(Dissemination and) Implementation Science for Global Cancer Control

BHGI Summit 2018
Day 2

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Comprehensive conceptual Model

What?
Evidence-Based Interventions

How?
Implementation Strategies*

Implementation Outcomes
Appropriateness
Feasibility
Acceptability
Fidelity
Penetration
Reach
Sustainability
Uptake
Costs

Service Outcomes*
Efficiency
Safety
Effectiveness
Equity
Patient-centeredness
Timeliness

Patient Outcomes
Incidence
Mortality
Morbidity
(Symptoms
Function
Satisfaction)

*Adaptation; Adaptation of a guideline to suit the context in which it is intended to be applied can be a key step in the implementation process.

Proctor et al 2009 Admin. & Pol. in Mental Health Services; © 2008, Johns Hopkins University. All rights reserved.

CONTEXT

Implementation Research Methods

CONTEXT

CONTEXT
Consolidated Framework for Implementation Research

CFIR is composed of factors shown to influence implementation processes and outcomes:

**IMPLEMENTATION**

- **Characteristics of the Intervention**
  - Intervention source
  - Evidence strength and quality
  - Relative advantage
  - Adaptability
  - Trialability
  - Complexity
  - Design quality
  - Cost

- **Inner Setting**
  - Structural Characteristics
  - Networks and Communications
  - Culture
  - Implementation Climate
  - Readiness for Implementation

- **Outer Setting**
  - Patient needs and Resources
  - Cosmopolitanism
  - Peer pressure
  - External policies and incentives

- **Individuals Involved**
  - Knowledge and beliefs about the intervention
  - Self-efficacy
  - Individual stage of change
  - Individual identification w/ organization
  - Other personal attributes

- **Implementation Process**
  - Planning
  - Engaging
  - Executing
  - Reflecting and evaluating

Time to ACT: Implementing strategies for breast cancer control in Tanzania

Assess (local context)

Couple (strategies to context)

Test (implementation strategies)

The overarching goal of the study is to reduce breast cancer morbidity by developing a toolkit to design and implement contextually appropriate, stakeholder-driven, evidence-based programs for breast cancer control.
Spectrum of Implementation science research methods

Aim 1A
[Y1 Q1-Y1 Q3]
Assess:
Breast cancer burden, care, and outcomes

Aim 1B
[Y1 Q4 – Y2 Q2]
Assess:
Stakeholder perceptions of breast cancer and control

Aim 2A
[Y2 Q3- Y2 Q4]
Couple:
Link data to options and select strategies

Aim 2B
[Y3 Q1- Y3 Q4]
Test:
Implement strategies to demonstrate feasibility and improvement

Mixed methods to assess women and healthcare perspectives

Stakeholder engagement in the MCDA and strategy development

Pre/post-test for feasibility, reach, adoption of breast care seeking

Retrospective chart review

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Scenario analysis tool to facilitate intervention and implementation development

### MODEL INPUT

<table>
<thead>
<tr>
<th>Model parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target population screened</td>
<td>25,000</td>
</tr>
<tr>
<td>Screening interval</td>
<td>5 years</td>
</tr>
<tr>
<td>CIN2+ prevalence</td>
<td>0.03</td>
</tr>
<tr>
<td>Percent of women screened</td>
<td>0.4</td>
</tr>
<tr>
<td>Percent of screen positives</td>
<td>0.4</td>
</tr>
<tr>
<td>Percent CIN2+ treated</td>
<td>0.5</td>
</tr>
<tr>
<td>Screening test sensitivity for CIN2+</td>
<td>0.5</td>
</tr>
<tr>
<td>Screening test specificity for CIN2+</td>
<td>0.85</td>
</tr>
<tr>
<td>Diagnostic test sensitivity for CIN2+</td>
<td>0.65</td>
</tr>
<tr>
<td>Diagnostic test specificity for CIN2+</td>
<td>0.85</td>
</tr>
</tbody>
</table>

### MODEL OUTPUT

- Define population
- Define participation
- Define test performance

**BALANCING PERFORMANCE AGAINST IMPLEMENTATION REALITIES IN LMIC SETTINGS**

AN EXCEL-BASED SCENARIO IMPACT ANALYSIS TOOL (SCIMAT) FOR DESIGN OF CONTEXTUALLY APPROPRIATE SCREENING STRATEGIES

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**Process mapping → Patient T/C/D burden**

**PHASE 1**
- Health center: Performing breast checks
- Woman referred to hospital for evaluation
- Patient evaluated in hospital
- Decision: 1. Surgery recommended, 2. No surgery recommended

**PHASE 2**
- Patient returns for follow-up in 6 months (L. year)
- Patient returns for follow-up in 1 year

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**Phase 1: Cryotherapy**

<table>
<thead>
<tr>
<th>Distance (km)</th>
<th>Active Time (hrs)</th>
<th>Passive Time (days)</th>
<th>Cost (sol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>83.08 (104.52)</td>
<td>14.22 (21.50)</td>
<td>46.11 (79.85)</td>
<td>220.97 (337.50)</td>
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</tbody>
</table>

**Phase 1: LEEP**

<table>
<thead>
<tr>
<th>Distance (km)</th>
<th>Active Time (hrs)</th>
<th>Passive Time (days)</th>
<th>Cost (sol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>83.08 (104.52)</td>
<td>14.22 (21.50)</td>
<td>46.11 (79.85)</td>
<td>300.37 (461.64)</td>
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</tbody>
</table>

**Phase 2: Cryotherapy**

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<tr>
<th>Distance (km)</th>
<th>Active Time (hrs)</th>
<th>Passive Time (days)</th>
<th>Cost (sol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.65 (22.14)</td>
<td>5.65 (9.47)</td>
<td>36.23 (71.07)</td>
<td>72.35 (108.90)</td>
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</table>

**Phase 2: LEEP**

<table>
<thead>
<tr>
<th>Distance (km)</th>
<th>Active Time (hrs)</th>
<th>Passive Time (days)</th>
<th>Cost (sol)</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.21 (30.40)</td>
<td>6.76 (11.01)</td>
<td>36.27 (71.14)</td>
<td>153.12 (234.69)</td>
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</table>
The role of implementation science


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Thank you!
Merci!
Gracias!
Asante Sana!