

***Handling Data:  
From Logic Model to Final Report***

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# 1 Using Program Theory

## Notes

- Program evaluation can be defined as the **use of social research procedures to systematically investigate the effectiveness of social intervention programs** (Rossi, Freeman, & Lipsey, 2004) and **to determine their merit, worth and value** (Scriven, 1991).
- A **rigorous evaluation process** is needed today to address issues of criticality and efficiency and to provide *information of sufficient credibility under scientific standards to provide a confident basis for action and to withstand criticism aimed at discrediting it.* (Rossi et al., 2004)
- A systems approach provides the underpinning for this workshop. We will look at a way to develop a sound **conceptual framework** to guide your evaluation work from logic model to final report.
- Use of a conceptual framework or **program theory** grounded in relevant program knowledge to guide evaluation efforts took hold in the 1990's. This approach has moved away from methods-driven designs towards more rigorous, thoughtful, scientific or evidence-based endeavors (Donaldson 2007).
- **Program theory** is the **logic or glue** that links parts of a particular program together and describes the relationships between **program resources, program activities** and **program outcomes**.
- It is a **giant hypothesis** that will be proven (or not) as a result of your evaluation activities and can be described in a series of IF-THEN statements.
- It is the set of assumptions about the relationships between the strategy and tactics the program has adopted and the social benefits it is expected to produce (Rossi et al., 2004).
- A logic model is simply the **visual representation** of the program theory for any particular program. Often, however, they are incomplete or too complex for actual use.

A Program Theory has two main components:

### 1. Program Process:

- **Inputs**—Foundational supports and resources that are required to develop, enable, organize and maintain program activities
- **Implementation Processes and Key Activities**—Ways in which the intended target populations receive the intended interventions through the program's key activities
- **Outputs**—Services and other program products created by the program that demonstrate and provide evidence that program activities have occurred.

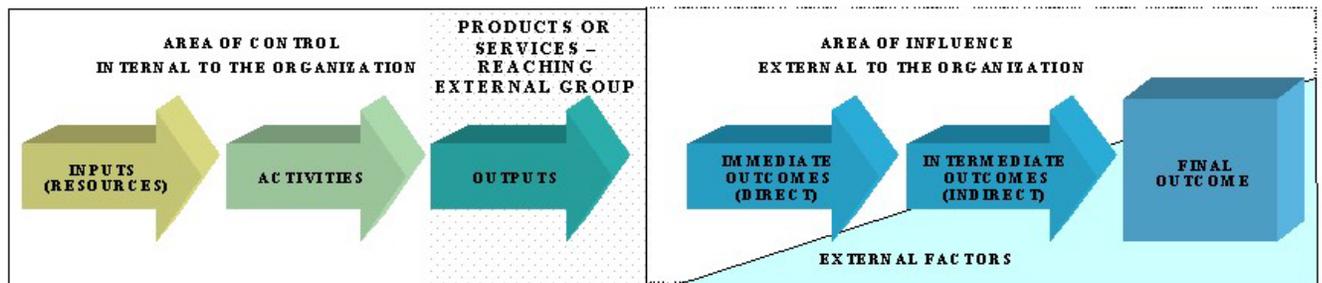


## 2. Program Outcomes:

- Collective results of program processes which show how the intended interventions have brought about the desired social benefits of the program.
- Outcomes are typically expanded into three groups which are increasingly removed from direct program processes, or are removed in term of expended time, or are increasingly influenced by other non-program factors, including:
  - Immediate Outcomes
  - Intermediate Outcomes
  - Long-Term Outcomes

### Example #1

Here is an example of a simple program theory—the Canadian Treasury Board’s Results Chain Model:



### Discussion and reflection

- What is the difference between control and influence in an evaluation?
- How can you address attribution vs. contribution issues in your current study?

### Example #2

Here is a program theory template that I use all the time. How does it differ from the usual logic model?



**Name of Program**

**Process**

**Outcomes**

**Organizational Plan/  
Admin Supports/  
Inputs/Enablers**

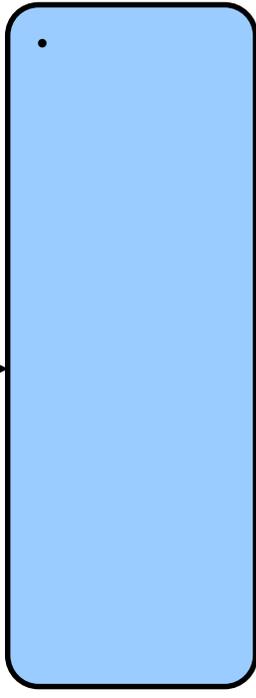
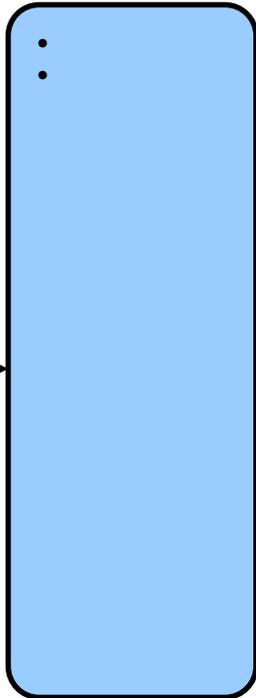
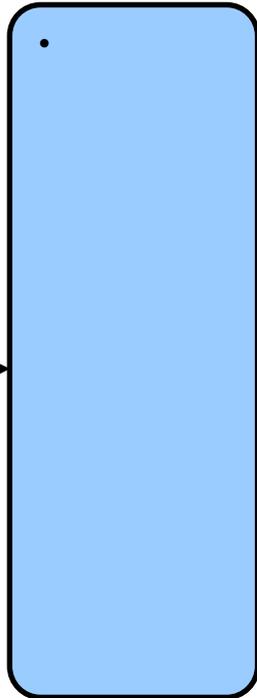
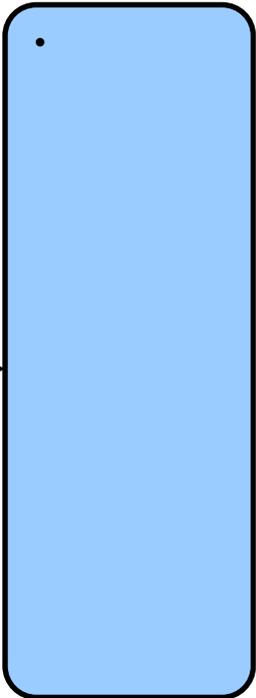
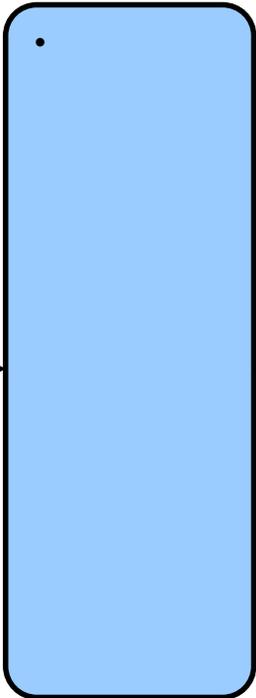
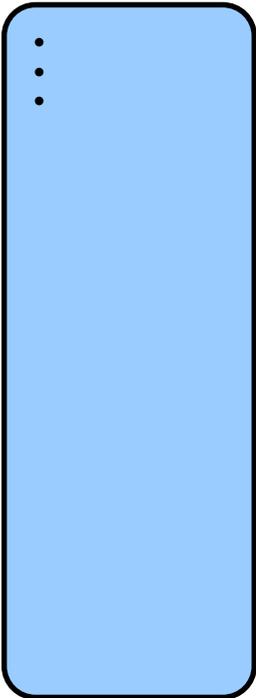
**Service Utilization  
Plan/ Program  
Implementation/  
Process**

**Outputs**

**Short-Term  
Outcomes**

**Intermediate-  
Term  
Outcomes**

**Long-Term  
Outcomes**



## Case Study

### Linking Tools in the Methadone Maintenance Guidelines Program Evaluation<sup>1</sup> Program Description

Until recently, Opioid Dependency Treatment (ODT) was limited in Alberta and there existed a lack of a comprehensive clinical standard or guideline resulting in variations in Methadone Maintenance Treatment (MMT) throughout the province. The College of Physicians and Surgeons of Alberta (CPSA) proposed *The Development and Endorsement of Alberta-based Methadone Maintenance Guidelines Project* and it was funded by Health Canada. Following the development, endorsement and dissemination of the Guidelines, it was planned that standards would be developed to assist in conducting audits of physicians' practice.

The project had three main goals:

1. To encourage more physicians to obtain methadone licenses for opioid dependency in order to increase access to ODT in communities across Alberta;
2. To contribute to the reduction of illicit drug use, improving health status of opioid-dependent individuals as a result of access to treatment, decreasing transmission of HIV, HCV and HBV, decreasing illegal activity, increasing employment, decreasing cost to society and decreasing mortality; and
3. To ensure patient safety in the provisions of ODT.

Building on the work already under way by a panel of expert physicians, project activities included the following:

- Establish a Guideline Development Committee;
- Develop and endorse Alberta-based methadone guidelines;
- Test the guidelines with physicians currently providing ODT;
- Conduct stakeholder consultations;
- Conduct communication, orientation and training sessions regarding the guidelines;
- Develop standards based on the endorsed guidelines to form the foundation of the clinic and practice audit processes for ODT;
- Conduct a project evaluation; and
- Prepare interim and final reports for the CPSA Council and other interested stakeholders.

### Evaluation Approach

The evaluation approach used in this study was consultative in nature. I worked with CPSA staff and the Guidelines Development Committee in the design of the Evaluation Work Plan. Drafts of study tools were circulated to the Committee as well as CPSA staff for feedback to ensure that questions reflected their research needs. CPSA staff members were updated regularly during the design, data collection, analysis and reporting periods through brief email/ telephone contacts and regular Status Reports. Finally, a draft version of this report was circulated to CPSA staff and the Guidelines Development Committee for feedback prior to finalization.

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<sup>1</sup> Information on this program evaluation has been provided by the College of Physicians and Surgeons of Alberta for training purposes. Extracts for the case study come from: *Final Report: Evaluation of the Development and Endorsement of Alberta-based Methadone Maintenance Guidelines*. Barrington Research Group, Inc. June 30, 2006.



The evaluation of this project was utilization-focused in its design, with an on-going interest in *intended use by intended users*.<sup>2</sup> The evaluation focused on the following key objectives:

1. To assess the credibility/ acceptance of guidelines by the physicians prescribing methadone after the launch of the methadone guidelines.
2. To determine if an increase in methadone licenses for opioid dependence therapy (ODT) has occurred and, if possible, identify linkages to the availability of the guidelines in Alberta.
3. To determine if an increase has occurred in the understanding of the disease of addiction among primary care physicians.

There were three phases to this evaluation project, each with its associated tasks. These included the following.

#### **Phase 1: Designing the Evaluation**

- I met with CPSA staff and the Guidelines Development Committee;
- The Evaluation Work Plan was prepared, circulated for feedback and finalized. It included the Program Logic Model and the Data Collection Matrix (DCM);
- Key documents were identified and obtained; and
- The planned study methodology, including a sampling strategy, was confirmed.

#### **Phase 2: Instrument Development and Data Collection**

- The data collection tools were developed, circulated for feedback and finalized;
- The documents were reviewed;
- A training session was observed;
- The key stakeholders were interviewed; and
- The physician Internet survey was conducted.

#### **Phase 3: Data Analysis and Reporting**

- Data were analyzed using the Statistical Package for the Social Sciences (SPSS) for quantitative data and Nvivo for qualitative data;
- Key Informants were interviewed;
- A draft version of the Final Evaluation Report was prepared, circulated for feedback and finalized; and
- The Final Evaluation Report was prepared.

### ***Program Logic Model***

In order to develop the research framework to answer these questions, an analysis of the program's assumptions (or program theory) was developed<sup>3</sup>. It is presented as a Program Logic Model and is comprised of three main components:

**The organizational plan**, or how the project gained, configured and deployed resources and how project activities were developed and maintained;

**The service utilization plan**, or how the intended target population received the intended interventions through the program's activities/ delivery system; and

**The impact theory**, or how the intended intervention for the specified target population brought about the desired social benefits, expanded into short-term, intermediate-term and long-term outcomes.

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<sup>2</sup> Patton, 1997.

<sup>3</sup> Rossi et. al., 2004.



# Methadone Maintenance Guidelines Program Theory

## Process

## Outcomes

### 1.0 Admin Supports/ Inputs/ Enablers

- 1.1 Administration
- 1.2 Resources
- 1.3 Expert Committee with Terms of Reference
- 1.4 Communication plan
- 1.5 Stakeholder consultation plan
- 1.6 Evaluation plan

### 2.0 Program Implementation/ Process

- 2.1 Provincial Guidelines are developed
- 2.2 Guidelines are approved
- 2.3 Guidelines are endorsed
- 2.4 Guidelines used to develop standards for audit process
- 2.5 Guidelines are launched by providing communication
- 2.6 Orientation is provided
- 2.7 Training is provided
- 2.8 Support for Guidelines is provided

### 3.0 Outputs

- 3.1 A training program and support processes related to the Guidelines are provided
- 3.2 Physicians have access to the Methadone Maintenance Standards & Guidelines
- 3.3 A clear role definition for clinics & community practitioners is available
- 3.4 An evaluation of the project is conducted

### 4.0 Short-Term Outcomes (6 months)

- 4.1 Physicians who have received training will find the Guidelines credible/ acceptable
- 4.2 They meet registration standards & receive license/ exemption
- 4.3 They understand the disease of addiction
- 4.4 Opioid-dependent individuals will experience increased access to treatment

### Outcomes

### 5.0 Intermediate- Term Outcomes (within 3 years)

- 5.1 Opioid-dependent individuals experience improved health status & decreased risk of contracting HIV, HCV, HBV
- 5.2 Albertans experience improved safety re: methadone treatment

### 6.0 Long-Term Outcomes (within 5 years)

- 6.1 Opioid-dependent individuals experience:
  - o Reduced illicit drug use
  - o Decreased related illegal activity
  - o Improved quality of life
  - o Decreased mortality
- 6.2 Albertans experience:
  - o Decreased transmission of HIV, HCV, HBV
  - o Decreased social cost
  - o Improved health care



The narrative that accompanied the Program Logic Model (i.e., the **IF-THEN** statements) is:

- **If** the appropriate administration and resources are provided for the project, and if a Guidelines Development Committee is established with appropriate terms of reference, and if plans are put in place for communications, stakeholder consultation, and a project evaluation; **and**
- **If** the *Standards & Guidelines for Methadone Maintenance Treatment in Alberta* are developed, approved and endorsed, and are used to develop appropriate standards for a practice audit process, and if the *Guidelines* are launched with appropriate communication, orientation, training and support; **and**
- **If**, as a result of these activities, a training program and support processes are provided, physicians have access to the *Guidelines*, a clearly defined role for clinics and community practitioners with regard to methadone maintenance treatment is made available, and an evaluation is conducted of the project; **then**
- Physicians who have received training in the *Guidelines* will find them credible and acceptable, will understand the disease of addiction; will meet registration standards and will receive a methadone license/ exemption; opioid-dependent individuals will experience increased access to treatment; **and**
- Opioid-dependent individuals in much of Alberta will experience improved health status and reduced risk of contracting HIV, HCV and HBV and Albertans will experience improved safety related to methadone treatment; **and**
- Opioid-dependent individuals will experience reduced illicit drug use and related illegal activity, improved quality of life, and decreased mortality; and Albertans in general will experience decreased transmission of HIV, HCV and HBV, decreased social costs, and improved health care.

### Discussion and reflection

- Why is writing the program theory as a series of IF-THEN statements useful?
- Who should be involved in this process?
- Why is defining the timeframe important?



## 2 Asking the Right Questions

### Notes

- Often the logic model stands alone. It becomes an end in itself. If it is not linked directly to the evaluation activities, the final information that is produced may not prove or disprove the program theory.
- To link the logic model to the actual study process, an evaluation framework, called the Data Collection Matrix (DCM), is developed.
- The DCM becomes the roadmap to guide the evaluation process. It links the topics identified in the logic model with:
  - Evaluation questions
  - Performance indicators
  - Data sources
  - And you can add other topics later if you wish
- The DCM keeps the evaluation research focused and manageable so that resources are used wisely to obtain the most pertinent information.
- It provides a documented common understanding of the scope of the research prior to undertaking any data collection activities because it is developed in collaboration with key stakeholders.
- The power of the design lies in the fact that it provides a tracking mechanism throughout the evaluation, even to the final report.

To develop a meaningful question, it has to be something you want to know that will make a difference to the program. Patton (2008) provides us with some helpful criteria for generating utilization-focused evaluation questions:

- Data can be brought to bear on the question; that is, it is truly an empirical question.
- There is more than one possible answer to the question; that is, the answer is not predetermined by the phrasing of the question.
- Stakeholders need to be involved in question development—but always in the context of the program theory that they have developed jointly with the evaluator.
- The intended users *want* to answer the question. They care about the answer to the question because it is not just for someone else, it is for them. They can indicate how they would answer the question; that is; they can specify the relevance of an answer for future action.

### Example #3

Here is a Data Collection Matrix template. I use it all the time. What changes or additions could you make to column headings?



| Client Name                           |                      |            |              |
|---------------------------------------|----------------------|------------|--------------|
| Data Collection Matrix                |                      |            |              |
| Evaluation Topics                     | Evaluation Questions | Indicators | Data Sources |
| <b>PROCESS</b>                        |                      |            |              |
| <b>1.0 Admin Supports/ Inputs</b>     |                      |            |              |
|                                       |                      |            |              |
| (add rows as needed)                  |                      |            |              |
| <b>2.0 Implementation</b>             |                      |            |              |
|                                       |                      |            |              |
| <b>3.0 Activity Outputs</b>           |                      |            |              |
|                                       |                      |            |              |
| <b>OUTCOMES</b>                       |                      |            |              |
| <b>4.0 Immediate-Term Outcomes</b>    |                      |            |              |
|                                       |                      |            |              |
| <b>5.0 Intermediate-Term Outcomes</b> |                      |            |              |
|                                       |                      |            |              |
| <b>6.0 Long-Term Outcomes</b>         |                      |            |              |
|                                       |                      |            |              |



### Tips on asking good questions:

- Link numbering with your logic model.
- Don't ask yes/no questions unless the evidence is quantitative in nature. Open-ended questions are harder to craft but yield rich information.
- Don't ask questions for which you cannot obtain the answer.
- Don't ask questions that you cannot afford to answer.
- Don't ask leading questions or ones that indicate a bias.
- Where standards are available, ask questions using them as benchmarks.
- Determine what is most important and start there.
- Because your questions are guided by the logic model, you will not get into the problem of adding extra questions just because someone likes them—they must fit the theory! If not, go back to the drawing board and revise the theory and logic model.
- Spend significant time developing good evaluation questions. It is worth the effort. You will know this because of the quality of data generated.

### Tips on designing a DCM

- Work down the template, not across.
- Once you have good questions, indicators are easier to define.
- Data sources come last—and methods become self-evident.
- **Inputs**—use to describe what is provided by the agency to support the program. Don't be judgmental here. You are just confirming that the inputs are available and what they look like, not evaluating their adequacy.
- **Implementation/Activities**—describe what the program did. Again, don't be judgmental. This will be the part of the final report that explains what happened in the program. Leave effectiveness of program components to Outputs.
- **Outputs**—these can also be considered Process Outcomes. Look at the Yellow Umbrella called “Process” in our Logic Model. Here we want evidence that activities happened. This includes “bean counting” types of questions like the ones accountants ask (how many?). This includes the degree of effectiveness of these activities (but not of goal achievement because that is Outcomes). It also includes satisfaction with the activities provided. Sometimes we look at Lessons Learned here as well.
- **Outcomes**—these are related directly to goal achievement. The short-, intermediate-, and long-term nature of them are determined by timeframe and distance away from program implementation. Watch your sequence of questions. They should be in some kind of order from more specific to more general. The answers to these questions should determine if the goals have been achieved, to what extent, and what else happened as a result.



- Expect to go through a number of drafts of the DCM with your client. Then circulate a revised draft more broadly (e.g., to your Steering Committee) for yet more feedback.
- Be sure to get sign-off on the final version—remember it is your roadmap for the rest of the evaluation project. Of course if things change, it can change too—but only if the program theory changes.

### **Case Study (cont'd)**

Here is the DCM from the Methadone Maintenance Guidelines Program Evaluation. The evaluation focused on collecting information to answer research questions related to the evaluation objectives, with a particular emphasis on determining the outcomes identified in the Program Logic Model and on issues of success, relevance and effectiveness of interest to CPSA. The DCM linked the evaluation topics identified in the Logic Model with the related evaluation questions, performance indicators and/ or research methods and data sources. This cross-referenced tool ensured the evaluation research remained focused and manageable and that resources were used wisely to collect the most pertinent information. The DCM also provided a documented common understanding of the scope of the research prior to undertaking any data collection activities and was reviewed and revised in consultation with CPSA staff.

**Note how topics in the Program Logic Model are reproduced and expanded in the DCM.**



## Data Collection Matrix for the Development and Endorsement of Alberta-based Methadone Maintenance Guidelines<sup>4</sup>

| Evaluation Topic                             | Evaluation Questions  | Indicators  | Data Sources   |
|--|---|---|--|
| <b>PROCESS</b>                               |   |   |  |
| <b>1.0 Inputs</b>                            |   |   |  |
| 1.1 Administration                           | 1.1.1 Was administration of the project effective?  | Evidence of administrative success/lack of success                              | Key Stakeholder Interviews   |
| 1.2 Resources                                | 1.2.1 Were resources used effectively in the development and endorsement of the Alberta-based Methadone Maintenance Guidelines? | Evidence of resource adequacy and use   | Document review (work plans, budgets, quarterly reports)                 |
| 1.3 Expert Committee with Terms of Reference | 1.3.1 Was an appropriate Expert Committee set up for the project?   | Views on appropriateness of Expert Committee's role and makeup                  | Document review (minutes)<br>Key Stakeholder Interviews                  |
|  | 1.3.2 Were appropriate Terms of Reference developed?  | Evidence of ToR<br>Views on appropriateness of ToR for task at hand             | Document review (ToR, minutes)<br>Key Stakeholder Interviews             |
|  | 1.3.3 Were there any issues associated with the functioning of the Committee?   | Issues identified   | Key Stakeholder Interviews   |
| 1.4 Communications plan                      | 1.4.1 Was an appropriate communications plan developed?   | Communication plan available<br>Views on appropriateness of communications plan | Document review<br>Key Stakeholder Interviews<br>Physician E-mail Survey |

<sup>4</sup> Note that this DCM has been updated for training purposes.



| <b>Evaluation Topic</b>   | <b>Evaluation Questions</b>   | <b>Indicators</b>  | <b>Data Sources</b>  |
|---|---|--|--|
| 1.5 Stakeholder consultation plan   | 1.5.1 Was an appropriate stakeholder consultation plan developed?                         | Consultation plan available<br>Views on appropriateness of consultation plan | Document review<br>Key Stakeholder Interviews                                  |
| 1.6 Evaluation plan   | 1.6.1 Was an appropriate evaluation plan developed?                                       | Evaluation plan available<br>Views on appropriateness of evaluation plan     | Key Stakeholder Interviews (selected)  |
| <b>2.0 Implementation</b>   |   |  |  |
| 2.1 Provincial Guidelines are developed                                     | 2.1.1 Were the Guidelines developed in an effective manner?                               | Effectiveness of development process   | Document review (Guidelines, minutes)<br>Key Stakeholder Interviews (selected) |
|   | 2.1.2 What factors helped or hindered their development?                                  | Issue identification   | Key Stakeholder Interviews (selected)  |
| 2.2 Provincial Guidelines are approved                                      | 2.2.1 Were the Guidelines approved by the CPSA? By other stakeholders?                    | Approval process   | Document review (minutes)<br>Key Stakeholder Interviews (selected)             |
|   | 2.2.2 What factors helped or hindered their endorsement?                                  | Issue identification   | All data   |
| 2.3 Provincial Guidelines are endorsed                                      | 2.3.1 Were the Guidelines endorsed?   | Endorsement process  | Document review (TBA)  |
|   | 2.3.2 What factors helped or hindered their endorsement?                                  | Issue identification   | Key Stakeholder Interviews (selected)<br>All data                              |
| 2.4 Guidelines are used to develop standards for the practice audit process | 2.4.1 Were standards developed for the audit of methadone maintenance treatment practice? | Standard development process   | Document review (meeting minutes, routine reports)<br>Activity Reports         |
|   | 2.4.2 What the standards considered appropriate by practicing physicians?                 | Views on appropriateness of standards  | Physician E-mail Survey  |



| Evaluation Topic  | Evaluation Questions  | Indicators   | Data Sources  |
|---|---|--|---|
| 2.5 Guidelines are launched by providing communication                              | 2.5.1 Were physicians and other healthcare workers aware of the orientation, training and support provided by the CPSA? | Awareness of orientation, training and support provided                        | Document review<br>Physician E-mail Survey<br>Key Stakeholder Interviews (selected) |
| 2.6 Guidelines are launched by providing orientation                                | 2.6.1 How effective was the orientation provided?   | Views on effectiveness of orientation process                                  | Physician E-mail Survey   |
| 2.7 Guidelines are launched by providing training                                   | 2.7.1 How effective was the training provided?  | Views on effectiveness of training process                                     | Physician E-mail Survey   |
| 2.8 Guidelines are launched by providing support                                    | 2.8.1 How effective was the support provided by the CPSA?   | Views on effectiveness of support process                                      | Physician E-mail Survey   |
| <b>3.0 Outputs</b>  |   |  |   |
| 3.1 A training program and support processes related to the Guidelines are provided | 3.1.1 How accessible was the training program provided? Did the intended target group attend?                           | # workshops provided<br># & type of attendees                                  | Document review (records)   |
|   | 3.1.2 How effective was the training process?   | Satisfaction with training process   | Physician E-mail Survey   |
| 3.2 Physicians have access to the Methadone Maintenance Standards & Guidelines      | 3.2.1 How were the Guidelines disseminated? How available were they to physicians?                                      | # Guidelines disseminated<br>Views on Guidelines availability                  | Document review/ web visit<br>Physician E-mail Survey                               |
| 3.3 A clear role definition for clinics & community practitioners is available      | 3.2.2 How was the role definition disseminated? How available was it to clinics and community practitioners?            | Role definition dissemination process<br>Views on role definition availability | Physician E-mail Survey<br>Key Stakeholder Interviews (selected)                    |
| 3.4 An evaluation of the project is conducted                                       | 3.4.1 What lessons can be learned from the program implementation process?  | Lessons  | All data  |
|   | 3.4.2 Were there any unanticipated outcomes or side effects?  | Unanticipated outcomes/side effects  | All data  |



| Evaluation Topic  | Evaluation Questions   | Indicators   | Data Sources   |
|---|--|--|--|
| <b>OUTCOMES</b>   |  |  |  |
| <b>4.0 Short-term Outcomes</b>  |  |  |  |
| 4.1 Physicians who have received training find the Guidelines credible/ acceptable                                  | 4.1.1 What were physicians' views about Guideline credibility/ acceptability?  | Views on Guidelines credibility & acceptability  | Physician E-mail Survey  |
| 4.2 Physicians who have received training meet registration standards & receive license/exemption                   | 4.2.1 How many physicians who received training met registration standards?  | # of physicians successfully completing training   | Physician E-mail Survey<br>Document review (records)                                     |
|   | 4.2.2 How many exemptions were awarded as a result of the training?  | # exemptions   | Document review (records)  |
| 4.3 Physicians who have received training understand the disease of addiction                                       | 4.3.1 Did physicians increase their understanding of the disease of addiction as a result of the training?   | Knowledge increase   | Physician E-mail Survey  |
| 4.4 Opioid-dependent individuals were provided with increased access to treatment                                   | 4.4.1 Approximately how many additional opioid-dependent individuals were provided with increases access to treatment as a result of the new exemptions? | Estimate of # of individuals affected<br>Extrapolation   | Physician E-mail Survey  |
| <b>5.0 Intermediate-term Outcomes</b>   |  |  |  |
| 5.1 Opioid- dependent individuals experience improved health status and decreased risk of contracting HIV, HCV, HBV | 5.1.1 What changes to the health status of opioid-dependent individuals resulted from the development and endorsement of the Guidelines?                 | Evidence of improved health status in the target population<br>Rates of HIV, HCV, HBV in the target population | Secondary data after three years<br>Future program evaluations                           |
| 5.2 Albertans experience improved safety re: methadone treatment  | 5.2.1 What changes were made to safety regarding methadone treatment as a result of the development and endorsement of the Guidelines?                   | Evidence of changes to methadone maintenance treatment safety in Alberta                                       | Secondary data after three years (e.g., incidence reports)<br>Future program evaluations |



| <b>Evaluation Topic</b>  | <b>Evaluation Questions</b>   | <b>Indicators</b>  | <b>Data Sources</b>   |
|--|---|--|---|
| <b>6.0 Long-term Outcomes</b>  |   |  |   |
| 6.1 Opioid- dependent individuals experience reduced illicit drug use, decreased related illegal activity, improved quality of life, and decreased mortality | 6.1.1 Did opioid-dependent individuals experience improved outcomes as a result of the application of the Guidelines in Alberta?          | Evidence of change in related outcomes with regard to the target population<br>[N.B. Caution re: attribution issues] | Secondary data after five years<br>Future program evaluations |
| 6.2 Albertans experience decreased transmission of HIV, HCV, HBV, decreased social cost, and Improved health care  | 6.2.1 What effect did the application of the Guidelines have on Albertans in terms of disease transmission, social costs and health care? | Change in quality of life indicators<br>[N.B. Caution re: attribution issues]  | Secondary data after five years<br>Future program evaluations |



### **Using an Indicator Summary**

Sometimes evaluation studies can be complex and stakeholder groups may only see a specific piece of the puzzle. The more complex your logic model and DCM are, it can become intimidating. You may want to sub-divide the DCM by stakeholder group for clarity and to obtain targeted feedback.

A sample Indicator Summary shows how this can be done. Note that it is a fairly simple document that can be presented as a one pager (back-to-back). It focuses specifically on Project Implementation and Outcomes for Department X in an evaluation of a pilot project on central access and intake for ambulatory services. I made similar Indicator Summaries for three other departments.

In this example, following amendment and approval by each stakeholder group, I re-engineered the DCM to reflect any changes that stakeholders advised.



## Example #4

### Sample Indicator Summary

#### Linkage to Logic Model: 2.1, 3.1, 3.5, 4.1-4.3

The evaluation will describe how Department X has addressed standardized intake and what evidence exists that these changes have occurred.<sup>5</sup>

#### Evaluation Question 2.1.1: *How has the referral and return process in Department X been redesigned?*

| Indicators   | Data Sources  |
|--|---|
| Standardization of business processes: <ul style="list-style-type: none"> <li>• Changes to access</li> <li>• Changes to triage prioritization</li> <li>• Changes to waitlist management</li> </ul> | <ul style="list-style-type: none"> <li>• Documents, reports, minutes, forms</li> <li>• Project lead interviews (pre-/ post)</li> <li>• Team focus group (post)</li> </ul> |
| Communications between primary care physicians, medical specialists, the care team, patients and families  |   |
| Interface between/ among: triage, scheduling, wait list management, information flow   |   |

**Analysis:** Description

#### Evaluation Question 3.1.1: *To what extent has a Central Intake system been implemented in Department X?*

| Indicators  | Data Sources  |
|---|---|
| #, % & type of physicians participating<br><br># & type/reason of referrals received ( <i>new, re-referral, 2<sup>nd</sup> opinion, not indicated</i> )<br><br>#, % of referral outcomes ( <i>accepted, not accepted, cancelled, redirected</i> )<br><br>Accuracy of referrals (#, % <i>complete, incomplete</i> )<br><br>Triage category & appropriateness of referrals (#, % <i>incoming; #, % accepted</i> ) | <ul style="list-style-type: none"> <li>• Access database (quarterly)</li> </ul> |

**Analysis:** Time series (quarterly reporting); graphing

<sup>5</sup> <http://www.departmentofmedicine.com/MAS/index.html>



**Evaluation Question 3.2.1:** *What impact did project changes in Department X have on communications and information flow between/ among health professionals, care teams, patients and families?*

| Indicators   | Data Sources  |
|--|---|
| Changes in patient communication processes.                                  | <ul style="list-style-type: none"> <li>• Project lead interviews (pre-/ post)</li> <li>• Physician interviews (sample—post)</li> <li>• Team focus group (post)</li> </ul> |
| Changes in communication between health professionals (Specialists and GP's) |   |
| Changes to practice patterns/delivery of care                                |   |
| Lessons learned  |   |
| Barriers/facilitators  |   |

**Analysis:** Description

**Evaluation Question 3.4.1 & 3.4.2:** *What impact have these changes had on providers and patients?*

| Indicators                              | Data Sources  |
|---|---|
| Team satisfaction                       | <ul style="list-style-type: none"> <li>• Team focus group (post)</li> <li>• Physician interviews/survey (sample—post)</li> <li>• [Patient satisfaction data]</li> </ul> |
| Referring family physician satisfaction |   |
| Participating specialist satisfaction   |   |
| [Patient satisfaction]                  |   |

**Analysis:** Description

**Evaluation Question 4.1.1, 4.2.1, 4.3.1:** *What impact has the project had on access to services in Department X?*

| Indicators                                  | Data Sources   |
|---|--|
| Changes to referral appropriateness         | <ul style="list-style-type: none"> <li>• Access database (summary)</li> <li>• Project lead interviews (post)</li> <li>• Physician interviews (sample—post)</li> <li>• Team focus group (post)</li> </ul> |
| Changes in flow to specialized medical care |  |
| Changes to wait times                       |  |
| Unanticipated outcomes                      |  |

**Analysis:** Pre-/ post comparisons; graphing; overall analysis of findings.



## Developing the Tools

Once this important design work is completed, developing the data collection tools is simple and easy. You are not scratching your head wondering what questions to ask. Just follow the roadmap. The questions have already been determined. Instead, you can focus on:

- Using the appropriate language for your target group,
- Sequencing the questions or topics in the most useful order, and
- Formatting the tools to be effective and easy to use.

### Tips on constructing evaluation tools:

- Do some backward engineering from your DCM. Develop a “Shopping List” of questions for any specific tool. Extract all the relevant questions from the DCM (e.g., all items that say Key Stakeholder Interview).
- Create a list of all the items needed for the specific tool. IMPORTANT: Don’t detach the DCM numbering!
- Change the sequence & wording of questions for your target group as needed, develop the survey format, Likert scales, etc. within each tool.
- Prepare a draft tool.
- Review the tool with your client; revise as needed.
- Circulate more broadly (e.g., to your Steering Committee).
- Don’t be afraid to circulate an interview protocol to participants in advance. There are no secrets here! I often fax or email the protocol in advance and it allows respondents to prepare.
- Be sure to append all tools to your Final Report

## Case Study (cont’d)

### The Key Stakeholder Interview Protocol

The DCM for the Methadone Maintenance Guidelines Program Evaluation listed six data collection tools:

- Document Review Template;
- Key Stakeholder Telephone/In-person Interview Protocol;
- Orientation Survey;
- Workshop Feedback Form;
- Physician Internet Survey; and
- Key Informant Interview Protocol.



In particular, the Key Stakeholder Interview Protocol was designed to obtain:

- Insight into the appropriateness and functioning of the Guidelines Development Committee;
- Comments on the communications plan, the stakeholder consultation plan, and the evaluation plan;
- Insight into the effectiveness of the *Guidelines* development and approval process;
- Information on the level of acceptance by other stakeholders and by the broader community;
- Insight into the level of awareness of physicians and other healthcare workers regarding the orientation, training and support provided by the CPSA about the *Guidelines*;
- Information on clinics' and community practitioners' level of access to the *Guidelines* and their role definitions with regard to methadone maintenance; and
- Information about the extent to which the project achieved its objectives.



# Evaluation of the Development and Endorsement of Alberta- Based Methadone Maintenance Guidelines

## Key Stakeholder Interview Protocol



(v4 August 19, 2005)

- The College of Physicians & Surgeons of Alberta (CPSA) is conducting an evaluation of their project entitled, *The Development and Endorsement of Alberta-based Methadone Maintenance Guidelines*.
- Its objectives are to provide a safe, accessible, effective and consistent treatment for opioid dependent individuals and to encourage more physicians to obtain methadone licenses.
- You have been selected for an interview because of your involvement in activities related to the project.
- This interview should take approximately 30 minutes and any information that you provide will remain confidential as the results will be reported in summary fashion only.
- Your cooperation is voluntary, and you do not have to answer questions that you choose not to.
- Your decision to participate does not in any way waive your legal rights nor does it release the researchers nor the CSPA from their legal and professional responsibilities. You are free to withdraw from the study at any time.
- If you have further questions concerning matters related to this research, please contact CVM, Manager - Physician Prescribing Practices, College of Physicians & Surgeons of Alberta, at (780) 423-4764 or by e-mail at (email address).
- If you need more detailed information about the Alberta-based Methadone Maintenance Guidelines Project, please consult the CPSA web page at [www.cpsa.ab.ca](http://www.cpsa.ab.ca).
- The College of Physicians & Surgeons of Alberta has approved this research study.
- Support for this project has been made possible through a financial contribution from Health Canada. The views expressed herein do not necessarily represent the views of Health Canada
- Thank you in advance for your participation—your feedback is valuable to the CPSA!



- (1.2)
1. As you may be aware, an Expert Committee was established to support the development of the Alberta-based Methadone Maintenance Guidelines. Can you comment on the Committee in terms of the following:
- a) The appropriateness of the Expert Committee
  - b) The appropriateness of the Committee's Terms of Reference
  - c) Any issues that were associated with the functioning of the Committee
  - d) Other comments regarding the Committee (*please specify*).
- (1.3)
2. Several administrative supports were also established to support the development of the Guidelines. Can you comment on the following supports:
- a) The communications plan
  - b) The stakeholder consultation plan
  - c) The evaluation plan (optional)
- (2.1)
3. With regard to the Alberta Methadone Maintenance Guidelines, can you comment on the effectiveness of the development process?
- a) What factors helped the development process?
  - b) What factors hindered the development process?
- (2.2)
4. Can you comment on the Guidelines' approval process by the CPSA Council?
- a) What factors helped the approval process?
  - b) What factors hindered the approval process?
- (2.3)
5. Can you comment on how the Guidelines have been accepted by other stakeholders and/or the broader community? [NB Tailor this question to context of interviewee.]
- a) What factors have supported their acceptance?
  - b) What factors have hindered their acceptance?
- (2.5)
6. Do you think physicians and other healthcare workers were aware of the orientation, training and support provided by the CPSA regarding the Guidelines?
- (3.3)
7. Do you think that clinics and community practitioners now have ready access to the Methadone Maintenance Standards and Guidelines? Do you think they now have a clear role definition in relation to methadone maintenance?



(4.0-6.0)

8. To what extent did the project achieve its objectives. A five-point scale is provided, where 1 = "Not at all" and 5 = "A great deal":

#### Achievement of Project Objectives

|  | Not at all               |                          |                          |                          | A great deal             | Don't know/ Not Applicable |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|
|  | 1                        | 2                        | 3                        | 4                        | 5                        | DK/NA                      |
| a) Create a patient-centered model of care   | <input type="checkbox"/>   |
| b) Facilitate the support of the physician providing treatment.  | <input type="checkbox"/>   |
| c) Provide physicians with clear and realistic direction for methadone maintenance treatment in Alberta. | <input type="checkbox"/>   |
| d) Create an atmosphere of cooperation among all disciplines involved in methadone treatment.            | <input type="checkbox"/>   |
| e) Improve the effectiveness of methadone treatment.   | <input type="checkbox"/>   |
| f) Improve the safety of patients receiving methadone treatment.   | <input type="checkbox"/>   |
| g) Encourage physicians to obtain methadone licenses for opioid dependence.                              | <input type="checkbox"/>   |
| h) Provide a framework for the development of a practice audit process.                                  | <input type="checkbox"/>   |

Comments?

(3.4)

9. What did you learn from this project?
10. Were there any surprises? Any unintended outcomes?
11. Do you have any other comments regarding the CPSA's Methadone Maintenance Guidelines initiative? Thank you very much for your contribution to this evaluation!



### **Discussion and reflection**

- ▶ Why do yes/no questions limit your data?
- ▶ How can standards be used as benchmarks?
- ▶ How can you limit the scope of your study?
- ▶ How can you target your design to sub-groups?



### 3 Summarizing Data

#### Notes

For quantitative data, let's assume:

- You have collected data using whatever tools you selected.
- Your quantitative data is entered into a database such as ACCESS or a statistical program such as SPSS.
- You have organized and compiled your data into data summary workbooks by DCM question and by program area.

#### Example #5

From Database Summary for one department using central access and triage:

#### Evaluation Question 4.1.1, 4.2.1, 4.3.1

What impact has the project had on access to services in Department X?

*Question 4.1.1: Changes to referral appropriateness*

Indicator: a) #/% Central Intake Triage category for accepted referrals

#### Central Intake Triage Category for Accepted Referrals

| Month Year      | Urgent   | Semi-urgent | Routine  | Total n |
|-----------------|----------|-------------|----------|---------|
| Apr 2008        | 11% (9)  | 41% (35)    | 48% (41) | 85      |
| May 2008        | 10% (8)  | 40% (33)    | 50% (41) | 82      |
| Jun 2008        | 5% (4)   | 31% (23)    | 64% (48) | 75      |
| Jul 2008        | 10% (10) | 29% (29)    | 61% (61) | 100     |
| Aug 2008        | 7% (6)   | 51% (45)    | 42% (37) | 88      |
| Sep 2008        | 7% (8)   | 52% (58)    | 41% (46) | 112     |
| Oct 2008        | 11% (12) | 57% (62)    | 32% (35) | 109     |
| Nov 2008        | 14% (17) | 40% (49)    | 46% (57) | 123     |
| Dec 2008        | 12% (11) | 33% (30)    | 54% (49) | 90      |
| Jan 2009        | 7% (7)   | 49% (52)    | 44% (47) | 106     |
| Feb 2009        | 6% (5)   | 46% (37)    | 48% (39) | 81      |
| Mar 2009        | 5% (5)   | 49% (48)    | 45% (44) | 97      |
| Total           | 102      | 501         | 545      | 1148    |
| Monthly Average | 9% (9)   | 44% (42)    | 47% (45) | 96      |



## Example #6

### SPSS Analysis<sup>6</sup> for referral appropriateness

#### Improved access, triage, prioritization & waitlist management / 4.1 Increased completeness/ appropriateness of referrals: Testing the level of agreement between incoming and central triage

Of 1,431 cases, 238 do not have a central triage category (or are classified as telephone) and of the remainder, 12 do not have an incoming triage category. These were considered as missing data in the analysis. The incoming triage category "Not indicated" (n = 879) was treated as "Routine" for the analysis of appropriateness. The sample size for this test is therefore equal to 1,431 minus 240 (n = 1,181).

**Null hypothesis (H<sub>0</sub>):** The proportion of cases with agreement between incoming and central triage (diagonal counts of a contingency table over total number of cases) is not significantly different from that expected by chance.

**Alternative Hypothesis (H<sub>1</sub>):** The proportion of cases with agreement between incoming and central triage (diagonal counts of a contingency table over total number of cases) is significantly different from that expected by chance.

**Statistical test:** Since the variable of interest (triage category) is categorical, we used Cohen's kappa coefficient to measure agreement between two raters over the same cases. Cohen's kappa coefficient is equal to the ratio of the proportion of observed agreement (P<sub>o</sub>) minus the proportion of expected agreement (P<sub>e</sub>) over one minus the proportion of expected agreement (P<sub>e</sub>) (i.e.,  $\text{kappa} = (P_o - P_e)/(1 - P_e)$ ). In addition to computing Cohen's kappa coefficient, P<sub>o</sub> is tested against P<sub>e</sub> to determine if P<sub>o</sub> is significantly larger than P<sub>e</sub>.

**Interpretation of results:** If  $p < 0.05$ , reject the null hypothesis that the proportion of cases with agreement between incoming and central triage (diagonal counts of a contingency table over total number of cases) is not significantly different from that expected by chance. Values of kappa greater than 0.75 indicate strong agreement beyond chance, values between 0.40 and 0.79 indicate fair to good, and values below 0.40 indicate poor agreement.

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<sup>6</sup> Statistics compiled by Science-Metrix.



**Contingency table**

| Incoming Triage Category | Central Intake Triage Category |             |            | Row total    |
|--------------------------|--------------------------------|-------------|------------|--------------|
|                          | Routine                        | Semi-Urgent | Urgent     |              |
| Routine                  | 505                            | 435         | 58         | 998          |
| Semi-urgent              | 32                             | 49          | 5          | 86           |
| Urgent                   | 16                             | 35          | 46         | 97           |
| <b>Column total</b>      | <b>553</b>                     | <b>519</b>  | <b>109</b> | <b>1,181</b> |

**Results of Cohen's kappa test**

|                | Level of agreement between incoming and central triage |
|----------------|--|
| P <sub>o</sub> | 51%  |
| P <sub>e</sub> | 44%  |
| Kappa          | 0.13 (95% CI: 0.09-0.16)                               |
| <b>p-value</b> | <b>&lt; 0.05</b>                                       |

**Conclusion:** There is a significant association between incoming and central triage (i.e., The proportion of cases with agreement between incoming and central triage is significantly different from that expected by chance) but the level of agreement between the two triages is poor (kappa = 0.13 < 0.40). The disagreement can be mainly attributed to the high proportion of routine (not indicated) patients from the incoming triage that were upgraded to the semi-urgent category at central triage (435 out of 998 patients; 44%). Thus, this test might be biased if the incoming category "Not indicated" is not a good proxy for the "Routine" category.



## Notes:

For qualitative data, let's assume:

- You have collected data using whatever tools you selected.
- Your qualitative data, such as interview notes, are typed up in a word-processing program such as Microsoft Word.
- You have coded your data using the codes (and sub-themes you may develop) based on the DCM using either a qualitative analysis package (e.g., N-Vivo), a database program (e.g., ACCESS) or other method. Recently I have used Microsoft Word for coding, using the Comment function which creates bubbles in the margin to note the DCM code and sub-theme. Highlighted comments are cut and pasted into an Excel spreadsheet.

## Example #7

### Coding from Telephone Interviews using Microsoft Word

1. Can we talk briefly about how the referral process in Department X has been changed as a result of the Central Access & Triage initiative in terms of:
  - a. The triage process? (4.1.2)

#### Respondent DP Comment:

*It used to be run by one person, the last little while now it comes through specialists doing it. [g1]In the old days, before there was triage, the consult came to us and we either picked them or if they were inappropriate [sent them back] or we switched them. [g2]Whatever comes from the Triage service they have already determined the category, although that doesn't mean we can't change the category because we can. [g3]I look at all the triage that comes through before booking an appointment. [g4]I find them to be okay.[g5]*

#### Analysis:

"It used to be run by one person, the last little while now it comes through specialists doing it." [g6]  
[3.1.1 d Changes; Other: sub-theme: staffing issues]

"In the old days, before there was triage, the consult came to us and we either picked them or if they were inappropriate [sent them back] or we switched them."  
[2.1.1 b Change to triage prioritization; sub-theme: comparison with past]

"Whatever comes from the Triage service they have already determined the category, although that doesn't mean we can't change the category because we can." [g7]  
2.1.1.b Change to triage prioritization; sub-theme: specialist can change triaged category

"I look at all the triage that comes through before booking an appointment."  
3.1.1 b. Change to triage process; sub-theme; specialist review

"I find them to be okay." [g8]  
4.1.1. b Referral appropriateness; specialist view; sub-theme: appropriate

- You then develop an Excel workbook for each tool, with a page for each program area, and create headings that include DCM#, question, indicator and sub-theme, enter & sort data.



| Research Question   | Indicator                                 | Sub-theme                           | Comments                               |   |
|---|---|-------------------------------------|--|---|
| 2.1.1 How has the referral and return process in Dept. X been redesigned? | 1. Standardization of business processes: |                                     |  |   |
|   |   | a) Changes to access                |  |   |
|   |   | b) Changes to triage prioritization |  |   |
|   |   |                                     | No change                              | TT-Can't say I have, no.  |
|   |   |                                     | Comparison with past                   | DP-In the old days, before there was triage, the consult came to us and we either picked them or if they were inappropriate [sent them back] or we switched them. |
|   |   |                                     | Specialist can change triaged category | DP Whatever comes from the Triage service they have already determined the category, although that doesn't mean we can't change the category because we can.      |
|   |   | c) Changes to waitlist management   |  |   |
|   |   |                                     | No change                              | TT No, doesn't affect me  |
|   |   |                                     | Not due to this                        | TT Not due to that,   |
|   |   |                                     | Not due to this                        | TT We have added two new people to our clinic but this hasn't affected it.  |



## Triangulating Data

**Triangulation** will help to improve the validity of evaluation findings, eliminate bias and dismiss rival alternative explanations for evaluation conclusions. According to Mathison (2005) different data sources can produce inconsistent and contradictory findings. Triangulation should be thought of *as a step in the process of embedding complex empirical data in a more holistic understanding of that specific situation*. This approach triangulates data across time, space, person, data source and multiple methods. There are two steps.

1. Create data summaries (as above)
2. Combine data across tools as appropriate.

### Example #8

Extract from Organ Donation & Transplantation Evaluation—Combining Quantitative and Qualitative Data

|   |          |            |           |                                   |
|---|----------|------------|-----------|-----------------------------------|
| <b>Survey Question:</b><br>Is there a continued need for the federal government's involvement in the development of a coordinated Federal/ Provincial/ Territorial strategy to improve donation in Canada? (Matrix #)   |          |            |           |                                   |
| <b>Internet Survey Extract:</b>   | <b>n</b> | <b>Yes</b> | <b>No</b> | <b>Don't Know/ Not applicable</b> |
| 8. Do you think there is a continued need for a coordinated F/ P/ T approach for donation in Canada? (Matrix #)   | 119      | 93%        | 2%        | 5%                                |
| <b>Open-ended responses to Internet Survey</b>  |          |            |           |                                   |
| <i>Coordination – National Approach (Coded Theme)</i>   |          |            |           |                                   |
| <b>Group 1</b><br>I think the Federal Government should continue to fund XXX because a national approach is of paramount importance.<br><br>The system needs to have a Pan- Canadian scope.<br><br>It requires inter-provincial organization, especially for certain aspects which have been identified in the Recommendations to the CDM.<br><br>It would seem that the ABC model is a fair comparison where funded is provided to ensure a consistent approach and to maximize safety to Canadian patients. |          |            |           |                                   |
| <b>Group 3</b><br>This needs to be a federally mandated system that works for all Canadians and improves equity issues.<br><br>Need uniformity across the country.  |          |            |           |                                   |
| <b>Group 4</b><br>Donations are researched more and more. The situation risks becoming complicated. Having a consistent approach nationwide would be an asset.  |          |            |           |                                   |



**Group 5**

We need to share donations where they can be used.

**Coordination – Integrate Provincial work/Resources (Coded Theme)****Group 1**

The variation in the fiscal resources and size of the provinces/territories suggests this topic will never be at the top of the priority list of 13 jurisdictions. And in the current health care service delivery structure it is very difficult to reach consensus on issues of accountability, liability etc. This issue needs a federal presence if anything is to be done in the area.

**Group 3**

Needs to ensure provinces collaborate/cooperate.

Provinces working alone create redundancies.

We need all levels of government involved but collaboratively. The feds don't run the show.

Etc...

- These integrated data summaries become your evidence for report preparation. You will use them well!

**Discussion and reflection**

- What issues are associated with creating data summaries:
  - Resources?
  - Time?
  - Staff?
  - Other?
- How can you accommodate these needs?



## 4 Mapping Themes & Reporting Findings

### Notes

I use a mind mapping program<sup>7</sup> for many things. It is particularly useful to boil ideas down and get a sense of their relative importance. Linear thinking takes you straight to the expected. Visual thinking can take you in new directions and make connections you never expected. Mind maps can be used for brainstorming, planning and organizing thoughts, ideas and tasks, structuring information and identifying relationships between key points.

- A mind map is a diagram that represents items arranged around a central key word or idea.
- The elements of a mind map are arranged intuitively in groupings to represent connections
- The, graphical, non-linear approach allows non-hierarchical thinking.
- To make a mind map, start in the centre of the page with the main idea, and work outward in all directions, producing a growing and organized structure composed of key words and key images

### Example #9

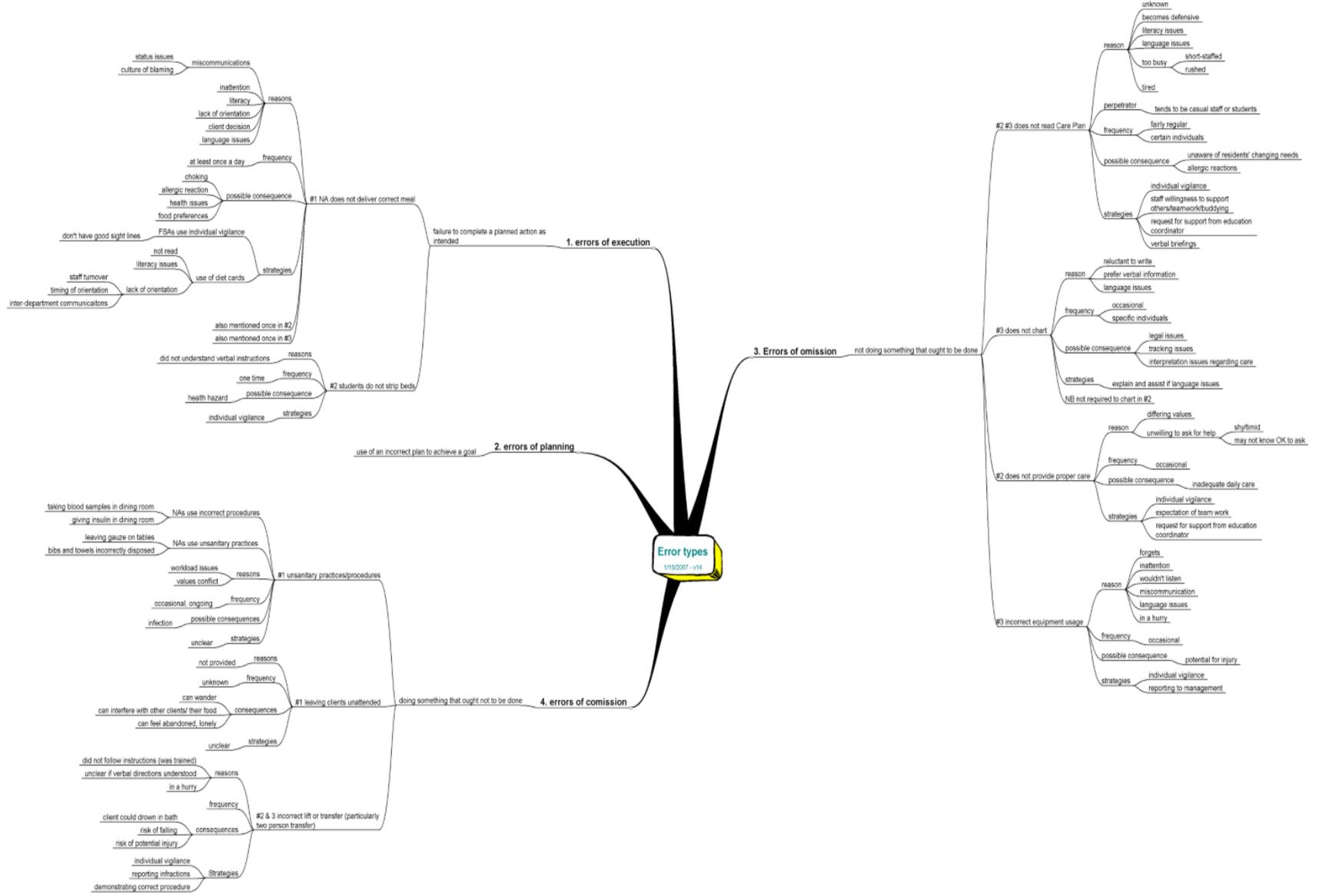
#### **Mind map on study findings from a case study project on patient safety**

Based on the analysis of data from approximately 50 interviews with Nursing Aides, it was possible to put together a mind map of Error Types (based on a framework developed by Ilan and Fowler, 2005) to determine which errors had been reported.

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<sup>7</sup> [http://www.mindjet.com/products/mindmanager\\_pro/default.aspx](http://www.mindjet.com/products/mindmanager_pro/default.aspx).





Once the mind map was generated it was possible to pull together study findings that identified the reason for the error, frequency, possible consequence, and reported work-around strategies.

### Example #10

Here is a table that summarizes this analysis.

**Table X-1: Errors Reported by Case Study Participants**

| Error type   | Identified Error                | Reason for Error  | Frequency   | Possible Consequence  | Reported Work-around Strategies   |
|--|---------------------------------|---|---|---|---|
| 1. Errors of Execution—involve a failure to complete a planned action as intended. | NA did not deliver correct meal | <ul style="list-style-type: none"> <li>Miscommunication</li> <li>Inattention</li> <li>Literacy</li> <li>Lack of orientation</li> <li>Client choice</li> <li>Language issues</li> <li>Job status issues</li> </ul> | At least once a day                               | <ul style="list-style-type: none"> <li>Choking</li> <li>Allergic reaction</li> <li>Health issue</li> <li>Food preference</li> </ul> | <ol style="list-style-type: none"> <li>Use of diet cards</li> <li>Individual vigilance</li> </ol>   |
|  | Students did not strip bed      | <ul style="list-style-type: none"> <li>Did not understand verbal instructions</li> </ul>  | Once  | <ul style="list-style-type: none"> <li>Health hazard</li> <li>Lack of client comfort</li> </ul>                                     | <ol style="list-style-type: none"> <li>Individual vigilance</li> </ol>  |
| 2. Errors of Planning—involve the use of an incorrect plan to achieve a goal.      | None reported                   |   |   |   |   |
| 3. Errors of Omission—by not doing something that ought to be done.                | NA did not read Care Plan       | <ul style="list-style-type: none"> <li>Literacy issue</li> <li>Language issue</li> <li>Workload issue—too busy/ rushed/ short-staffed</li> </ul>  | Fairly regularly<br>Involves specific individuals | <ul style="list-style-type: none"> <li>Lack of awareness of changing client needs</li> <li>Inappropriate client care</li> </ul>     | <ol style="list-style-type: none"> <li>Individual vigilance</li> <li>Team work</li> <li>Training support</li> <li>Verbal briefings</li> </ol> |
|  | NA did not record on chart      | <ul style="list-style-type: none"> <li>Reluctance to write</li> <li>Preference for verbal information</li> <li>Language issues</li> </ul>   | Occasional<br>Involves specific individuals       | <ul style="list-style-type: none"> <li>Legal issues</li> <li>Tracking issues</li> <li>Inappropriate client care</li> </ul>          | <ol style="list-style-type: none"> <li>Assistance with language difficulties</li> </ol>   |
|  | NA did not provide proper care  | <ul style="list-style-type: none"> <li>Differing values</li> <li>Unwilling to ask for help</li> </ul>   | Occasional  | <ul style="list-style-type: none"> <li>Inadequate daily care</li> </ul>   | <ol style="list-style-type: none"> <li>Individual vigilance</li> <li>Team work</li> <li>Training Support</li> </ol>                           |



| Error type   | Identified Error                                | Reason for Error   | Frequency   | Possible Consequence   | Reported Work-around Strategies  |
|--|---|--|---|--|--|
|  | NA used equipment incorrectly                   | <ul style="list-style-type: none"> <li>Inattention/forgot</li> <li>Would not listen to coworker</li> <li>Miscommunication</li> <li>Language issues</li> <li>Workload issue—in a hurry</li> </ul> | Occasional  | <ul style="list-style-type: none"> <li>Potential for client injury</li> </ul>  | <ol style="list-style-type: none"> <li>Individual vigilance</li> <li>Report to management</li> </ol>   |
| 4. Errors of Commission—by doing something that ought not be done. | NAs used unsanitary procedures                  | <ul style="list-style-type: none"> <li>Workload issue—in a hurry</li> <li>Values conflict re: cleanliness</li> </ul>   | Occasional<br>Ongoing   | <ul style="list-style-type: none"> <li>Infection</li> </ul>  | Unknown  |
|  | NAs left needy client unattended in dining room | Unknown  | Unknown   | <ul style="list-style-type: none"> <li>Client could wander</li> <li>Client could interfere with other clients &amp; their food</li> <li>Client could lack a sense of security</li> </ul> | Unknown  |
|  | NAs used incorrect lift/transfer procedure      | <ul style="list-style-type: none"> <li>Unclear if directions were understood</li> <li>Workload issue—in a hurry</li> <li>Miscommunication</li> </ul>   | Occasional<br>Involves specific staff (often no longer there) | <ul style="list-style-type: none"> <li>Client could drown in bath</li> <li>Risk of falling</li> <li>Risk of potential injury</li> </ul>  | <ol style="list-style-type: none"> <li>Individual vigilance</li> <li>Teamwork</li> <li>Infractions reported</li> <li>Correct procedure demonstrated</li> </ol> |

### Using Evidence Tables

Summarize evidence collected by key DCM questions. This can be very useful in a summary chapter and can sometimes be carried forward into the Executive Summary (findings at a glance). You can also link findings to your conclusions and recommendations but if this work is very detailed, the table can go in an appendix. It depends on what your client or funder wants, but evidence is hard to beat to make a compelling case.

### Case Study (cont'd)

#### Evidence tables outlining findings about the methadone maintenance project.

The evaluation was able to answer a number of questions related to short-term outcomes and these are summarized in the following table:



| Evaluation Questions   | Evidence of Success   |
|--|---|
| Did physicians who received training find the <i>Guidelines</i> credible/ acceptable?  | <ul style="list-style-type: none"> <li>Physicians rated the achievement of project objectives positively. The highest ratings were to <i>Facilitate support to the physician providing treatment</i> and to <i>Improve the safety of patients receiving methadone treatment</i> at 4.50 and 4.42 respectively (on a scale of 1-5 where 1=not at all and 5=a great deal). Further, overall workshop effectiveness was rated at 4.47 on a similar scale.</li> </ul>   |
| Did physicians who received training understand the disease of addiction?  | <ul style="list-style-type: none"> <li>Workshop attendees (both physicians and members of other health disciplines) rated their knowledge of the medical model of addiction as a result of the training at 4.20 on a similar scale. Other stakeholders also commented on their learning in this project.</li> </ul>   |
| Did physicians who received training meet registration standards?  | <ul style="list-style-type: none"> <li>Registration standards were provided in the project's key product, <i>Standards &amp; Guidelines for Methadone Maintenance Treatment in Alberta</i>. Physicians attending the workshops received some Continuing Medical Education credits towards their future registration. Overall, however, physicians rated achievement of the workshop objective of <i>Encourage physicians to obtain methadone licenses for opioid dependence</i> the lowest at 3.44 on a similar scale, suggesting that physicians may need further clarification about this process.</li> </ul> |
| How many exemptions were awarded as a result of the training?  | <ul style="list-style-type: none"> <li>Prior to the project, in June 2005, there were 44 physicians in Alberta who had an opioid dependence exemption. As the project came to a close in May 2006, there were 67 physicians with this exemption, representing an actual increase of 23 physicians or 52% in exemption holders.</li> </ul>   |
| How many additional opioid-dependent individuals were provided with increased access to treatment as a result of the new exemptions? | <ul style="list-style-type: none"> <li>A rough calculation suggests that physicians with an opioid exemption may be treating an average of 10 additional opioid-dependent patients in the coming year, based on the information obtained in this evaluation. If this figure is extrapolated to the 23 newly exempted physicians, it could be projected that approximately 230 new opioid-dependent patients could receive treatment in the coming year. However, caution should be used in considering these projections as it was not clear if the new exemptions were general or patient specific.</li> </ul> |
| What changes were made to safety regarding methadone treatment as a result of the <i>Guidelines</i> ?                                | <ul style="list-style-type: none"> <li>A number of changes to practice have already been reported by both methadone clinics and practitioners and more changes are planned, according to physicians who responded to the Internet survey.</li> <li>Stakeholders saw the potential for significant impact on patient safety as a result of this project, both in terms of standardized treatment procedures and the implementation of a practice audit process.</li> </ul>   |

There were three main goals in the Development and Endorsement of Alberta-based Methadone Maintenance Guidelines project and the evidence obtained regarding evaluation of their achievement to date is summarized in the following table.

| Goals   | Evidence of Success   |
|---|---|
| To encourage more physicians to obtain methadone licenses for opioid dependency in order to increase access to ODT in communities across Alberta. | <ul style="list-style-type: none"> <li>Between June 2005 and May 2006 there was an increase of 23 physicians with opioid dependence exemptions in Alberta, an increase of 52% (23/44). Currently 67 physicians hold exemptions.</li> <li>While representing a small and interested sample of physicians (i.e., those who completed the MMT workshops and the follow-up survey), 50% (6/12) indicated interest in obtaining an exemption.</li> </ul> |



| Goals   | Evidence of Success   |
|---|---|
| To contribute to the reduction of illicit drug use, improving health status of opioid-dependent individuals as a result of access to treatment, decreasing transmission of HIV, HCV and HBV, decreasing illegal activity, increasing employment, decreasing cost to society and decreasing mortality. | <ul style="list-style-type: none"> <li>• It was determined in the evaluation that the physicians who responded to the follow-up survey plan to provide care to more opioid-dependent patients in the coming year. A rough estimate is that up to 230 additional patients will receive care in the next year although this projection must be used with caution.</li> <li>• These broad-based, long-term outcomes were mainly beyond the scope of this evaluation. However, further research should be conducted to monitor these planned outcomes.</li> </ul> |
| To ensure patient safety in the provisions of ODT.  | <ul style="list-style-type: none"> <li>• Indications of changes to practice are already becoming evident among methadone clinics and practitioners.</li> <li>• Physicians also plan future changes to practice to improve patient safety.</li> <li>• There is significant future potential for improved patient safety through the use of the <i>Standards &amp; Guidelines</i> and the planned implementation of the audit process.</li> </ul>   |

**Drawing conclusions**

Based on the evidence, and in consultation with key stakeholders, what conclusions can be drawn?

**Case study (cont'd)**

- Awareness has been heightened about MMT in Alberta and has begun to have an impact in terms of the increased number of opioid dependence exemptions granted/ under consideration, the number of additional opioid-dependent patients who may be served in the coming year, and the mounting evidence of practice change as a result of *Guidelines* implementation.
- The *Guidelines* offer a strong and standardized way of improving patient safety for methadone treatment in Alberta.
- The training process has also left a legacy of improved partnerships, tested training materials and upgraded content for undergraduate and continuing medical education sessions.
- In less than two years, a significant change has been wrought in the ability of Alberta physicians and other health care providers to treat opioid-dependent individuals in a safe and standardized manner.
- The resources provided by Health Canada to support this project have been well used.
- However, work still needs to be done to embed these changes in future practice.

**Example #11**

**Complex evidence table linking evidence to conclusions and recommendations**

Here is an excerpt from an evidence table that links findings with conclusions and recommendations in the Organ Donation and Transplantation evaluation final report.



**Table X-3: Evidence Summary from Organ Donation and Transplantation Final Report**

| Evaluation Question   | Evidence   | Conclusion   | Recommendation  |
|---|--|--|---|
| <p>Is there a continued need for the federal government's involvement in the development of a coordinated FPT strategy to improve OTDT in Canada?</p> | <ul style="list-style-type: none"> <li>• Federal involvement is necessary to address several unique and critical roles—The Key Informants strongly supported the continued involvement of the federal government in the development of a coordinated FPT strategy for OTDT:</li> <li>• To provide national leadership and a pan-Canadian authority to the issue;</li> <li>• To address a national responsibility that cannot be addressed by individual provinces or organizations as a result of the division of powers related to health care in Canada;</li> <li>• To provide national funding because no individual province or organization would be able to contribute these resources;</li> <li>• To provide national coordination at a high level in support of cross-jurisdictional and cross-organizational collaboration and reduce duplication of effort;</li> <li>• To provide regulatory oversight to ensure a consistent minimum level of OTDT practice in order to maximize patient safety in Canada.</li> </ul> | <p>The Key Informants strongly supported the continued involvement of the federal government in the development of a coordinated FPT strategy to improve OTDT in Canada. In their view, no other government body or non-governmental group can fulfill this function or address this national responsibility by providing national leadership, funding, coordination and regulatory oversight.</p> | <ol style="list-style-type: none"> <li>1. <i>The XXX Organization should continue to work with all stakeholders to ensure that OTDT rates are positively impacted in the next five-year period by</i> <ul style="list-style-type: none"> <li>• <i>Continuing to work with the CDM and a wide variety of OTDT stakeholders to respond to the changing and complex needs of OTDT</i></li> <li>• <i>Providing leadership, coordination and a pan-Canadian perspective for OTDT.</i></li> </ul> </li> </ol> |

### Developing recommendations

You must remember that developing recommendations is first and foremost a political process. The key stakeholders must be involved in the process and political sensitivities must be acknowledged. The recommendations emerge from the evidence-based evaluation process but may not go as far as you would like them to. This is not the evaluator's call but you can facilitate their development.

### Case study (cont'd)

#### 1. Further resources are required

Building on what has now been successfully achieved there are several areas that will need to be resourced in the near future:

- Only two of nine health regions in Alberta received training. The remaining regions need to offer similar workshops to multidisciplinary teams, and partnerships between rural physicians/ pharmacists and methadone clinics need to be fostered; and
- The auditing process associated with implementing the *Standards & Guidelines* will need support if it is to be successful. There needs to be an on-going response that offers Albertans a sense of increased confidence in the system's checks and balances.

#### 2. Further partnerships need to be fostered

A number of potential partnerships need further work to develop understanding about addictions and MMT including stronger ties with the following groups:

- The corrections system;
- Hospital-based physicians/ health care workers;



- Chronic pain practitioners;
- Medical schools and residency training; and
- Pharmacists.

### 3. Further evaluation and research is required

The *Standards & Guidelines* are based on information available about best practice and have been scrutinized through a careful consultation process. However, this has been a pilot project and implementation in the field should be assessed for relevance, practicality, comprehensiveness and success. Intermediate and long-term outcomes should also be evaluated. In addition, while extensive research has been done on MMT, little research is available that relates to the current methadone user groups in Alberta.<sup>8</sup>

## Example #12

Include the appropriate recommendation in the list of recommendations, providing the rationale for the recommendation:

### Recommendation 5. OTDT System Development<sup>9</sup>

*All stakeholders stressed the continued and critical need for a coordinated national OTDT strategy in Canada. In particular, national standards, national registry systems and national information systems and databases were identified as needing development. Therefore:*

#### The XXXX Organization should facilitate OTDT system development by:

- Contributing to the development and implementation of national OTDT information systems and databases; and
- Addressing issues associated with creating a national system for OTDT performance and outcomes.

## Preparing Reports

Patton (2008) provides some helpful principles to think about in order to make a report useful:

- Be intentional about reporting, that is, know the purpose of a report and stay true to that purpose.
- Stay user-focused: focus the report on the priorities of primary intended users.
- Avoid surprising stakeholders.
- Prepare users to engage with and learn from “negative” findings.
- Distinguish dissemination from use.

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<sup>8</sup> For more recent program information, consult:

[http://www.cpsa.ab.ca/services/methadone\\_program/Methadone\\_Program\\_Overview.aspx](http://www.cpsa.ab.ca/services/methadone_program/Methadone_Program_Overview.aspx)

<sup>9</sup> See: [http://www.ccdt.ca/english/publications/final-pdfs/Summative\\_Evaluation\\_Report.pdf](http://www.ccdt.ca/english/publications/final-pdfs/Summative_Evaluation_Report.pdf)



## Tips on Writing Reports

Organize and present findings to facilitate understanding and interpretation by following the DCM outline. A sample report outline includes:

1. Acknowledgements (important to acknowledge your team);
2. Executive Summary (written last);
3. Program Background (and literature review if relevant);
4. Evaluation Overview:
  - a. Purpose;
  - b. Assumptions (program theory and logic model go here) and design;
  - c. Methodology (reference to tools and DCM in appendices);
  - d. Evaluation Limitations and Strengths;
  - e. Intended Use of Findings (Patton, 2008);
5. Program Description (Inputs and Activities);
6. Program Outputs and Outcomes;
7. Discussion, Conclusions (use summary tables) & Recommendations; and
8. Appendices (include the DCM and sample tools)

Report writing can easily take upwards of 30% of a project's time and resources. It is essential to do it well.

- The Health Technology Assessment reporting formula is 1:3:25—for every one page for politicians, there are three pages for the decision maker and 25 for the content experts.
- Have clients publish a PDF version of the final reports on their websites. It helps to spread information and is free marketing for you.
- Always prepare a PowerPoint Presentation as well. It's better if you prepare it rather than the client, then you can ensure that key points are included.
- PowerPoint presentations are important, but they are often too long, too detailed, too boring and you can't read them anyway.
- Try a maximum of 10 slides and focus on the policy questions—why was the study commissioned in the first place?

Here is a Rubric for judging the quality of an evaluation report based on the work of evaluation consultants, Bond and Ray (2006)

### **Program Description:**

- ✓ Is the program described sufficiently for the intended audience to understand what is being evaluated?
- ✓ Does it cover context, purpose, procedures, funding source and program goals?

### **Evaluation Methodology:**

- ✓ Are the evaluation questions answered in the report clearly stated?
- ✓ Are the evaluation design and methodology (including data collection and analysis) described in language that is accessible to the intended audience?



- ✓ Are limitations in the methodology made explicit? Are strengths?
- ✓ Are data sources reported in such a way to protect the confidentiality of respondents?

**Findings:**

- ✓ Are findings reported? Are alternative explanations for findings discussed?
- ✓ Is there evidence that data were systematically collected, analyzed and reported?
- ✓ Are findings supported by the data? Are they conveyed in a way that is easy to understand?
- ✓ Are negative data reported and discussed?
- ✓ Does the report communicate results in a way that respects stakeholders dignity and self worth?

**Conclusions/Recommendations:**

- ✓ Are recommendations supported by the data? Are they clear and actionable?

**Overall Quality:**

- ✓ Is the report well organized? Comprehensive? Clear? Does it need proofing or editing?
- ✓ Are graphics, charts and tables used to good effect?

**Knowledge Translation**

The evaluator’s job is not over when the report is written. A 2007 survey of members of the American Evaluation Association rated the factors that were the most influential in facilitating use (where 1=not at all influential and 5=extremely influential) (Fleischer in Patton, 2008). The top three factors were:

1. Planning for use at the beginning of the evaluation (mean=4.5)
2. Identifying and prioritizing intended uses of the evaluation (mean=4.3)
3. Developing a communication and reporting plan (mean=4.3)

Plan for Knowledge Translation (KT) strategies, report early findings and planned processes in research reports and evaluate KT impact in a post-evaluation phase.

Barwick (2008) has developed a very useful Knowledge Translation Research Plan Template which helps to summarize potential KT strategies for both proposal writing and evaluation planning. (Handout with permission of the author). This important topic needs further development by evaluators. Your thoughts are welcome!

**Discussion and reflection**

- ▶ How can you use a mind map today?
- ▶ How can you use an evidence table in your current work?
- ▶ Who you can involve in developing conclusions and recommendations?
- ▶ How can you support knowledge translation in your next project?



**#15  
Tao Te Ching**

The ancient Masters were profound and subtle.  
Their wisdom was unfathomable.  
There is no way to describe it;  
all we can describe is their appearance.

They were careful  
as someone crossing an iced-over stream.  
Alert as a warrior in enemy territory.  
Courteous as a guest.  
Fluid as melting ice.  
Shapable as a block of wood.  
Receptive as a valley.  
Clear as a glass of water.

Do you have the patience to wait  
till your mud settles and the water is clear?  
Can you remain unmoving  
till the right action arises by itself?

The Master doesn't seek fulfillment.  
Not seeking, not expecting,  
she is present, and can welcome all things.

**Thank you!**

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## Resources

- Barrington Research Group, Inc. (2006). *Final Report Evaluation of the Development and Endorsement of Alberta-based Methadone Maintenance Guidelines*. College of Physicians and Surgeons of Alberta. Edmonton, Alberta.
- Barrington Research Group, Inc. (2006). *Summative Evaluation Final Report*. Canadian Council for Donation and Transplantation. Edmonton, Alberta. December 31, 2006
- Barrington Research Group, Inc. (2007). *Patient Safety Case Study Project, Final Report*. Carewest and Bow Valley College. Calgary, Alberta.
- Barrington Research Group, Inc. (2009). *Medical Access to Service Project – Calgary Zone. Phase 2— Outcome Assessment – Final Report*. Calgary, Alberta.
- Barwick, M. (2008) Knowledge Translation Research Plan Template. Hospital for Sick Children. Toronto, Ontario.
- Bond, Sally & Rae, Marilyn. (2006). Framework for Peer Reviewers of Evaluation Reports. [http://www.tbs-sct.gc.ca/eval/dev/career/workshops-ateliers/aawer-amrre01\\_e.asp](http://www.tbs-sct.gc.ca/eval/dev/career/workshops-ateliers/aawer-amrre01_e.asp)  
<http://www.socialresearchmethods.net/kb/writeup.php>
- Donaldson, S.I. (2007) Program Theory-Driven Evaluation Science: Strategies and Applications. New York: Laurence Erlbaum.
- Government of Canada. Treasury Board of Canada. Results Chain: [http://www.tbs-sct.gc.ca/eval/pubs/RMAF-CGRR/rmaf-cgrr01\\_e.asp#sec1](http://www.tbs-sct.gc.ca/eval/pubs/RMAF-CGRR/rmaf-cgrr01_e.asp#sec1)
- Matheson, S. (Editor). (2005). *Encyclopedia of Evaluation*. Thousand Oaks. Sage.
- Mitchell, S. (trans.) (1988). *Tao Te Ching: A new English version with foreword and notes*. New York: Harper & Row.
- Patton, Michael Quinn. (2008) *Utilization-focused evaluation: 4<sup>th</sup> Edition*. Thousand Oaks: Sage.
- Rossi, P., M. W. Lipsey & H. E. Freeman. (2004) *Evaluation: A systematic approach*. Seventh edition. Thousand Oaks: Sage.
- Scriven, M. (1991). *Evaluation Thesaurus* (4th ed. ed.). Newbury Park, Ca: SAGE.

