SYSTEMATIC PLANNING FOR ADAPTATION AND IMPLEMENTATION OF CANCER CONTROL INTERVENTIONS

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MARIA E. FERNANDEZ, PHD
Lorne Baine Distinguished Professor in Public Health
Professor of Health Promotion and Behavioral Sciences
Director, Center for Health Promotion and Prevention Research
School of Public Health, University of Texas Health Science Center at Houston
Planning for Program Use Is Essential

The ultimate impact of a cancer control intervention, practice, or policy depends on its:

• Effectiveness

• Reach in the population
Why do we need systematic planning for adaptation and implementation?
Implementation of Evidence.... “It’s Complicated”
A Cancer Control Example

Types of Care

- Risk Assessment
  - Age
  - Family Hx
  - Exposure Hx
  - Genetics
  - Lifestyle
  - Screening Hx
- Primary Prevention
  - Lifestyle counseling
  - Chemo prevention
- Detection
  - Screening (Asymptomatic)
  - Appropriate Testing (Symptomatic)
- Diagnosis
  - Imaging
  - Biopsy
  - Repeat Exams
  - Laboratory Tests
  - Other Appropriate Procedures
- Cancer or Precursor Treatment
  - Excision
  - Surgery
  - Radiation
  - Adjuvant Chemo
  - Palliation
- Recurrence Surveillance
  - Testing
  - Follow-up Care
  - Palliation
  - Survivorship Care
- End-of-Life Care
  - Palliative Care
  - Advanced Care
  - Planning Bereavement Support

Outcomes

- Risk Status
  - Clinical Status
  - Functional Status
  - Quality of Life
  - Satisfaction
  - Mortality
  - Quality of Death

Potential Failures during the Processes of Care

- Failure to Identify Need to Screen or Counsel
  - Failure in Access to Care
- Primary Prevention Failure
- Failure in Detection
- Failure During Diagnostic Evaluation
- Failure of Treatment
- Failure in Surveillance
- Failure in Care

(Zapka, et al., 2003)
Help with Finding, Adapting, and Implementing EBAs is Needed

• Cancer Control practitioners often lack the knowledge and skills needed to put evidence in action

• Help needed:
  • Find EBAs and assess strength of evidence supporting an EBAs
  • Assess EBAs fit with their population or setting
  • Assess organizational capacity to implement EBAs
  • Adapt EBAs to population or setting
  • Developing implementation strategies to increase use and to scale up efforts

Escoffery, Hannon, Maxwell, Vu, Leeman et al. 2015
Implementation Strategies vs. Implementation Intervention

Implementation Interventions: interventions to increase program use (adoption, implementation, and/or maintenance)

Implementation Strategies

- **Discrete** - Single action or process (e.g., institute system of reminders)
- **Multifaceted** - Combination of multiple discrete strategies (e.g., training + reminders)
- **Blended** - Multifaceted strategies that have been protocolized and (often) branded (e.g., ARC)

Bartholomew et al. (2001); Powell et al., 2012; Procter 2011
Developing (or choosing) strategies: a process too often haphazard

ISLAGIATT principle

“It Seemed Like A Good Idea At The Time”

Martin Eccles via Jeremy Grimshaw’s (2012) Presentation at KT Summer Institute
What is Intervention Mapping?

- A systematic approach to program development, implementation & evaluation
- It provides a framework for decision-making at each step
  - Theory
  - Empirical evidence
  - Community input
- Uses an ecological approach
Demystifying the ‘Black Box’

"I think you should be more explicit here in step two."
Intervention Mapping: A Systematic Approach for Program, Development, Implementation and Adaptation

Three ways to use IM for D&I

1. Designing programs in ways that enhance its potential for being adopted, implemented, and sustained

2. Designing dissemination interventions (strategies) to influence adoption, implementation and continuation

3. Using IM processes to adapt existing evidence-based interventions

Intervention Mapping guides the D&I planner/researcher to answer the following questions:

- Who will decide to use the program? Who will implement the program? Who will assure that the program continues over time?
- What do they need to do?
- Why would they do it (determinants)?
- How (what methods and strategies) do we influence these adoption, implementation, and maintenance behaviors and conditions?
Specify Implementation Performance Objectives: Figuring out the WHAT before the HOW

What are the subcomponents of the Implementation behavior?
- What do the program implementers need to do to deliver the essential program components with acceptable completeness, fidelity and adaptation?
Identify determinants, methods and strategies to address determinants of implementation

Implementation

- **Determinants:** Outcome expectations, Self-efficacy, Attitudes

- **Methods:** Persuasion, Active learning, Social support, Dissonance reduction, Modeling, Skill building

- **Strategies (how these methods are operationalized):** Workshops, Discussion, Problem analysis, Role playing, Team meeting, Problem solving, Guided practice, Newsletters, Model stories, Resources, Information
Tasks

1. Identify potential program implementers
2. State outcomes and performance objectives for program use
3. Construct matrices of change objectives for program use
4. Design implementation interventions
Por Nuestros Hijos
(For Our Children)
An educational program to increase HPV vaccination
For Our Children

Our team developed **two educational interventions** for Hispanic parents, and conducted a **group randomized trial** to assess their effectiveness in increasing HPV vaccination among Hispanic adolescents.

**Tailored Interactive Multimedia Intervention**

**Print Fotonovela**
Tailored Interactive Multimedia Intervention

- Interactive web-based application.
- Uses videos and presentations to educate parents about HPV and HPV vaccination.
- Tailors information to address parental concerns and barriers.
- Applies role-modelling to encourage parents to vaccinate their children.
Fotonovela

- Follows the same story as the TIMI
- Story-telling format helps convey health information to individuals with low-literacy skills
- Employs theory and evidence-based methods, such as role modelling.
Effectiveness of Interventions on Vaccine Initiation

- Parents who received the TIMI were significantly more likely to vaccinate their daughters at the six month follow-up compared to parents in the control group.

- Parents who received the fotonovela intervention were significantly more likely to vaccinate their daughters at the six month follow-up compared to parents in the control group.

- There was no statistically significant difference in HPV initiation between the two interventions.
For Our Children

- Adapt the For Our Daughters program for parents of boys
- Assess the effectiveness of the adapted TIMI for parents of boys on increasing HPV vaccination
Program Adaptation

- **IM Step 1:** Reviewed the literature and conducted focus groups with Hispanic parents of boys to determine if psychosocial factors influencing vaccination decision-making for boys differed
  - Revealed a need to increase knowledge that the vaccine was available for boys as well as for girls
  - Few concerns regarding sex and the vaccine discussed when focusing on boys versus when discussing the vaccine and girls

- **IM Step 2:** Developed matrices of change based on updated determinants; overall outcome and performance objectives remained the same as those in the interventions targeting parents of girls
**Program Adaptation**

- **IM Step 3:** Updated theory- and evidence-based change methods for new determinants
  - Added a video vignette of mothers discussing the vaccine availability for both adolescent girls and boys
  - Removed messages that were not relevant to parents of boys
  - Added text message reminder component
  - Repackaged program as *For Our Children*
Program Adaptation

- **IM Step 4:** Adapted scripts, flowcharts, and animations to produce a new TIMI and fotonovella for Hispanic parents of boys

Video production

Adapted fotonovella scene
Program Adaptation

- **IM Step 5: Develop an implementation intervention**
  - Adapted *For Our Daughters* LHW training
  - Included updated information on HPV vaccination for males

- **IM Step 6: Program evaluation**
  - Currently conducting sequential, multiple assignment, randomized trial (SMART) to assess program effectiveness
A tool for program adaptation using Intervention Mapping

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Possible Entry Points

- **Step 1** Analyze needs and set goals
  - Describe needs and goals
  - Describe behavioral and environmental targets and determinants
  - Create logic model of change

- **Step 2** Discover available interventions
  - Find EBIs
  - Review EBIs for basic fit
  - Select EBIs for adaptation planning

- **Step 3** Adapt for your population and setting
  - Describe EBI materials, activities, design, delivery & Content
  - Compare EBI with logic model
  - Make adaptation decisions

- **Step 4** Put into practice
  - Decide where to implement changes
  - Pre-test
  - Implementation plan
  - Scope & Sequence

- **Step 5** Test Your Progress
  - List process evaluation questions with focus on what was changed
  - List outcome evaluation questions
Dissemination of an evidence-based HPV vaccination intervention
Developing an Implementation Intervention

**Purpose:**
Increase adoption and implementation of *For Our Children* in both clinical and community settings across Texas.

**Two phases:**
1. Targeted dissemination through adopting agencies
   - Training and technical support for clinics and CHW organizations that agreed to adopt the program
2. Dissemination through clinical and community networks
   - Passive and active strategies to increase program implementation and dissemination
Identify program adopters and implementers

In what setting or organization will the program be adopted?
- Community Health Clinics
- Community Health Worker Organizations

Who will decide to adopt the program?
- Identify decision-makers within organization
  - Clinic Directors
  - CHW Agency Directors/Board Members

Who will implement the program?
- Program Coordinators/Outreach Coordinators
- Community Health Workers (CHWs)
- Clinic staff
Outcomes and performance objectives

Outcome for adoption:

- The Clinic Director will adopt *For Our Children*, an educational intervention for Hispanic parents, to increase HPV vaccination rates in adolescents aged 11 – 17 years.

Performance objectives for adoption:

1. Agree to participate in *For Our Children* program
2. Obtain administrative approval
3. Obtain staff buy-in
4. Identify program champion to support implementation
5. Budget program into clinic operations
Performance Objectives for Implementation (Clinics)

Clinic/agency decision makers will:
- Identify Program Coordinator to oversee program implementation
- Budget program into clinic operations

Program coordinator will:
- Identify resources required to implement the program
- Identify staff to implement the program
- Designate time for staff to complete program training

Clinic staff will:
- Participate in program training
- Identify and recruit eligible parents using patient records
- Deliver education session using program materials
- Arrange HPV vaccination appointments
- Follow-up with parent to ensure initiation and completion of HPV vaccine
Performance Objectives for Implementation (CHW Organizations)

Agency decision makers will:
- Identify Program Coordinator to oversee program implementation
- Budget program into agency operations

Program coordinator will:
- Identify resources required to implement the program
- Identify Community Health Workers to implement the program
- Coordinate training for Community Health Workers

Community Health Workers will:
- Participate in program training
- Identify and recruit eligible parents within the community served
- Collaborate with community partners to promote the program and recruit parents
- Deliver education sessions using program materials
- Navigate parents to local health clinics providing HPV vaccination services
Matrices of change objectives

- Why would adopters decide to use the program?
- Why would implementers do what is necessary to implement the program?

Determinants influencing performance objectives:

- Knowledge/awareness
- Skills and self-efficacy
- Attitudes
- Perceived norms
- Expected outcomes
### Matrices of change objectives

<table>
<thead>
<tr>
<th>Performance objectives</th>
<th>Knowledge/Awareness</th>
<th>Skills &amp;Self-efficacy</th>
<th>Attitudes</th>
<th>Perceived Norms</th>
<th>Outcome expectation</th>
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<tbody>
<tr>
<td>PO1. Clinic Director agrees to adopt <em>For Our Daughters</em></td>
<td>K1a. Recognize that <em>For Our Daughters</em> is a culturally appropriate program</td>
<td>SSE.1.a. Demonstrate the ability to work with the UTH Health research team to start the implementation process.</td>
<td>A.1.b. Believe that the program will improve upon current practice and improve HPV vaccination rates.</td>
<td>PSN.1.a Recognize that other clinics are prioritizing HPV vaccination for Hispanic adolescents (11-18 years).</td>
<td>O.1.a Expect that implementing the program will increase HPV vaccination rates among Hispanic adolescents (11-18 years) served by the clinic.</td>
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<td>K1b. Describe that the program is available at no cost</td>
<td>SSE.1.b. Nominate a program champion within the clinic to oversee implementation of the program.</td>
<td>A.1.c. Believe that the program fits with organizational priorities.</td>
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<td>K1c. Recognize the program will provide resources to the clinic</td>
<td>SSE.1.c. Demonstrate the ability to identify the necessary resources required to implement the program.</td>
<td>A.1.d. Believe that the program will be adopted and implemented with minimal risk/changes.</td>
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<td>K1d. Describe the program as a tool for increasing HPV vaccination rates</td>
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<td>K1e. Describe the program as a tool for increasing HPV vaccination rates among Hispanic adolescents (11-17 years).</td>
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<tr>
<td>Implementation</td>
<td>Determinants</td>
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<tr>
<td><strong>PO1. Program Coordinator identifies resources required to implement For Our Children</strong></td>
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<tr>
<td>K.1.a. List resources required to implement the program</td>
<td>SSE.1.a. Demonstrate ability to identify resources required to implement the program</td>
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<tr>
<td>K.1.b. Describe the availability of resources and the process for allocating resources required to implement the program.</td>
<td>A.1.a. Express confidence in obtaining the resources needed to implement the program.</td>
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<td>PSN.1. Recognize that other clinics have allocated resources to implement the program.</td>
<td>OE.1. Expect that allocating resources will enable the clinic to implement the FOC program effectively and increase HPV vaccination rates among Hispanic adolescents.</td>
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<td><strong>PO2. Program Coordinator identifies staff to implement For Our Children</strong></td>
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<td>K.2.a Describe the capabilities staff require to implement the program</td>
<td>SSE.2.a. Demonstrates ability to identifying existing staff to implement the program</td>
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<tr>
<td>K.2.b Identify existing staff to implement the program</td>
<td>A.2.a. Express confidence in identifying existing staff.</td>
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<tr>
<td>K.2.c Describe the process for recruiting additional staff to implement the program (if required).</td>
<td>PSN.2.a Recognize that other program coordinators are involved in identifying and recruiting staff to deliver health education programs.</td>
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<td>PSN.2.a Recognize that other program coordinators are involved in identifying and recruiting staff to deliver health education programs.</td>
<td>OE.2. Expect that identifying and recruiting staff to deliver the program will facilitate successful implementation of the program.</td>
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<tr>
<td><strong>PO3. Program Coordinator designates time for staff to complete program training</strong></td>
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<td>K.3.a List dates and times when training will be conducted for staff</td>
<td>SSE.3. Demonstrates ability to identify and allocate resources required for training.</td>
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<td>K.3.b List resources required to conduct training.</td>
<td>A.3.a Express confidence that training session will help staff to implement the program effectively.</td>
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<td>PSN.3.a. Recognize that other program coordinators support staff to participate in training programs.</td>
<td>OE.3. Expect that by attending training, staff will be able to successfully implement the FOC program and increase HPV vaccination rates among Hispanic adolescents.</td>
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## Methods and Strategies

<table>
<thead>
<tr>
<th>Person Responsible</th>
<th>Performance objectives</th>
<th>Determinants</th>
<th>Theoretical Methods</th>
<th>Strategies/Program Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic Decision Maker</td>
<td>PO1. Clinic director decides to use For Our Children.</td>
<td>Knowledge</td>
<td>Information</td>
<td>Promotion via Partner networks.</td>
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<td></td>
<td>PO2. Clinic director obtains administrative approval.</td>
<td>Skills and Self-efficacy</td>
<td>Persuasion</td>
<td>Email and teleconferences.</td>
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<td>PO3. Clinic director obtains staff buy-in.</td>
<td>Attitudes</td>
<td>Role modelling</td>
<td>Presentations at webinars, conferences, workshops and meetings.</td>
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<td>PO4. Clinic director identifies program champion to support implementation.</td>
<td>Perceived Norms</td>
<td>Organizational Consultation and Planning</td>
<td>Promotional materials (flyers, content for newsletters and email distribution lists).</td>
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<tr>
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<td>PO5. Clinic director budgets the program into clinic operations.</td>
<td>Outcome Expectations.</td>
<td></td>
<td>Guidelines for program implementation.</td>
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<td>Introductory package outlining resources required to implement and resources available.</td>
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</table>
Partnerships

Promotion via partners:

- MD Anderson
- Texas Dep of State Health Services:
  - Breast and Cervical Cancer Control Services
  - Immunization Branch
  - Family Planning
  - Texas Healthy Women
- American Cancer Society
## Phase 1: Adopting organizations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Activities</th>
<th>Reach</th>
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</table>
| **Cancer and Chronic Disease Consortium of El Paso (CCDC)** | • April 2017: Trained 3 CHWs and 1 Coordinator (FOD)  
• Qualitative interviews completed  
• Plan to provide booster training using FOC | 85 parents  
167 children |
| **Presa Community Center**                 | • May 2017: Trained 3 CHWs and 1 Coordinator  
• Distributed fotonovela at Back-to-School Health Fair  
• Staff have turned over – currently recruiting  
• Plan to retrain using FOC  
• Will incorporate program into CHW training course | 57 parents |
| **DFW-CHW**                                | • June 2017: Trained 11 CHWs and Program Coordinator (CHWs not employed by DFW-CHW but work for various agencies, clinics and schools)  
• Approx. 3 – 5 actively implementing program  
• Qualitative interviews completed | 188 parents |
| **Cameron County Dep Health**              | • October 2017: Trained 25 staff (clinical, CHW and admin)  
• 20 staff attended HPV education session only  
• 4 CHWs & 1 Coordinator trained to implement | First report due December 17 |
Findings to date:

Education sessions
- Incorporated suggestions from course evaluations into revised training (approved by DSHS for CHWs)

Resources
- TIMI and fotonovela – innovative, useful and culturally appropriate
- Using some elements of the program but not always implementing as planned
- Using fotonovela as main resource and providing parents with the link to the TIMI

Possible adaptations
- Short presentation on HPV, cancer and vaccine for parents (group sessions)
- Fact sheet for parents – one page summary of key messages
- Webpage – Implementation strategies with links to program resources
- Short video clips using TIMI footage (available on YouTube, website)
Phase II: Dissemination Intervention

1. Promotion of For Our Children program
   - Promote program to CHW Organizations and health services involved in HPV vaccination
   - Distribute promotional materials via partners and HPV networks

2. Follow-up with interested organizations
   - Starter Kit – program overview, goals and objective
   - Organizational Readiness checklist
   - Program Manual – guide to implementing program effectively and with fidelity

3. Train organizations to implement the program
   - DSHS approved training for CHWs
   - Training Toolkit – training materials, HPV education resources, templates and protocols

4. Evaluation of implementation strategies
   - Process evaluation
   - Qualitative interviews with CHWs/staff and Program Coordinators implementing
Take home points

- Intervention Mapping provided a systematic process for both adaptation and implementation of evidence based cancer control interventions.
- There is much work to be done in understanding and defining the mechanisms of change of implementation strategies.
- Partnerships and communication are key.
- Systematic planning that is participatory, and uses theory/frameworks, evidence, and new data can lead to more successful implementation strategies.
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- Lara Savas, PhD, Co-Investigator
- Serena Rodriguez, PhD, Postdoctoral Fellow
- Jessica Delaney, Project Coordinator
- Ileska Valencia Torres, Research Assistant
- Yolanda Serra Martinez, Research Assistant

Other Investigators
- Patricia Dolan Mullen, DrPH
- Cam Escoffrey, PhD