I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
Evaluative Thinking to Enhance Innovation in Medical Education

Saad Chahine, PhD
Sept 30, 2016
Evaluation & Innovation
“an innovation must aim to produce benefit to the organization, some subsection of it, and/or wider society (p. 3)”

Role of Evaluation in Innovation

“Evaluative thinking is a necessary component of successful innovation and involves more than measurement and quantification”


http://dx.doi.org/10.1787/5jrxtk1jtdwf-en
Program Evaluation

- Program evaluation boomed post WWII due to numerous publicly funded initiatives and a need to measure effects:
  - prevention programs
  - public housing
  - educational initiatives
  - community organization initiatives
- Establishment of journals and associations in 60/70s gave credibility to the field

Several Types of Evaluation

- **Formative Evaluation**
  - Designed to enhance innovation - structured intervals - focus on feedback

- **Summative Evaluation**
  - Designed to make judgements about innovation - measured outcomes - impacts
Outcomes +

Evaluation for Innovation

“Developmental evaluation supports innovation development to guide adaptation to emergent and dynamic realities in complex environments.”

Multidimensionality

- Literature/evidence base
- Desk/document review
- Theory driven
- Program driven
- Stakeholder judgement
- Use of key informants
- Key indicators
- Case studies
- Evaluation matrix
<table>
<thead>
<tr>
<th>Inputs: resources dedicated to or consumed by the program and constraints on the program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted dollars for faculty development (FD) activities; staff consultants, food, etc.</td>
</tr>
<tr>
<td>Faculty time devoted to attending faculty development activities</td>
</tr>
<tr>
<td>Facility resources devoted to faculty development activities: rooms, equipment, etc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activities: what the program does with inputs to fulfill its mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty development programs devoted to improving teaching skills</td>
</tr>
<tr>
<td>Annual performance evaluations that include feedback on teaching effectiveness</td>
</tr>
<tr>
<td>Program of peer evaluations of teaching</td>
</tr>
<tr>
<td>Teaching awards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outputs: the direct product of program activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of faculty development programs provided</td>
</tr>
<tr>
<td>Number and % of faculty who participate in faculty development programs</td>
</tr>
<tr>
<td>Number and % of faculty who receive annual performance evaluations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcomes: benefits for participants during and after program activities (examples in italics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved teaching skills: self-assessed improvement on post-survey that is statistically significant</td>
</tr>
<tr>
<td>Improved teaching evaluations: 5 year upward trend to average rating of X</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Indicators: identifies what is being measured to track the program’s success on an outcome; observable and measurable</th>
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<tbody>
<tr>
<td>Number and % of new and repeat faculty who participate in FD programs</td>
</tr>
<tr>
<td>Number and % of faculty who rate FD sessions as effective in improving their teaching skills</td>
</tr>
<tr>
<td>Number and % of faculty successfully promoted as clinician-educators</td>
</tr>
</tbody>
</table>

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Multiple Entry Points

Inputs → Activities → Outputs → Outcomes

Context

Evaluation
Logic Models

- Inputs
  - What is needed for your innovation?
    - Faculty
    - Funding
    - Students
    - Space
    - Curriculum

- Activities/Processes
  - What are you planning on doing?
    - Explain the innovation
    - How will it work?
    - Training
    - Assessment
    - Participation
Identify all of your Innovation Inputs

Identify the activities or processes of the innovation
Inputs for General Internal Medicine Longitudinal Clinics

By Dr. Noureen Huda

<table>
<thead>
<tr>
<th>Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Program Director (PD)</td>
</tr>
<tr>
<td>2. Royal College Objectives of Training</td>
</tr>
<tr>
<td>3. Resident orientation</td>
</tr>
<tr>
<td>4. Patient Case Mix:</td>
</tr>
<tr>
<td>• Chronic illness</td>
</tr>
<tr>
<td>• Undifferentiated medical problems</td>
</tr>
<tr>
<td>• Elderly</td>
</tr>
<tr>
<td>5. Learning resources</td>
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Activities for
General Internal Medicine
Longitudinal Clinics

<table>
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<td>1. Patient assessment</td>
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<tr>
<td>2. Medication reconciliation</td>
</tr>
<tr>
<td>3. Review Patient with supervisor</td>
</tr>
<tr>
<td>4. Clinical documentation</td>
</tr>
<tr>
<td>5. Communication with other physicians/ allied healthcare</td>
</tr>
<tr>
<td>6. Clinical teaching and feedback by faculty</td>
</tr>
<tr>
<td>7. Access learning resources in clinic</td>
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</table>
Outputs & Outcomes

**Outputs**

- Number of faculty trained
- Products produced
- Places changes
- Procedures developed
- Other tangible elements

**Outcomes**

- What impact will your innovation have?
  - In the short-, mid-, and long-term, how will your innovation have impact on...?
  - Alignment with strategic plans
Identify outputs of the innovation

Identify outcomes (short/mid/long term)
## Outputs for General Internal Medicine Longitudinal Clinics

<table>
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<th>Outputs</th>
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<tbody>
<tr>
<td><strong>Training Assessments:</strong></td>
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<tr>
<td>1. Consult letter evaluation</td>
</tr>
<tr>
<td>2. Administrator feedback</td>
</tr>
<tr>
<td>3. Mini-CEX</td>
</tr>
<tr>
<td>4. Clinic evaluation</td>
</tr>
<tr>
<td>5. In-training MCQ &amp; oral exams</td>
</tr>
<tr>
<td><strong>Patient Assessments:</strong></td>
</tr>
<tr>
<td>1. Results of investigations</td>
</tr>
<tr>
<td>2. Guiding learning</td>
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Outcomes for General Internal Medicine Longitudinal Clinics

<table>
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<tr>
<td>1. Ability to build a practice profile</td>
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<td>2. Performance on Royal College exams</td>
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<tr>
<td>3. Identity formation</td>
</tr>
<tr>
<td>4. Self-directed learning</td>
</tr>
<tr>
<td>5. Meeting population needs</td>
</tr>
</tbody>
</table>
Innovations do not work in a vacuum

Contextual factors that effect the logic of the innovation

External factors that play a role in the innovation process

Cultural factors that may govern process
Identify contextual factors that may influence the innovation
Combine it all together in a big process diagram
Draft Logic Model

Data Sources from Longitudinal Clinics

1. Program Director (PD)
2. Royal College Objectives of Training
3. Resident orientation
4. Patient Case Mix:
   - Chronic illness
   - Undifferentiated medical problems
   - Elderly
5. Learning resources

1. Patient assessment
2. Medication reconciliation
3. Review Patient with supervisor
4. Clinical documentation
5. Communication with other physicians/allied healthcare
6. Clinical teaching and feedback by faculty
7. Access learning resources in clinic

Training Assessments:
1. Consult letter evaluation
2. Administrator feedback
3. Mini-CEX
4. Clinic evaluation
5. In-training MCQ & oral exams
   Patient Assessments:
   1. Results of investigations
   2. Guiding learning

1. Ability to build a practice profile
2. Performance on Royal College exams
3. Identity formation
4. Self-directed learning
5. Meeting population needs
Evaluation of Medical Support to Deployed Operations

What does your initial model look like?
The Evaluation Matrix

LM Elements
- Inputs
- Activities
- Outputs
- Outcomes

Methods
- Focus Groups
- Interviews
- Surveys
- Assessments

Indicators
- Numbers
- Assessments
- Attendance
- Change

Sources
- Faculty
- Trainees
- Administration
- Patients

Additional Elements
- Time/Phases/Steps
- By whom (team)
- Oversight
- Expectations
Use your logic model to build an initial evaluation matrix
Thank you!