
EDI Mean Scores: an Early Development Instrument (EDI) Outcome

Indicator Description

- The Early Development Instrument (EDI) is designed to measure how well children meet developmentally appropriate expectations in senior kindergarten children. EDI mean scores are calculated for each of the following five domains measured by the EDI: physical health and well-being, social competence, emotional maturity, language and cognitive development, and communication skills and general knowledge.

Specific Indicators and Method of Calculation

Mean Score for Physical Health and Well-being

$$\frac{\text{Sum of scores for physical health and well-being domain}}{\text{Total number of senior kindergarten children with valid EDI scores for that domain}}$$

Mean Score for Social Competence

$$\frac{\text{Sum of scores for social competence domain}}{\text{Total number of senior kindergarten children with valid EDI scores for that domain}}$$

Mean Score for Emotional Maturity

$$\frac{\text{Sum of scores for emotional maturity domain}}{\text{Total number of senior kindergarten children with valid EDI scores for that domain}}$$

Mean Score for Language and Cognitive Development

$$\frac{\text{Sum of scores for language and cognitive development domain}}{\text{Total number of senior kindergarten children with valid EDI scores for that domain}}$$

Mean Score for Communication Skills and General Knowledge

$$\frac{\text{Sum of scores for communication skills and general knowledge domain}}{\text{Total number of senior kindergarten children with valid EDI scores for that domain}}$$

Notes:

- Children for which the teacher indicated with, and without 'special needs' are usually analyzed separately. See analysis checklist.
- Sum of scores for each domain is sum of the x number of item scores which contribute to each domain. For example, the physical health and well-being domain is measured by 13 questions. The sum of scores for this domain is the sum of the 13 times scores.

Basic Categories

- Age groups: senior kindergarten
- Gender: male, female
- Geographic areas: Ontario, public health unit/region*, school board, municipality, and neighborhood

Notes:

- EDI data sets are provided by the Ministry of Education to organizations that are funded to plan for young children and their families, including school boards, municipalities, and agencies that have ministry-funded Data Analysis Coordinator (DAC) positions.
- EDI collection, analysis, and reporting is supported by a network of approximately 50 Data Analysis Coordinators (DACs). DACs are community-based research analysts responsible for data gathering, analysis, and reporting to support research, evaluation, and planning efforts in Ontario's early years sector. DACs have historically been linked to ministry-funded child and family programs.
- Agencies with DACs receive EDI data sets for the municipalities that are included in each agency's service area.
- Municipal boundaries for the EDI data sets are the 47 Consolidated Municipal Service Managers and District Social Services Administration Boards, which are similar to census divisions. For more information about the municipal boundaries used to develop the EDI data sets: <http://www.edu.gov.on.ca/childcare/websiteServiceManagers.pdf>.
- *: The Ministry of Education works with the Offord Centre to produce data sets for publicly-funded school boards as well as municipalities. There is no provincial consistency in the availability of the EDI data by public health unit/region.

Data Sources

Numerator and Denominator: Early Development Instrument (EDI)

Data custodian: Ministry of Education

Data processed by: Ministry of Education and the Offord Centre for Child Studies (OCCS)

Implemented by : Ministry of Education, the Offord Centre for Child Studies, and publicly-funded school boards

Local contact: Offord Centre for Child Studies

Suggested citation (see [Data Citation Notes](#)): Early Development Instrument, [cycle, year], Ontario Ministry of Education, Extracted: [date]

Notes:

- Drs. Magdalena Janus and Dan Offord from the Offord Centre for Child Studies (OCCS), McMaster University developed the EDI. The OCCS owns the copyright for the EDI. In collaboration with the Ministry of Education, OCCS facilitates data collection with school boards, manages training and

implementation, cleans and scores the data, and produces reports at the provincial, municipal, school board and school levels. Historically, senior kindergarten teachers were able to complete the EDI on paper or electronically. Since 2012, EDI has become entirely electronic.

- In October 2013, funding, policy and operational responsibilities for the EDI were transferred from the Ministry of Children and Youth Services to the Early Years Division of the Ministry of Education. Beginning in the 2014-15 school year, school boards became responsible for the administration and collection of the EDI data. A province-wide EDI data collection (Cycle 4) occurred between January and April 2015.

Analysis Check List

- The EDI is a questionnaire that measures children's ability to meet age appropriate developmental expectations at school entry. It consists of 104 core questions that are organized into domains and subdomains. It is filled out by senior kindergarten teachers.
- Questions left blank or with "I don't know" answers are treated as missing data in the EDI questionnaire.
- Questionnaires valid for analyses (i.e. with valid EDI scores) includes those for children in a senior kindergarten class for more than one month, with no missing data on special needs questions, and no missing data in more than one domain (a domain is considered missing if more than approximately 30% of questions are left blank or have "I don't know" responses). A binary variable based on the validity of the questionnaires is created in the EDI dataset (1=Yes, 0=No) so that DAC can easily select only valid questionnaires for their analysis.
- The mean scores for each domains range from 0 to 10. Although the five domain scores can be combined into a total EDI score ranging from 0 to 50, it needs to be noted that only the domain scores are reported in practice (Janus et al., 2007; Kershawe al., 2005).
- Descriptive statistics for domain specific scores usually include mean, minimal and maximum scores as well as standard deviation. The mean score is an arithmetic mean that can be affected by outliers; it does not represent data with extreme values.
- EDI results for individuals should be aggregated and be applied to logically-defined groups, for example, groups based on geographical boundaries such as a city or census tract or on administrative boundaries such as a school board catchment area or school network, and populous enough to make analysis feasible. Data on subgroups of 10 or fewer children should not be reported. Data on groups of between 11 and 30 should be interpreted with caution.
- The Ontario Baseline was the first provincial EDI collection in Ontario from 2004-2006. It is used as a reference for all subsequent EDI collections in Ontario. When comparing local scores with Ontario results, instead of using the same year's Ontario data, the 2004-2006 Ontario data are used as a comparator. Vulnerability is also based on cut-offs from this population (See core indicator **Vulnerable Children: an Early Development Instrument (EDI) Outcome**).
- Data sets provided to school boards, municipalities, and DAC agencies include EDI data at the individual level with a unique ID number for each record. Municipal data sets include dissemination areas and school board data sets include postal codes. Personal information such as student name, date of birth, or home address is not included in the dataset (age is included).
- Although the Canadian and Ontario mean scores for each cycle are not included in the dataset, EDI users may request them from the OCCS. Usually there is a time lag in receiving these measures.
- The two groups- children with, and children without special needs are usually analyzed separately. The OCCS typically separate their groups in their EDI publications while how they are analyzed is handled differently by different DACs.

Survey questions

The EDI questionnaire contains the following sections (OCCS, 2014/2015 Ontario EDI questionnaire):

- Demographics Section: includes class assignment, sex, age, post code, language ect.
- Section A-Physical Health and Well-being
- Section B- Language and Cognitive Skills
- Section C-Social and Emotional development
- Section D-Special Concerns
- Section E-Additional Questions

It is important to note that the section title on the EDI questionnaire may not match the five main domains. The indicators of EDI mean scores are derived from the several sections of EDI. The table below presents EDI questions used for calculating the scores. Notes: information in this table may be subject to change.

Indicators	Sections	Number of Questions	Response categories	Score Range	Variable Name
Mean Score for Physical Health and Well-being	Section A and C	13: QA2-13, QC58	Yes, No, Don't Know; Often or very true, Sometimes or somewhat true, Never or not true, Don't Know	0-10	phys
Mean Score for Social Competence	Section C	26: QC1-25, QC27	Often or very true, Sometimes or somewhat true, Never or not true, Don't Know	0-10	soc
Mean Score for Emotional Maturity	Section C	30:QC28-57	Often or very true, Sometimes or somewhat true, Never or not true, Don't Know	0-10	emot
Mean Score for Language and Cognitive Development	Section B	26: QB8-33	Yes, No, Don't Know;	0-10	langcog
Mean Score for Communication Skills and General Knowledge	Section B and C	8:QB1-7, QC26	Very good/good, Mean, Poor/very poor, Don't Know; Often or very true, Sometimes or somewhat true, Never or not true, Don't Know	0-10	comgen

Indicator Comments

- The EDI data has been collected from each Ontario school board once every three years since 2004. Since the 2004-2006 school years, four provincial cycles of the EDI have been collected to date including 2004-2006, 2007-2009, 2010-2012, and 2015.
- The data collected from 2004 to 2012 is owned jointly by OCCS and MCYS. The data collected in 2015 is owned by the Ministry of Education and shared with OCCS for purposes outlined in a data sharing agreement.
- The EDI instrument is designed to be interpreted at the population level. It is not suitable for

determining or supporting any diagnosis for an individual child.

- There are no standards/guidelines to interpret the absolute scores. Mean scores are meaningful only when they are used to compare different groups of children. The group with the higher mean score is doing comparatively better; the group with the lower mean score has more concern.
- The EDI mean scores for each of the five developmental domains—Physical Health and Well-being, Social Competence, Emotional Maturity, Language and Cognitive Development, and Communication Skills and General Knowledge—are divided into categories representing the highest scores to the lowest scores in the population group. The distribution of scores across the five EDI domains can be used to determine percentages of children at various levels of development well-being (See core indicator **Vulnerable Children: an Early Development Instrument (EDI) Outcome**)
- The association between mean scores and other societal indicators can be examined ecologically. This means linking the mean scores with other indicators at group level, rather than at individual level. These societal indicators could include education level, income school enrollment, academic testing of children in later grades, availability of libraries, local programs and services for children, parks, and playgrounds etc. There is evidence to suggest that school readiness, as measured by the EDI, is associated with societal factors such as socioeconomics, demographics and family dynamics (Janus & Duku, 2007).
- EDI results may also be linked to other indicators such as the Education Quality and Accountability Office (EQAO) assessment results at individual level. It was found that students with high EDI scores in kindergarten are much more likely to achieve the provincial standard on the Grade 3 EQAO assessment than those in the vulnerable or at-risk groups. (Calman & Crawford, 2013).

Ontario Public Health Standards (OPHS)

The Ontario Public Health Standards (OPHS) establish requirements for the fundamental public health programs and services carried out by boards of health, which include assessment and surveillance, health promotion and policy development, disease and injury prevention, and health protection.

The OPHS consist of one Foundational Standard and 13 Program Standards that articulate broad societal goals that result from the activities undertaken by boards of health and many others, including community partners, non-governmental organizations, and governmental bodies. These results have been expressed in terms of two levels of outcomes: societal outcomes and board of health outcomes. Societal outcomes entail changes in health status, organizations, systems, norms, policies, environments, and practices and result from the work of many sectors of society, including boards of health, for the improvement of the overall health of the population. Board of health outcomes are the results of endeavours by boards of health and often focus on changes in awareness, knowledge, attitudes, skills, practices, environments, and policies. Boards of health are accountable for these outcomes. The standards also outline the requirements that boards of health must implement to achieve the stated results.

Outcomes Related to this Indicator

- Societal Outcome (Child health): An increased proportion of children have optimal oral health.
- Board of Health Outcome (Child health):
- The board of health is aware of and uses epidemiology to influence the development of healthy public policy and its programs and services for the promotion of healthy child development.
- Policy-makers have the information required to enable them to amend current policies or develop new policies that would have an impact on the promotion of healthy child development.

Assessment and/or Surveillance Requirements Related to this Indicator

- The board of health shall conduct epidemiological analysis of surveillance data, including monitoring of trends over time, emerging trends, and priority populations in accordance with the Population Health

- Assessment and Surveillance Protocol, 2008 (or as current), in the areas of Growth and development
- The board of health shall work with community partners, using a comprehensive health promotion approach, to influence the development and implementation of healthy policies and the creation or enhancement of supportive environments to address the areas of Growth and development
- The board of health shall collect or access the following types of population health data and information: Growth and development

<http://www.ontario.ca/publichealthstandards>

Corresponding Health Indicator(s) in Public Practice

Corresponding Health Indicator(s) from Statistics Canada and CIHI

None

Corresponding Indicator(s) from Other Sources

None

Definitions

- Physical Health and Well-being refers to the notion that children are healthy, independent, properly clothed and well rested. It is assessed by the following sub-domains: gross and fine motor skills, physical readiness for school day and physical independence
- Social Competence refers to the notion that children play and get along with others, share and show self-confidence. It is assessed by the following sub-domains: overall social competence, responsibility and respect, approaches to learning and readiness to explore new things
- Emotional Maturity refers to the notion that children are able to concentrate on tasks, help others, show patience and are not habitually aggressive, hyperactive, inattentive, anxious, or fearful or. It is assessed by the following sub-domains: prosocial and helping behaviour, hyperactivity and inattention, anxious and fearful behaviour and aggressive behaviour
- Language and Cognitive Development refers to the notion that children are interested in reading and writing, can count and recognize numbers and shapes. It is assessed by the following sub-domains: basic literacy skills, interest literacy/numeracy and memory, advance literacy skills and basic numeracy skills
- Communication Skills and General Knowledge refers to the notion that children can and communicate their needs and ideas effectively to children and adults, and are interested in the surrounding word.

Cited References

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Acknowledgements

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Changes made

Date	Type of Review- Formal Review or Ad Hoc?	Changes made by	Changes
November, 2015	Formal Review	EDI Task Group of the Child and Adolescent Health Indicators and Data Working Group	• New indicator
March, 2016	Formal Review	External Reviewers	