Introduction to indicators

March 2013
Introductions

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Webinar features

• Adobe Connect technology
  • ‘Chat’ function to ask questions or if you need help
• Webinar courtesy
• Polls
Poll #1: your level of familiarity with indicators

How would you rate your level of familiarity with indicators?

1. I’ve heard of them but don’t really know what they are
2. I know what they are but I don’t use them in my work
3. I use them in my work all the time
Objectives of today’s webinar

Learning about:

• Basic parts of indicators
• Types of indicators
• Criteria for assessing indicators
• Steps to develop indicators
• Using indicators in planning/evaluation
• Accessing resources
Definition: indicators

A summary measure that aims to describe, in a few numbers, as much detail as possible about a system, to help understand, compare, predict, improve and innovate.¹
Basic parts of an indicator and types
Basic parts of an indicator

- Title
- Definition
- Rationale
- Data source
- Method of calculation
- Applicable population
- Limitations
<table>
<thead>
<tr>
<th>Basic part</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Birth weight</td>
</tr>
<tr>
<td>Definition</td>
<td>Weight in relation to gestational age, e.g., small for gestational age (SGA)</td>
</tr>
<tr>
<td>Rationale</td>
<td>Association between low birth weight with infant morbidity and mortality</td>
</tr>
<tr>
<td>Data source</td>
<td>Vital statistics/hospitalization/Better Outcomes Registry and Network</td>
</tr>
</tbody>
</table>
| Method of calculation | total number of singleton live births, weights <10\textsuperscript{th} percentile for their gestational age and sex  
|                    | \begin{align*} \frac{\text{total number of singleton live births, weights <10}^{\text{th}} \text{ percentile for their gestational age and sex}}{\text{total number of singleton live births}} \times 100 \end{align*} |
| Population         | Infants born in Ontario to resident females                              |
| Limitations        | Reference birth weights for gestational age percentile cut-offs may misclassify healthy infants of certain ethnicities |
Types of indicators

• Quantitative and qualitative
## Types of indicators

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantitative</strong></td>
<td><strong>Counts:</strong> number of women who initiated breastfeeding</td>
</tr>
<tr>
<td></td>
<td><strong>Rates:</strong> preterm birth rate</td>
</tr>
<tr>
<td></td>
<td><strong>Proportion:</strong> proportion of mothers aged 15-49 years who breastfed their last baby (born within last five years)</td>
</tr>
<tr>
<td></td>
<td><strong>Average:</strong> average age of mother at the infant’s birth</td>
</tr>
<tr>
<td><strong>Qualitative</strong></td>
<td>Belief in benefits of breastfeeding</td>
</tr>
</tbody>
</table>
Types of indicators

• Population\textsuperscript{3,4}
  • Health status
  • Health determinants

• Program
  • Process
  • Outcome
## Types of indicators

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
</table>
| Population | Preterm birth rate  
(Population health status)                                               |
|            | Proportion of new mothers that have:  
• Any post-secondary education  
• Graduated from secondary school  
• Less than secondary school education  
(Population health determinants) |
| Program    | # of posters disseminated on breastfeeding  
(Process)                                                               |
|            | Exclusive breastfeeding until six months of age  
(Outcome)                                                              |
Criteria for assessing indicators

- Accessibility
- Reliability
- Validity
• What are the barriers to obtaining data for your indicators?

• Common Barriers:
  • Limited resources
    • Human or financial
  • Sample size
    • Locating willing participants
    • Measuring a phenomenon that does not occur frequently
• Will it perform consistently over time or if measured by different people?

• Examples:
  • Could the finding/response be affected by when data are collected?
  • Is there too much room for interpreting the question?
  • Would repeated measures of the same subject be consistent if:
    • One data collector uses the same measurement device?
    • One data collector uses different measurement devices?
    • Repeated by different data collectors?
• How well does the indicator actually measure what it should?

• Examples:
  • Self-reported weight versus actual weight?
  • Workshop participants that ‘like’ a workshop – it doesn’t necessarily mean they found it useful
Other considerations

• Acceptability
• Comparability
• Sensitivity
• Specificity
• Usefulness
Poll #2: indicator criteria

Which of the following is a concern about validity?

1. The indicator doesn’t address the objective
2. Obtaining the data is too time consuming
3. A term is not clearly defined
Poll #2: indicator criteria

**Objective:** by the end of the workshop, 80% of participating parents will have positive attitudes towards breastfeeding

**Indicator:** % of participating parents who can identify 3 possible challenges of breastfeeding

Which of the following is a concern about validity?

1. The indicator doesn’t address the objective
2. Obtaining the data is too time consuming
3. The term ‘challenge’ is not clearly defined
Steps to develop indicators\textsuperscript{6,7}

Step 1: identify what you want to measure

Step 2: develop a list of possible indicators

Step 3: agree on criteria for indicators

Step 4: assess each possible indicator against criteria

Step 5: select best indicators

Step 6: refine indicators

Step 7: test indicators
### Indicator worksheet

<table>
<thead>
<tr>
<th>Program objective</th>
<th>Possible indicator</th>
<th>Criteria for assessing indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BMI</td>
<td>Accessibility: Discomfort</td>
</tr>
<tr>
<td></td>
<td>Measured weight</td>
<td>Reliability: Reference ranges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Validity: Muscle vs. fat mass;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other?: Self-report</td>
</tr>
</tbody>
</table>

*Discomfort* Different weigh scales

Muscle vs. fat mass; different weigh scales
Uses of indicators
Why use indicators?1,3,5,8

- Accountability
- Alert you to possible problems
- Assess progress
- Communicate
- Compare
- Monitor performance
Uses of indicators: planning

• Understanding the situation
  • Situational assessment

Population level indicators:
“Standardized measures by which to compare health status and health system performance and characteristics among different jurisdictions”

• Planning to measure objectives
  • Evaluation planning
Uses of indicators: evaluation

Program level indicators

“Specific, observable and measurable characteristics or change that will represent achievement of the [process or] outcome”\(^\text{10}\)
Indicators in evaluation

Formative or process evaluation

- Logic model component
  - Resources
  - Activities
  - Process objectives

Outcome evaluation

- Short-term outcome objectives
- Intermediate outcome objectives
- Long-term outcome objectives
- Goal

Evaluation questions

- Are resources adequate to implement the program?
- Is the program implemented as planned?
- How many, how much was produced?
- Change in knowledge, policy, environment?
- Change in behaviour, system?
- Change in health status?
- Change in population health status?

Indicators: what will be measured
## Components of an evaluation plan

<table>
<thead>
<tr>
<th>Evaluation question</th>
<th>Objective (refer to logic model)</th>
<th>Indicator (refer to logic model)</th>
<th>Method of data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you want to know about the program?</td>
<td>What did the program set out to do?</td>
<td>What will demonstrate success?</td>
<td>What tools will you use to collect the information you need?</td>
</tr>
</tbody>
</table>
Poll #3: your main uses of indicators

What are your main uses of indicators?

1. Planning - situational assessments
2. Planning – setting program objectives
3. Evaluation – measuring program outcomes
4. Evaluation – measuring program processes
5. Other
Examples of indicators
Ontario Public Health Standards (OPHS) indicators\textsuperscript{12}

- Family health
- Infectious diseases
Family health program standard\textsuperscript{12}

**OPHS societal outcome – child health:** there is an increased rate of exclusive breastfeeding until six months, with continued breastfeeding until 24 months and beyond.

**Indicators:**

- Breastfeeding initiation\textsuperscript{2}
- Exclusive breastfeeding duration of six months or more\textsuperscript{2}
Infectious disease prevention and control program standards\textsuperscript{12}

OPHS societal outcome - sexual health, sexually transmitted infections, and blood-borne infections (including HIV):

- There is increased adoption of healthy behaviours among the population regarding sexual health.
- Indicator: frequency of condom use among those at risk for STDs\textsuperscript{2}
Poll # 4: infectious diseases prevention and control

**Societal outcome**: increased adoption of healthy behaviours among the population regarding sexual health\(^{12}\)

- **Indicator**: Frequency of condom use among those at risk for STDs\(^2\) (Data source: CCHS)

What issue might there be with this indicator?

1. Accessibility
2. Reliability
3. Validity
4. All of the above
Case example

Using indicators in a situational assessment
AHKC was Established in 1994 with the vision of creating a nation of healthy active kids.

An interdisciplinary Research Work Group selected 24 indicators of performance on physical activity in children and youth.

On an annual basis, AHKC:
- synthesizes data from multiple sources and uses it to grade performance on each of the 24 indicators.
- issues a report card on the state of physical activity and determinants of physical activities in children and youth in Canada.
Active Healthy Kids Canada (AHKC) 2012 report card on physical activity for children and youth

Indicator domains:

• Physical activity
  • (e.g., physical activity levels, active play)

• Sedentary behaviour
  • (e.g., screen-based, non-screen)

• School and childcare settings
  • (e.g., physical education, school policy)
Active Healthy Kids Canada (AHKC) 2012 report card on physical activity for children and youth

- Family and Peers
  - (e.g., family physical activity, peer influence)
- Community and the Built Environment
  - (e.g., community programming, municipal policies and regulations)
- Policy
  - (e.g., provincial/territorial government strategies; provincial/territorial government investments)
Steps for developing or selecting indicators\textsuperscript{6,7}

**Step 1:** Identify what is to be measured
- Physical activity
- Determinants of physical activity

**Step 2:** Develop a list of possible indicators
- E.g., Physical activity in 0–19 year olds
- Measured average number of daily steps taken (5–19 year olds)
- Measured average daily minutes of moderate or vigorous physical activity (5–19 year olds)
- Measured average daily minutes of physical activity (0–4 year olds)
Step 3: agree on criteria for indicators

- Accessibility
- Reliability
- Validity
- Acceptability
- Comparability

Step 4: assess each possible indicator against criteria

Step 5: select best indicators
Step 6: Refine indicators

Step 7: Test indicators

What would you do if:

- 10% of children and youth meet or exceed the recommended level of daily physical activity?
- 90% of children and youth meet or exceed the recommended level of daily physical activity?
In summary, this information can be used to:

• Identify indicators that could potentially answer your evaluation questions
• Identify the strengths/limitations of the indicators
• Determine the feasibility of using the indicator
• If local data exist for your population of interest
  • Establish baseline measures prior to implementing your program
• If no local data exist for your population of interest
  • consider the feasibility of collecting local data
Challenges of using health indicators\textsuperscript{3,5}

- Indicators only answer the questions you ask but don’t tell you why
- Indicators can highlight associations but temporality is often difficult to establish
- Indicator definitions may vary among organizations
  - Beware when making comparisons
- Temptation to base evaluation on indicator or data availability
  - Indicator/data may not measure what you want to know
Challenges of using health indicators

• What gets measured gets done
• Limitations of an indicator may not be obvious
• It may be possible to “game” some indicators
Poll #4: your main challenges

What are your main challenges in using indicators?

1. Developing indicators
2. Selecting indicators
3. Interpreting indicators
4. All of the above
5. Other
Tips for using indicators responsibly

• Determine what you want to know

• Evaluate indicators for: accessibility/feasibility, reliability, validity, etc. – don’t use indicator “because it’s there”

• Limit the number of indicators, focusing resources on the strongest ones

• Make indicator selection, development and interpretation collaborative

• Choose indicators that cannot be easily ‘gamed’
• Investigate areas where there is a discrepancy in data sources (where the greatest learning will occur)

• When disseminating results, state known indicator limitations

• Treat indicators as one useful source of data – not gold standard against which other evidence is measured – integrate with qualitative methods as well

• An indicator is just an indicator
  • Understand what the indicator is telling you and what it isn’t
Summary

• Many types of indicators
• Indicators have a variety of uses
• Various criteria to assess them
• Steps to develop/select indicators
• Use them understanding their advantages/drawbacks
Welcome to the Online Health Program Planner

The OHPP is a collection of interactive planning worksheets that can help you make evidence informed planning decisions.

» Get started now!

Quick links
Training and consultation services
Recent enhancements
Library of sample program plans based on the Ontario Public Health Standards

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### Six Program Planning Steps

Our six program planning steps help you make evidence-informed planning decisions about your program design.

Use the **BLUE** Program Planning Steps (PPS) menu to use these worksheets.

For more information about this process, look at the Planning Workbook Online on the Learning Centre Menu at the top of every page.

### Online Business Case Creator

The OBCC will guide you through a three-step process to analyze your project and make recommendations about whether a project should move forward. Use the **GREEN** Online Business Case Creator (OBCC) menu to use these worksheets.

For more information about this three-step business case creation process, please look at the Online Business Creator Workbook, found on the Learning Centre Menu at the top of every page.

### Project Management Tools (PMT)

The Project Management Tools will help you iron out the implementation details of your project. Use the **GREEN** Project Management Tools (PMT) menu to use these worksheets.

Information about how to use these worksheets is available at the top of each project management worksheet.
## Online Health Program Planner 2.0

<table>
<thead>
<tr>
<th>Component of program plan</th>
<th>Worksheet to complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>Worksheet 3.1: set goals, audiences, outcome objectives</td>
</tr>
<tr>
<td>Audiences</td>
<td>Worksheet 3.1: set goals, audiences, outcome objectives</td>
</tr>
<tr>
<td>Outcome objectives</td>
<td>Worksheet 3.1: set goals, audiences, outcome objectives</td>
</tr>
<tr>
<td>Process objectives</td>
<td>Worksheet 4.4: develop process objectives</td>
</tr>
<tr>
<td>Outcome indicators</td>
<td>Worksheet 5.1: develop outcome indicators</td>
</tr>
<tr>
<td>Process indicators</td>
<td>Worksheet 5.2: develop process indicators</td>
</tr>
</tbody>
</table>
Health promotion capacity building services

• Free to those working on Ontario-focused projects

• Scope varies, depending on need:
  • Brief, one-time advice
  • Links to other sources of information and resources
  • Review your work or product
  • Consultations
  • Training sessions/workshops

• Service request form:
  • [http://www.oahpp.ca/services/hpcdzip-consultation-services.html](http://www.oahpp.ca/services/hpcdzip-consultation-services.html)
Health promotion capacity building services

- Evaluation
- Planning
- Policy and By-law Development
- Alcohol Policy
- Health Communication
PHO resources

- Online Health Program Planner\textsuperscript{15}
- Planning health promotion programs workbook\textsuperscript{16}
- Evaluating health promotion programs workbook\textsuperscript{17}
- Health communication outcomes. At the heart of good objectives and indicators\textsuperscript{18}

Resources are available in both English and French.
Other recommended resources

• NHS: The good indicators guide

• Health Council of Canada: A citizen’s guide to health indicators

• First Nations Centre: Understanding health indicators

• Paper by Bowen and Kreindler: Indicator madness

• UNAIDS: Introduction to indicators
Health status and health determinant indicators and data sources

• Association of Public Health Epidemiologists of Ontario (APHEO) Core Indicators for Public Health in Ontario\(^2\)
• CIHI Interactive Tool\(^20\)
• Public Health Agency of Canada “Surveillance” Information\(^21\)
• PHO Snapshot (stay tuned!)
Health status and health determinant indicators and data sources

- Statistics Canada CANSIM tools\textsuperscript{22}
- Canadian Community Health Survey\textsuperscript{23}
- Rapid Risk Factor Surveillance System\textsuperscript{24}
- Epidemiologist in your facility
Questions?


17. The Health Communication Unit, Centre for Health Promotion, University of Toronto. Evaluating health promotion programs workbook. Toronto, ON: University of Toronto; 2007.

18. The Health Communication Unit, Centre for Health Promotion, University of Toronto. Health communication outcomes. At the heart of good objectives and indicators. Toronto, ON: University of Toronto; 2007.


