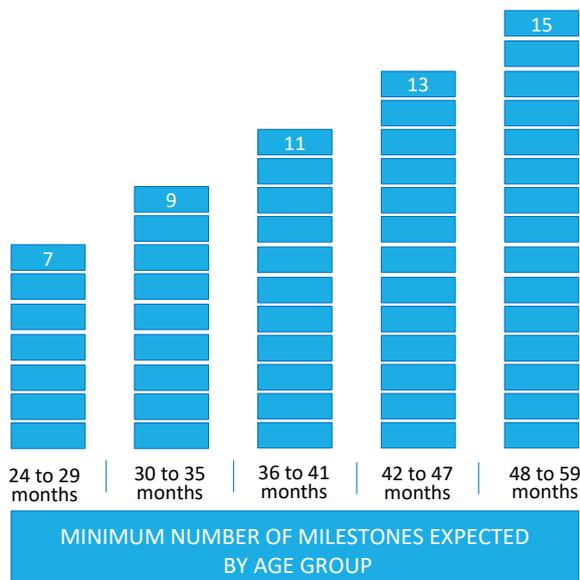
Indicator 4.2.1

Proportion of children **24 to 59 months** of age who are **developmentally on track** in health, learning and psychosocial well-being, by sex

What is ECDI2030?

The ECDI2030 consists of a set of [20 closed-answer questions](#). Each question asks the mother on how the child behaves in everyday situations, and the skills he/she has acquired. 18 items include a binary 'Yes/No' response scale and 2 include a graded response scale for the extent of the certain behaviour.

The ECDI2030 indicator is constructed as the percentage of children aged 24 to 59 months who have achieved the minimum number of developmental milestones expected for their age group (see figure below).



Achievement of developmental milestones is calculated as follows:

- **“Yes” answer** to questions ECD1 to ECD18 (ECD1-ECD18=1)
- **Any answer other than “daily”** to question ECD19 (ECD19=2 or 3 or 4 or 5)
- **Any answer other than “more” or “a lot more”** to question ECD20 (ECD20=1 or 2)

The ECDI2030 is available for use at no charge.

How was the ECDI2030 developed?

SDG Indicator 4.2.1 is based on large-scale population monitoring. The ideal instrument should be short, easy to administer in a standardized way, and generate results that are comparable across countries.

Methodological work on developing the ECDI2030 initiated in 2015 and involved extensive consultations with experts, partner agencies, and national statistical authorities. The goal was to generate the shortest and best possible set of items to measure SDG indicator 4.2.1.

Firstly, a comprehensive review on 20+ instruments was done and over 500 items were selected. All those instruments have been previously validated and showed validity across different cultural and socioeconomic contexts and relevancy for policy making. Cultural adequacy was given due consideration at the initial selection of items for the ECDI2030.

Secondly, cognitive testing on the draft set of questions was done in Bulgaria, Mexico, Uganda, and the United States, during which qualitative interview was used to assess the question interpretation and overall adequacy to ensure that the question is measuring what it intended to measure. This resulted in a narrower set of questions for field testing.

Thirdly, based on the results from dedicated field tests of the ECDI2030 in three countries (Belize, Mexico and State of Palestine) and analyses on a harmonized global dataset of selected items from an additional 33 countries, the final set of 20 questions were determined using a series of psychometric criteria including item discrimination and difficulty, redundancy, and overall reliability. Since the ECDI2030 was designed to measure the three domains indicated in SDG indicator 4.2.1, content coverage has been one core criteria throughout item selection and overall psychometric modelling.

Lastly, cut-scores of the ECDI2030 indicator, i.e. the minimum number of developmental milestones expected, for each age group was identified through a standard setting exercise, in which a global panel of experts from 13 countries generated a series of criterion-

referenced standards that reflect their expectations about the performance of a child who is “developmentally on track”, respectively for children aged 2, 3, and 4.

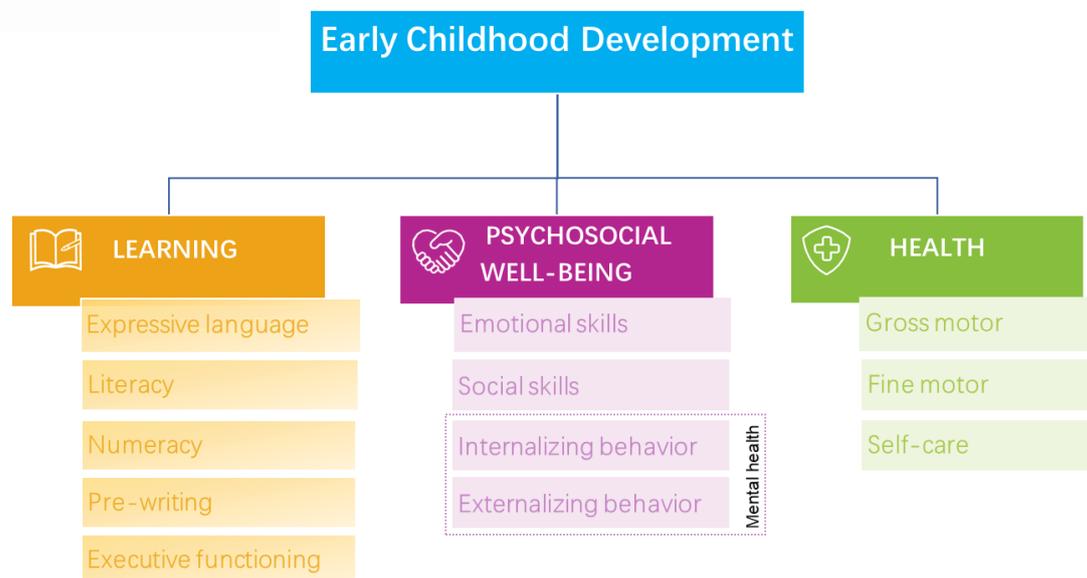
Features of the ECDI2030

For measuring SDG 4.2.1

The ECDI2030 was developed with the specific aim of providing countries with a measure that meets the requirements of monitoring and reporting on SDG 4.2.1. The ECDI2030 could be used by all countries to generate comparable data.

Comprehensive content coverage

The ECDI2030 covers 12 sub-domains under three domains of ECD including health, learning, and psychosocial well-being.



For age 2, 3, and 4 only

The ECDI2030 can only be used to collect data on children aged 2, 3, and 4 years old, or children aged 24-59 months.

Population level measurement

The ECDI2030 yields a population level measurement. This is different from individual-level ECD measurements in education or clinical settings. ECD measurement such as the Bayley Scales of Infant & Toddler Development are usually based on screening and direct assessment of individual children, which often requires specialized training and the use of costly administrative material and licenses. This makes it not quite feasible for the large-scale population monitoring of SDG indicator 4.2.1. In comparison, the ECDI2030 relies on self-reported information provided by the child’s mother, following simpler administration protocols and requiring less training.

The following points are to bear in mind when applying the ECDI2030:

- It is suitable to be embedded in the context of a large-scale household survey involving a collection of data on multiple topics.
- While useful for assessing interventions at the population level, it is not intended to evaluate interventions or conduct assessments at the individual level.

Short

As a general indication, the ECDI2030 takes about three minutes to administer under normal conditions. The administration time could be longer for some respondents who need interview assistance.

Can be disaggregated

The ECDI2030 is recommended to be incorporated into existing national survey. When collected alongside other information, the ECDI2030 indicator could be disaggregated by a child's sex, area of residence, household wealth, and other key variables of interest. Doing so will allow us to see the difference in development outcomes among children with different socioeconomic and family backgrounds, ensuring that no one is left behind.

One score only

The ECDI2030 only generates a single indicator based on a summary score that captures the three interlinked developmental domains of SDG indicator 4.2.1. It was not meant to produce sub-scores separately for the three domains. With the accumulation of testing data of the ECDI2030 at the global level, a revision of the current cut-scores may become necessary.

Things to follow while administering the ECDI2030

Survey design

- Given that the ECDI2030 aims to provide a population level measurement, it should be used in the context of probabilistic representative sample.
- The ECDI2030 is designed to be implemented in household surveys and be administered in-person to mothers of children 24 to 59 months of age. The content and structure of the module should not be modified, and any alternative implementation context and/or administration mode need to be tested.

Questionnaire design

General

- An age check should be included prior to the ECDI2030 module to ensure that it is only administered to mothers of children aged 24 to 59 months.
- 20 items in the ECDI2030 should be implemented in a completely standardized form. No question should be added or removed.
- The ECDI2030 items should not be changed in terms of question phrasing, question order or the response options, unless for the parts changed to better reflect the country's context as part of the translation and customization.

Customization

- A few predetermined words coloured in red in some questions could be changed to better reflect the country's context. The [ECDI2030 Customization and Translation Guidelines](#) provides item-by-item details.
- The change of wordings of the ECDI2030, as part of the customization, should also be reflected in other survey tools, such as the Instructions for Interviewers.

- It is recommended that any customization of the ECDI2030 go through a dedicated pre-test, including the instrument itself as well as the Instructions for Interviewers. The customization should not affect the validity and comparability of the data.

Interviewer training

Training on using the ECDI2030 should take around three hours. Below are some points that worth attention:

- Interviewers need to receive dedicated and adequate training on all content addressed in the *Instructions for Interviewers* manual. Interviewers should master the guidelines specific to the ECDI2030 as well as general interviewing techniques to ensure asking questions and registering responses in a standardized way.
- Interviewers should be given the chance to have enough practice sessions and mock interviews.
- In the case of using Computer-Assisted Personal Interviews (CAPI) in survey, interviewers should be first trained to administer the ECDI2030 on paper. Additional training should then be organized for using CAPI.

Survey implementation and data quality

General survey implementation guidelines should be observed to ensure data quality. Below are some points that worth attention:

- Except for one question that follows a skip rule, interviewers must ask all questions.
- Questions should be asked exactly as stated in the ECDI2030, with no changes to the wording. No clarification should be given to respondent unless the respondent cannot answer the question because she or he does not understand all or part of it.
- Before given clarification, make sure the question is read to the respondent a second time, exactly the way it is written, without changing any words.
- The ECDI2030 should be administered exclusively to the child's mother. An alternative primary caregiver could be eligible as a respondent only if the mother deceased or lives outside the household. The ECDI2030 should not be administered to other types of respondents such as teachers. If the mother or primary caregiver is not available at the time of the visit to the household, the interviewer must return to the household at a time when she or he is available.
- Some questions might seem too easy or hard and might generate reactions from respondents. Interviewers should ensure that the respondent understands that this is normal and expected issue, and that all questions are required to measure child development with the ECDI2030.
- Answers to questions should be solely based on the mother's perception and knowledge of the child. Interviewer should avoid the mother/caregiver trying to find out from a child directly if she or he can do the certain things being asked.
- The 'DON'T KNOW' answer code should only be used when the respondent was not aware of a behaviour of the child, after sufficient probing to help the respondent identify the best matching answer code. 'DON'T KNOW' answers are treated in the same way as 'NO' answers during data processing.
- The interview should be conducted privately, and all questions are answered by the respondent only. If other adults are present, it is important to ensure they do not intervene by providing answers or correcting the answers of the respondent.

Data processing and reporting

- The ECDI2030 indicator needs to be properly weighted, taking the survey design features as well as the non-responses into consideration.
- Predefined cut-scores are used to generate the indicator on the proportion of children aged 24 to 59 months who are “developmentally on track”.

Latest development of the ECDI2030 in China

The [Chinese translation of the ECDI2030](#) as well as the [Chinese translation of Instructions for Interviewers](#) have been developed jointly by UNICEF China and Beijing Normal University’s Collaborative Innovation Center of Assessment for Basic Education Quality. Based on initial testing and consultations with a team of ECD experts, [preliminary suggestion for customization in China’s context](#) for item ECD10, ECD11 and ECD16 has been made. The final customized version yet awaits more rigorous testing and further validation based on additional data analysis.

More guidance in English including the FAQ and could be found from the [ECDI2030 resource page](#).

Reference in English:

1. [A New Tool to Measure SDG Indicator 4.2.1 \(Brochure\)](#)
2. [ECDI2030 Customization and Translation Guidelines](#)
3. [ECDI2030 Frequently Asked Questions](#)
4. [ECDI2030 Quick Implementation Guide](#)
5. [ECDI2030 Instructions for Interviewers](#)
6. [UNICEF’S Programme Guidance for Early Childhood Development](#)