Improving Your Program Evaluation Plans: A Working Session

IPLAN Training Program
June 24, 2011
Holiday Inn – Bloomington IL
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Training Objectives

• Describe the CDC Framework for Program Evaluation in Public Health

• Identify meaningful process indicators to measure, monitor, and improve the work that leads to desired outcomes.

• Apply Quality Improvement (QI) tools and models to improve process data and outcomes
• Improve program evaluation plans based on peer and expert feedback.
• Identify evaluation resources for continued learning and development
Program Evaluation Overview
Evaluation

Synonymous terms

- Evaluation
- Program evaluation
- Evaluation research
Definition

“the use of social research methods to systematically investigate the effectiveness of social intervention programs in ways that are adapted to the political and organizational environments and are designed to inform social action to improve social conditions”

(Rossi, Lipsey and Freeman 2004)
Rigorous social science methodology adapted to the situation and the goals of the evaluation

- Systematic observation
- Measurement
- Sampling
- Research design
- Data analysis
...use of social research methods...

2 Arms of Evaluation

1. Gathering and analyzing data

2. Rating or ranking against some standard

(Scriven, 1991)
...effectiveness of social intervention...

Social programs $$$$$$ → Social good

$\rightarrow$ Accountability
...effectiveness of social intervention...

5 Domains

1. Need
2. Program design
3. Implementation
4. Impact or outcome
5. Efficiency
...adapted to the political and organizational environments...

Questions posed by:
- Evaluation sponsor
- Other stakeholders

Evaluation a political process because:
- Programs are proposed/developed within political arena
- Evaluation results enter the political arena
- Evaluation “takes a political stance” regarding programs worth
...inform social action to improve social conditions.

- Providing information that will be used to guide action to:
  - Fund/not fund programs
  - Implement new programs based on evaluation of pilots/demonstrations
  - Modify existing programs
  - Replicate existing programs
  - Try similar program methods for different social conditions
Evaluation Practice

• Tension between:
  – Evaluation and service delivery
  – Scientific rigor and pragmatics
  – Negotiating a “middle way”

• Less control in the social environment than the “laboratory”

• Social programs “volatile”, they change, they come and go
Campbell and Cronbach

• Donald Campbell and the *Experimenting Society*
  – Clearly in the research paradigm

• Lee Cronbach
  – Evaluation more art than science/maximize usefulness
“The US and other modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs designed to cure specific social problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, modify or discard them on the basis of apparent effectiveness on the multiple imperfect criteria available”

(Campbell, 1969)
Tailoring Evaluations

- Each evaluation must “tailor” certain aspects including:
  - Questions
  - Methods
  - Nature of evaluator/stakeholder relationship
Developing an Evaluation Plan

Plan must consider:

1. Purposes of the evaluation and use of the findings
2. Program structure and circumstances
3. Resources available for evaluation
Purpose of the Evaluation

- Improve management
- Gain knowledge regarding effectiveness/accountability
- Support advocacy by proponents
- Provide input regarding funding
- Requirement of funding
Purpose of the Evaluation

Program Improvement
• Formative evaluation
  – Focused on program improvement
  – Sometimes used synonymously with “process evaluation”

Effectiveness/Accountability
• Summative evaluation
  – Focused on effectiveness of program/accountability
  – Sometimes used synonymously with “impact” or “outcome” evaluation
## Program Structure and Circumstances

<table>
<thead>
<tr>
<th>Stage of Development</th>
<th>Questions</th>
<th>Evaluation Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of social need</td>
<td>Are community needs met?</td>
<td>Needs assessment</td>
</tr>
<tr>
<td>Determination of goals</td>
<td>What must be done to meet needs?</td>
<td>Needs assessment; service needs</td>
</tr>
<tr>
<td>Alternative programs designs</td>
<td>What services would produce desired result?</td>
<td>Assessment of program theory</td>
</tr>
<tr>
<td>Selection of alternative</td>
<td>Which program approach is best?</td>
<td>Formative evaluation; Feasibility study</td>
</tr>
<tr>
<td>Program implementation</td>
<td>How should program be implemented?</td>
<td>Implementation assessment</td>
</tr>
<tr>
<td>Program operation</td>
<td>Is program operating as planned?</td>
<td>Process evaluation; program monitoring</td>
</tr>
<tr>
<td>Program outcomes</td>
<td>Is program having desired effect?</td>
<td>Outcome evaluation</td>
</tr>
<tr>
<td>Program efficiency</td>
<td>Are effects reasonable given costs?</td>
<td>Cost-benefit analysis; cost effectiveness analysis</td>
</tr>
</tbody>
</table>

*Adapted from Pancer & Westhues, 1989*
Program Structure and Circumstances

Program theory

- Plan of operation
- Logic that connects activities to outcomes
What Makes a Logic Model Effective?

- Logically links activities and effects/outcomes
- Is visually engaging yet contains the appropriate degree of detail for the purpose (not too simple or too confusing)
- Provokes thought, triggers questions
- Includes forces known to influence the desired outcomes
- Provides information for determining indicators of effect
- Suggests what evaluation questions should be posed
Traditional Service Program Model

INPUTS → ACTIVITIES → OUTPUTS

(service delivery units)
The Program Logic Model

ASSESSMENTS → INPUTS → ACTIVITIES → OUTPUTS → OUTCOMES
Kellogg Basic Logic Model

Resources/Inputs → Activities → Outputs → Outcomes → Impact

Your Planned Work → Your Intended Results

Program Evaluation
June 24, 2011

Illinois Public Health Institute
Kellogg Basic Logic Model

Resources/Inputs → Activities → Outputs → Outcomes → Impact

Your Planned Work → Your Intended Results

Process/formative evaluation → Summative/outcome evaluation
Cholesterol Reduction Program Model

Project Theory

Health Belief Model/SOC Model

ATP III Guidelines

USPSTF Guidelines

Intervention Level

Business

Group

Individual

Provider

Intervention Processes

Program Info

Health Education

Screening

Follow up/Referral

Education

Intermediate Outcomes

Awareness of costs related to cholesterol

Awareness of need to control cholesterol

% of persons that have had screening

Awareness of HBM concepts

# of persons on appropriate treatment

Impact Outcomes

Costs related to high cholesterol

% Reduction in blood cholesterol

Final Outcomes

Reduce deaths due to CVD

Program Evaluation
June 24, 2011
# Theory Based Evaluation

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Theory base (HBM)</th>
<th>Evaluation Components</th>
</tr>
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</table>
| **Pretest** – Instrument designed to measure individual’s awareness of link between elevated cholesterol and cardiovascular disease (CVD) and their own cholesterol status. | **Perceived susceptibility** – define population at risk  
**Perceived severity** - specify consequences of the risk. | **Recruitment**- Each individual of six Wilco plants, 600-750 employees, is given questionnaires to measure their awareness. |
| **Intervention** - The employees view a video about CVD, followed by an individual counseling session to calculate each person’s individual risk. At the end of the session each participant will be offered an opportunity to sign up for upcoming cholesterol clinic screenings at the plant or advised to follow-up with personal physician. Material distributed to address the issue of susceptibility, severity and benefits. | **Perceived benefits** – Define action to take; how, where, when; clarify the positive effects to be expected.  
**Perceived barriers** – Identify and reduce perceived barriers through reassurance, correction of misinformation, incentives, and assistance.  
**Cues to action** – Provide how-to information, promote awareness, and employ reminder systems. | **Reach** - The proportion of the intended target reached by the intervention  
**Dose delivered** – % of employees that view video, receive counseling, have screening.  
**Fidelity** – Represents the quality and integrity of the intervention as conceived by the developers. Can be measured as a questionnaire by the intervention providers in achieving goals of intermediate outcomes.  
**Implementation** – A composite score that indicates the extent to which the intervention has been implemented and received by the intended audience. |
| **Posttest** – Instrument designed to measure changes in perception of susceptibility, severity, benefits and barriers offered after the cholesterol test. | **Self-efficacy** – Enhance sense that one can execute desired behavior. | **Outcomes**- Measures changes in perception about HBM constructs and self-efficacy |
Types of Logic Models

- Theory Model
- Service Model
- Evaluation Model

- [www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf](http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf)
- [http://national.unitedway.org/about/summary.cfm](http://national.unitedway.org/about/summary.cfm)
Individual/Pair Activity

Evaluation Theory/ Logic Models
Resources for Evaluation

- Funding
- Staff time
- Evaluator time/expertise
- Staff cooperation
- Planning for evaluation and needed resources early in process
Nature of Evaluator/Stakeholder Relationship

Who are stakeholders

– Policy/decision makers
– Program sponsors
– Evaluation sponsors
– Target participants
– Program managers/staff
– Program competitors
– Contextual stakeholders
– Evaluation and research community
Nature of Evaluator/ Stakeholder Relationship

Stakeholder involvement
1. Identify stakeholders
2. Involve stakeholders early
3. Involve stakeholders continuously
4. Involve stakeholders actively
5. Establish a structure (conceptual framework/ logic model)

(Reineke, 1991)
Nature of Evaluator/Stakeholder Relationship

- Independent evaluation
- Participatory/collaborative evaluation
- Empowerment evaluation
5 Types of Evaluations

1. Needs assessment
2. Assessment of Program Theory
3. Assessment of Program Process
4. Impact Assessment
5. Efficiency Assessment
Evaluation Questions

1. Needs assessment-
   – Questions about the social conditions a program addresses

2. Assessment of Program Theory
   – Questions about the program design

(Rossi, Lipsey and Freeman 2004)
Evaluation Questions

3. Assessment of Program Process
   • Questions about operations, implementation

4. Impact Assessment
   • Questions about outcomes and impact

5. Efficiency Assessment
   • Questions about cost and cost effectiveness

(Rossi, Lipsey and Freeman 2004)
Needs Assessment

• What are the nature and magnitude of the problem?
• What are the characteristics of the population?
• What are the needs of the population?
• What services are needed?
Assessment of Program Theory

• What are the best delivery systems for services?
• How should the program be designed?
• What is the underlying theoretical basis for the intervention(s)?
• Are the activities “causally linked” to outcomes in a logical fashion?
Cholesterol Reduction Program Model

- **Project Theory**: Health Belief Model/SOC Model
- **Intervention Level**: Business, Group, Individual
- **Intervention Processes**: Program Info, Health Education, Screening, Follow up/Referral, Education
- **Intermediate Outcomes**: Awareness of costs related to cholesterol, Awareness of need to control cholesterol, % of persons that have had screening
- **Impact Outcomes**: Costs related to high cholesterol, Awareness of HBM concepts, % of persons on appropriate treatment
- **Final Outcomes**: Reduce deaths due to CVD

Program Evaluation
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Assessment of Program Process

• Is the program serving the target population?
• Are there unserved persons?
• Are objectives being met?
• Is the program being implemented as planned (fidelity)?
Impact Assessment

- Are the desired outcomes being achieved?
- Are the services having the desired effect?
- Are there unintended effects?
- Are there segments of the target population that are being differentially affected?
Kellogg Basic Logic Model

Resources/Inputs → Activities → Outputs → Outcomes → Impact

Your Planned Work → Your Intended Results

Process/formative evaluation → Summative/outcome evaluation

Program Evaluation
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Efficiency Assessment

• Are resources being used as intended?
• Are resources being used effectively?
• Is the cost reasonable given outcomes?
• Are there alternative approaches that would be more efficient?
The Evaluation Hierarchy

Assessment of Need

Assessment of Program Design and Theory

Assessment of Program Process and Implementation

Assessment of Outcome/Impact

Assessment of Cost and Effectiveness

Time/Program Maturity
Issel’s Pyramid

- Direct Health Care Services
- Enabling Services
- Population-Based Services
- Infrastructure Services

Issel 2009
Break
Welcome

- Use this web to learn about the CDC Evaluation Working Group and its effort to promote program evaluation in public health.
- Links to the left provide an overview of the group, highlights of a framework for program evaluation, and additional resources that may help when applying the framework.
- Some documents on this web are stored in Adobe Acrobat files. If you do not have a copy of the Acrobat Reader, it can be downloaded for free from Adobe.

For problems or questions regarding this site contact: TChapel@cdc.gov
6 Steps in CDC Framework

- Engage Stakeholders
- Describe The Program
- Focus The Evaluation
- Gather Credible Evidence
- Justify Conclusions
- Ensure Use of Evaluation Findings and Share Lessons Learned
CDC Framework For Program Evaluation Graphic

Steps
- Engage stakeholders
- Ensure use and share lessons learned
- Justify conclusions
- Gather credible evidence
- Describe the program
- Focus the evaluation design

Standards
- Utility
- Feasibility
- Propriety
- Accuracy

CDC 2005
Purposes

- The framework was developed to:
  - Summarize and organize the essential elements of program evaluation
  - Provide a common frame of reference for conducting evaluations
  - Clarify the steps in program evaluation
  - Review standards for effective program evaluation
  - Address misconceptions about the purposes and methods of program evaluation

CDC 2005
Types of Evaluation Questions

- **Implementation**: Were your program’s activities put into place as originally intended?

- **Effectiveness**: Is your program achieving the goals and objectives it was intended to accomplish?

- **Efficiency**: Are your program’s activities being produced with appropriate use of resources such as budget and staff time?

- **Cost-Effectiveness**: Does the value or benefit of achieving your program’s goals and objectives exceed the cost of producing them?

- **Attribution**: Can progress on goals and objectives be shown to be related to your program, as opposed to other things that are going on at the same time?
CDC suggests their framework can be used across a broad scope of “programs” including:

- Direct service interventions
- Community mobilization efforts
- Research initiatives
- Surveillance systems
- Policy development activities
- Outbreak investigations
- Laboratory diagnostics
- Communication campaigns
- Infrastructure building projects
- Training and education services
- Administrative systems; and
- Others
Steps in Evaluation Practice

Engage stakeholders
Those involved, those affected, primary intended users

Describe the program
Need, expected effects, activities, resources, stage, context, logic model

Focus the evaluation design
Purpose, users, uses, questions, methods, agreements

Gather credible evidence
Indicators, sources, quality, quantity, logistics

Justify conclusions
Standards, analysis/synthesis, interpretation, judgment, recommendations

Ensure use and share lessons learned
Design, preparation, feedback, follow-up, dissemination

CDC 2005
Potential Stakeholders in Public Health Programs

- Program managers and staff.
- Local, state, and regional coalitions interested in the public health issue.
- Local grantees of your funds.
- Local and national advocacy partners.
- Other funding agencies, such as national and state governments.
- State or local health departments and health commissioners.
- State education agencies, schools, and other educational groups.
- Universities and educational institutions.
- Local government, state legislators, and state governors.
- Privately owned businesses and business associations.
- Health care systems and the medical community.
- Religious organizations.
- Community organizations.
- Private citizens.
- Program critics.
- Representatives of populations disproportionately affected by the problem.
- Law enforcement representatives.
Identifying Stakeholders
Child Lead Poisoning Prevention Program

<table>
<thead>
<tr>
<th>Who are the key stakeholders we need to:</th>
<th>Increase credibility of our efforts</th>
<th>Implement the interventions that are central to this effort</th>
<th>Advocate for changes to institutionalize this effort</th>
<th>Fund/authorize continuation or expansion of this effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician associations</td>
<td>Increase credibility of our efforts</td>
<td>Implement the interventions that are central to this effort</td>
<td>Advocate for changes to institutionalize this effort</td>
<td>Fund/authorize continuation or expansion of this effort</td>
</tr>
<tr>
<td>Community associations</td>
<td>Physician associations</td>
<td>State and local health departments</td>
<td>Advocacy groups</td>
<td>Legislators and policymakers at Federal and state levels</td>
</tr>
<tr>
<td></td>
<td>Housing authorities</td>
<td>Maternal and child health groups</td>
<td>CDC</td>
<td>Private industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physician associations</td>
<td>Court system</td>
<td></td>
</tr>
</tbody>
</table>
## What Is Important to Stakeholders?

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>What component of intervention/outcome matters most to them</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Physician associations</td>
<td>Sufficient “yield” of EBLL children to make their screening efforts “worth their time.” Clear referral mechanisms that are easy and work.</td>
</tr>
<tr>
<td>2 Community associations</td>
<td>Cleaning up housing in their neighborhood Support for families with EBLL children.</td>
</tr>
<tr>
<td>3 Housing authorities</td>
<td>No additional monetary and time burden for toxic clean-ups.</td>
</tr>
<tr>
<td>4 State and local health departments</td>
<td>Efforts lead to improved health outcome for EBLL children.</td>
</tr>
<tr>
<td>5 Advocacy groups</td>
<td>EBLL is seen as a housing problem and not a “failure” or example of bad child-rearing by poor families. No survey data collection with families.</td>
</tr>
<tr>
<td>6 Congress and policymakers</td>
<td>Efforts lead to improved health outcomes. “Cost-effectiveness” of the effort.</td>
</tr>
</tbody>
</table>

CDC 2005
Describe Program

Exhibit 2.1
Basic Program Logic Model

Inputs → Activities → Outputs → Short-term Effects/Outcomes → Intermediates Effects/Outcomes → Long-term Effects/Outcomes

Note that Worksheet 2A at the end of this chapter provides a simple format for doing this categorization of activities and outcomes, no matter what method is used. Here, for the CLPP, we completed the worksheet using the first method.

CLPP Program: Listing Activities and Outcomes

<table>
<thead>
<tr>
<th>Activities</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outreach</td>
<td>Lead source identified</td>
</tr>
<tr>
<td>Screening</td>
<td>Families adopt in-home techniques</td>
</tr>
<tr>
<td>Case management</td>
<td>EBLL children get medical treatment</td>
</tr>
<tr>
<td>Referral to medical treatment</td>
<td>Lead source gets eliminated</td>
</tr>
<tr>
<td>Identification of EBLL children</td>
<td>EBLL reduced</td>
</tr>
<tr>
<td>Environmental assessment</td>
<td>Developmental “slide” stopped</td>
</tr>
<tr>
<td>Environmental referral</td>
<td>Quality of Life (Q of L) improved</td>
</tr>
<tr>
<td>Family training</td>
<td></td>
</tr>
</tbody>
</table>
### CLPP Program: Sequencing Activities and Outcomes

<table>
<thead>
<tr>
<th>Early Activities</th>
<th>Later Activities</th>
<th>Early Outcomes</th>
<th>Later Outcomes</th>
</tr>
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<tbody>
<tr>
<td>Outreach</td>
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<tr>
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<td>Family training</td>
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<td></td>
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</tbody>
</table>

### CLPP Program: Logic Model with Inputs and Outputs

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Early Activities</th>
<th>Later Activities</th>
<th>Outputs</th>
<th>Early Outcomes</th>
<th>Later Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds</td>
<td>Outreach</td>
<td>Case management</td>
<td>Pool (#) of eligible children</td>
<td>Lead source identified</td>
<td>EBLL reduced</td>
</tr>
<tr>
<td>Trained staff for screening and clean-up</td>
<td>Screening</td>
<td>Referral to medical treatment</td>
<td>Pool (#) of screened children</td>
<td>Lead source gets eliminated</td>
<td>Developmental “slide” stopped</td>
</tr>
<tr>
<td>Relationships with organizations</td>
<td>Identification of EBLL children</td>
<td>Environmental assessment</td>
<td>Referrals (#) to medical treatment</td>
<td>Families adopt in-home techniques</td>
<td>Q of L improved</td>
</tr>
<tr>
<td>Legal authority</td>
<td></td>
<td>Environmental referral</td>
<td>Pool (#) of “leaded” homes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family training</td>
<td>Referrals (#) for clean-up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Program Evaluation
June 24, 2011
Clean up the logic model. Early versions are likely to be sloppy, and a nice, clean one that is intelligible to others often takes several tries.
Focus the Evaluation

• Implementation/Process

• Effectiveness/Outcome

• Efficiency

• Attribution
Implementation/Process

Questions about:

• The locale where services or programs are provided (e.g., rural, urban)
• The number of people receiving services
• The economic status and racial/ethnic background of people receiving services
• The quality of services
• The actual events that occur while the services are delivered

CDC 2005
Effectiveness/Outcome

Questions about:
- Changes in people’s attitudes and beliefs
- Changes in risk or protective behaviors
- Changes in the environment, including public and private policies, formal and informal enforcement of regulations, and influence of social norms and other societal forces
- Changes in trends in morbidity and mortality.

CDC 2005
Efficiency

Questions about:

• Are your program’s activities being produced with minimal use of resources such as budget and staff time?

• What is the volume of outputs produced by the resources devoted to your program?

• Does the value or benefit of your program’s outcomes exceed the cost of producing them?
Questions about:

• Can the outcomes that are being produced be shown to be related to your program, as opposed to other things that are going on at the same time?
Gather Evidence

Evidence gathering must include consideration of each of the following:

- Indicators
- Sources of evidence/methods of data collection
- Quality
- Quantity
- Logistics

CDC 2005
Gather Evidence

### Table 4.1

Provider Immunization Program:
Indicators for Program Component in Our Evaluation Focus

<table>
<thead>
<tr>
<th>Program Component</th>
<th>Indicator(s)</th>
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<tbody>
<tr>
<td>Provider training</td>
<td>A series of 3 trainings will be conducted in all 4 regions of the state</td>
</tr>
<tr>
<td>Nurse educator LHD presentations</td>
<td>Nurse educators will make presentations to 10 largest local health departments (LHDs)</td>
</tr>
<tr>
<td>Physicians peer ed rounds</td>
<td>Physicians will host peer ed rounds at 10 largest hospitals</td>
</tr>
<tr>
<td>Providers attend trainings and rounds</td>
<td>Trainings will be well attended and reflect good mix of specialties and geographic representation</td>
</tr>
<tr>
<td>Providers receive and use tool kits</td>
<td>50%+ of providers who receive tool kit will report use of it (or “call to action” cards will be received from 25% of all providers receiving tool kit)</td>
</tr>
<tr>
<td>LHD nurses conduct private provider consults</td>
<td>Trained nurses in LHDs will conduct provider consults with largest provider practices in county</td>
</tr>
<tr>
<td>Provicer KAB increases</td>
<td>Providers show increases in knowledge, attitudes, and beliefs (KAB) on selected key immunization items</td>
</tr>
<tr>
<td>Provider motivation increases</td>
<td>Provider intent to immunize increases</td>
</tr>
</tbody>
</table>

CDC 2005
Data Sources

Secondary sources

- Current Population Survey and other U.S. Census files
- Behavioral Risk Factor Surveillance System (BRFSS)
- Youth Risk Behavior Survey (YRBS)
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Cancer registries
- State vital statistics
- Various surveillance databases
- National Health Interview Survey (NHIS)
Data Sources

Primary sources and methods

• Surveys, including personal interviews, telephone, or instruments completed in person or received through the mail or e-mail

• Group discussions/focus groups

• Observation

• Document review, such as medical records, but also diaries, logs, minutes of meetings, etc.

CDC 2005
### Table 4.3
Provider Immunization Education Program: Data Collection Methods and Sources for Indicators

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<tr>
<td>Trainings will be well-attended and reflect good mix of specialties and geographic representation</td>
<td>Registration information</td>
</tr>
<tr>
<td>50%+ of providers who receive tool kit will report use of it (or &quot;call to action&quot; cards will be received from 25% of all providers receiving tool kit)</td>
<td>Survey of providers, Analysis/count of call-to-action cards</td>
</tr>
<tr>
<td>Trained nurses in LHDs will conduct provider consults with largest provider practices in county</td>
<td>Survey of nurses, survey of providers, or training logs</td>
</tr>
<tr>
<td>Providers show increases in knowledge, attitudes, and beliefs (KAB) on selected key immunization items</td>
<td>Survey of providers, or focus groups, or intercepts</td>
</tr>
<tr>
<td>Provider intent to immunize increases</td>
<td>Survey of providers, or focus groups, or intercepts</td>
</tr>
</tbody>
</table>
Table 4.4
CLPP: Indicators and Data Collection Methods/Sources

<table>
<thead>
<tr>
<th>Logic Model Element</th>
<th>Indicator(s)</th>
<th>Data Source(s) and Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outreach</td>
<td>High-risk children and families in the district have been reached with relevant information</td>
<td>Logs of direct mail and health fair contacts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Demographic algorithm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geographic Information System (GIS) algorithm</td>
</tr>
<tr>
<td>Screening</td>
<td>High-risk children have completed initial and follow-up screening</td>
<td>Logs and lab data</td>
</tr>
<tr>
<td>Environment assessment</td>
<td>Environments of all children over EBLL threshold have been assessed for lead poisoning</td>
<td>Logs of environmental health staff</td>
</tr>
<tr>
<td>Case management</td>
<td>All children over FRI threshold have a case management plan including social, medical, and environmental components</td>
<td>Case file of FRI child</td>
</tr>
<tr>
<td>Family training</td>
<td>Families of all children over EBLL threshold have received training on household behaviors to reduce EBLL</td>
<td>Logs of case managers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of families</td>
</tr>
<tr>
<td>“Leaded” houses referred</td>
<td>All houses of EBLL children with evidence of lead have been referred to housing authority</td>
<td>Logs and case files</td>
</tr>
<tr>
<td>“Leaded” houses cleaned</td>
<td>All referred houses have been cleaned up</td>
<td>Follow-up assessment by environmental health staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Logs of housing authority</td>
</tr>
</tbody>
</table>
Justify Conclusions
Interpreting Findings

Tips To Remember When Interpreting Your Findings

• Interpret evaluation results with the goals of your program in mind.
• Keep your audience in mind when preparing the report. What do they need and want to know?
• Consider the limitations of the evaluation:
  • Possible biases
  • Validity of results
  • Reliability of results
• Are there alternative explanations for your results?
• How do your results compare with those of similar programs?
• Have the different data collection methods used to measure your progress shown similar results?
• Are your results consistent with theories supported by previous research?

CDC 2001
Ensure Use

Evaluation Report

• Executive Summary
• Background and Purpose
  o Program background
  o Evaluation rationale
  o Stakeholder identification and engagement
  o Program description
    o Key evaluation questions/focus
• Evaluation Methods
  o Design
  o Sampling procedures
  o Measures or indicators
  o Data collection procedures
  o Data processing procedures
  o Analysis
    o Limitations
• Results
• Discussion and Recommendations

CDC 2005
Standards for "Effective" Evaluation

Utility
Serve the information needs of intended users

Feasibility
Be realistic, prudent, diplomatic, and frugal

Propriety
Behave legally, ethically, and with due regard for the welfare of those involved and those affected

Accuracy
Reveal and convey technically accurate information
Bibliography

• Issel, L. M. (2009). Health Program Planning and Evaluation: A Practical approach or Community Health, Sudbury, MA: Jones and Bartlett.
Lunch
Activity

Evaluation Plan Review/Development
Selecting Process Measures and Applying QI for Process Improvement
The Quality Trilogy
(adapted from Juran)

<table>
<thead>
<tr>
<th>Quality Planning</th>
<th>Quality Control &amp; Improvement (During Operations)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model for Improvement</td>
</tr>
<tr>
<td></td>
<td>What are we trying to accomplish?</td>
</tr>
<tr>
<td></td>
<td>How will we know that a change is an improvement?</td>
</tr>
<tr>
<td></td>
<td>What change can we make that will result in improvement?</td>
</tr>
</tbody>
</table>

**Sporadic Spike**

- Original Zone of Quality Control
- Process not Achieving Desired Results (An Opportunity for Improvement)
- Quality Improvement

**Time**

**Operation**

- Define Opportunity & Stakeholder Needs
- Design & Pilot Service or Process
- Take Action
- Monitor Impact / Results of Service

MCPP Healthcare Consulting
Quality Planning Cycle

**Define Opportunity & Stakeholder Needs**
- Problem/Opportunity to Address
- Identify clients/stakeholders and needs
- Translate stakeholders needs
- Establish performance measures based on needs

**Take Action**
- Fully implement if expected outcomes achieved
- Initiate QI if outcomes not achieved

**Design & Pilot Service/Process**
- Develop activity to meet needs
- Establish outcome measures
- Implement service/process

**Monitor Impact/Results of Service**
- Measure Outputs and Outcomes
- Compare actual results to expected results

MCPP Healthcare Consulting
The 4 Dimensions of Quality

- Quality by Design
- Quality by Process Improvement (NIATx focus)
- Quality by Compliance
- Quality by Inspection

Active

Reactive
Model for Improvement

1. What are we trying to accomplish?

2. How will we know that a change is an improvement?

3. What changes can we make that will result in an improvement?

Reference:
Langley, Nolan, Nolan, Norman, & Provost. The Improvement Guide
AIM Statement
1. What are we trying to accomplish?
2. How will we know that a change is an improvement?
3. What change can we make that will result in an improvement?
4. What baseline data do you have?

Quality Improvement Project
Rapid Cycle Improvement AIM Statement

Quality Improvement Project: ____________________________

Step 1: What Are We Trying to Accomplish? (A brief statement of the aim)

Step 2: How Will We Know That a Change is an Improvement? (Potential measures of success, including implications for future improvements that build on the improvements made in this project)

Long term

Medium term

Short term

Step 3: What Changes Can We Make That Will Result in an Improvement?
How did you identify this opportunity, with what data, from what source(s)? Brief description of the problem with any data currently available

Initial hypotheses and description of data needed to focus the project and the development of an intervention. Are you aware of benchmark data or best practices?

Impact/overlay with other programs and activities

Who are the stakeholders (internal and external) and what are their concerns

Step 4. What baseline data do we have for this Aim?
The PDSA Cycle for Learning and Improvement

**Act**
- What changes are to be made?
- Next cycle?

**Plan**
- Objective
- Questions and predictions (why)
- Plan to carry out the cycle (who, what, where, when)
- Plan for data collection

**Study**
- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

**Do**
- Carry out the plan
- Document problems and unexpected observations
- Begin analysis of the data
Adapted from *The ABC’s of PDCA*, Gorenflo and Moran

**Plan**

1. Identify and Prioritize Opportunities
2. Develop AIM Statement
3. Describe the Current Process
4. Collect Data on Current Process
5. Identify All Possible Causes
6. Identify Potential Improvements
7. Develop Improvement Theory
8. Develop Action Plan

**Check/Study**

1. Review analysis and make conclusions

**Act**

Adopt

Adapt

Abandon

Standardize/Hold the Gains

DO - Modify/Try Again

Plan

**Do**

1. Test the Improvement
2. Collect and Analyze the data
3. Document Problems, Observations, and Lessons Learned

*MCPP Healthcare*
# Commonly Used QI Tools

<table>
<thead>
<tr>
<th>QI Tool</th>
<th>What the Tool Does</th>
<th>Public Health Memory Jogger II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Network Diagram/Gantt Chart</td>
<td>Used to: Schedule sequential and simultaneous tasks. Gives team members the chance to show what their piece of the plan requires and helps team members see why they are critical to the success of the project. Helps teams focus on critical tasks.</td>
<td>Page 3</td>
</tr>
<tr>
<td>Affinity Diagram</td>
<td>Used to: Gather and group ideas. Encourages team member creativity by breaking down communication barriers. Encourages ownership of results and helps overcome &quot;team paralysis&quot; due to an array of options and a lack of consensus.</td>
<td>Page 12</td>
</tr>
<tr>
<td>Brainstorming</td>
<td>Used to: Create bolder and better ideas. Encourages open thinking and gets all team members involved and enthusiastic. Allows team members to build on each other's creativity while staying focused on the task at hand.</td>
<td>Page 19</td>
</tr>
<tr>
<td>Cause and Effect/ Ishikawa Diagram</td>
<td>Used to: Find and cure causes, not symptoms. Enables a team to focus on the content of the problem, not the problem's history or differing personal issues of team members. Creates a snapshot of the collective knowledge and consensus of a team around a problem. Focusses the team on causes, not symptoms.</td>
<td>Page 23</td>
</tr>
<tr>
<td>Check Sheet</td>
<td>Used to: Count and accumulate data. Creates easy-to-understand data—makes patterns in the data become more obvious. Helps build a cleaner picture of &quot;the facts&quot;, as opposed to opinions of each team member, through observation.</td>
<td>Page 31</td>
</tr>
<tr>
<td>Control Charts</td>
<td>Used to: Recognize sources of variation. Serves as a tool for detecting and monitoring process variation. Provides a common language for discussing process performance. Helps improve a process to perform with higher quality, lower cost, and higher effective capacity.</td>
<td>Page 36</td>
</tr>
<tr>
<td>Data Points</td>
<td>Used to: Turn data into information. Determines what type of data you have. Determines what type of data is needed.</td>
<td>Page 52</td>
</tr>
<tr>
<td>Flowchart</td>
<td>Used to: Illustrate a picture of the process. Allows the team to come to agreement on the steps of the process. Can serve as a training aid. Shows unexpected complexity and problem areas. Also shows where simplification and standardization may be possible. Helps the team compare and contrast the actual versus the ideal flow of a process to help identify improvement opportunities.</td>
<td>Page 56</td>
</tr>
<tr>
<td>Force Field Analysis</td>
<td>Used to: Identify positives and negatives of change. Presents the &quot;positives&quot; and &quot;negatives&quot; of a situation so they are easily compared. Forces people to think together about all aspects of making the desired change to a permanent one.</td>
<td>Page 63</td>
</tr>
<tr>
<td>Histogram</td>
<td>Used to: Identify process centering, spread, and shape. Displays large amounts of data by showing the frequency of occurrences. Provides useful information for predicting future performance. Helps indicate there has been a change in the process. Illustrates quickly the underlying distribution of the data.</td>
<td>Page 66</td>
</tr>
</tbody>
</table>

Developed from *The Public Health Memory Jogger II* (2007)
### Commonly Used QI Tools:

**Interrelationship Digraph**
- **Used for:** Look for drivers and outcomes.
- **Features:**
  - Encourages team members to think in multiple directions rather than linearly.
  - Explores the cause and effect relationships among all the issues.
  - Allows a team to identify root cause(s) even when credible data doesn’t exist.

**Mesar Diagram**
- **Used for:** Understand relationships.
- **Features:**
  - Makes patterns of responsibilities visible and clear so that there is even distribution of tasks.
  - Helps a team come to consensus on small decisions.
  - Enhances quality and support for the final decision.

**Nominal Group Technique**
- **Used for:** Rank for consensus.
- **Features:**
  - Allows every team member to rank issues without being pressured by others.
  - Makes a team’s consensus visible.
  - Puts quiet team members on an equal footing with more dominant members.

**Pareto Chart**
- **Used for:** Focus on key problems.
- **Features:**
  - Helps teams focus on those causes that will have the greatest impact if solved. (Based on the Pareto principle – 20% of the sources cause 80% of the problem.)
  - Progress is measured in a highly visible format that provides incentive to push on for more improvements.

**Prioritization Matrix**
- **Used for:** Weigh your options.
- **Features:**
  - Forces a team to focus on the best thing(s) to do and not everything they could do.
  - Increases the chance of follow-through because consensus is sought at each step in the process (from criteria to conclusions).

**Process Capability**
- **Used for:** Measure conformance to customer requirements.
- **Features:**
  - Helps a team answer the question “Is the process capable?”
  - Helps to determine if there has been a change in the process.

**Radar Chart**
- **Used for:** Rate organization’s performance.
- **Features:**
  - Makes concentrations of strengths and weaknesses visible.
  - Clearly defines full performance in each category.
  - Captures the different perceptions of all the team members about organization performance.

**Run Chart**
- **Used for:** Track trends.
- **Features:**
  - Monitors the performance of one or more processes over time to detect trends, shifts, or cycles.
  - Allows a team to compare a performance measure before and after implementation of a solution to measure its impact.

**Scatter Diagram**
- **Used for:** Measure relationships between variables.
- **Features:**
  - Supplies the data to confirm a hypothesis that two variables are related.
  - Provides a follow-up to a Cause & Effect Diagram to find out if there is more than just a consensus connection between cause and effect.

**Tree Diagram**
- **Used for:** Map the tasks for implementation.
- **Features:**
  - Allows all participants (and reviewers outside the team) to check all of the logical links and compassions at every save or pass metric.
  - Reveals the real level of complexity involved in the achievement of my goal, making potentially overwhelming projects manageable, as well as uncovering unknown complexity.

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*Developed from The Public Health Memory Jogger II (2007)*
Where can you apply QI?

Quality Planning

Process Improvement
Illinois Resources

• www.iphionline.org
  – Click on the IL Accreditation Development Project Tab to find resources.

• http://iphionline.wikispaces.com/
  – Archived Webinars and QI resources
Pair Activity

Selecting/Revising Process Evaluation Plans
Review of the Day / Evaluation
IPHI provides training and consultation services.

For assistance, contact:

Laurie Call
Laurie.call@iphionline.org
312.850.4744