3/4/2020
An Overview of Social Determinants of Health:
Where and how do we collect information? Why does it matter?
Megan Morris

Beginning March: Health Equity Seminar Series Part 2, a Focus on Social Determinants of Health
Topics to include (but not limited to):
• Methods, Measures, & Interventions
• Overview & Screening/Documentation (ACES)
• Screening for SDoH
• Pediatrics
• Social Network Analysis

Recorded seminars can be found on our website https://goo.gl/1q9nUx
Request a Planning or Support Consultation with the Education Program
June 10-11, 2020

THE COLORADO PRAGMATIC RESEARCH IN HEALTH CONFERENCE
Advancing Pragmatic Science for Health Research

REGISTRATION OPENS
2/3/2020
POSTER ABSTRACT
SUBMISSION
Open 2/3/2020 – 3/16/2020

FEATURED KEYNOTE SPEAKERS
Daniel Almirall
Mike Baiocchi
Ross Brownson
Kate Guastaferro
Amy Kilbourne
Jessica Moreau
Borsika Rabin

LOCATION
University of Colorado
Anschutz Medical Campus
Aurora (Denver), Colorado

Goal: Advancing the science and appropriate and effective use of pragmatic research design and methodologies

Attendees: Clinical and translational investigators, including statisticians, dissemination & implementation scientists, health services and public health researchers and program evaluators

Theme: Methods, models, and measures for planning pragmatic research

2020 Topics: Pragmatic trial planning using the PRECIS-2, pragmatic research approaches and study design including multi-phase optimization strategy (MOST) and sequential multiple assignment randomized trial (SMART) designs, rapid qualitative and mixed methods, and stakeholder engagement.

Conference activities will inform design of pragmatic science capacity building tools for application of pragmatic methods and fostering team science through collaborations and a virtual learning community.

Watch for details here: www.coprhcon.com or https://qrgo.page.link/5pwCZ
Planning Multilevel Interventions and Implementation Strategies to Increase Health Equity

María E. Fernández, PhD
Lorne Bain Distinguished Professor in Public Health and Medicine
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
Objective

- Health equity and social determinants of health
- Multilevel intervention planning using Intervention Mapping
- Implementation Mapping for the development and/or selection of implementation strategies
- Examples
What are Social Determinants of Health?

Conditions in the environments where people are born, work, live, and play that affect their health outcomes and quality of life.

Social Determinants of Health

- Education
- Access to Healthcare
- Income
- Transportation
- Housing
- Neighborhood
- Work Environment
- Discrimination
Health Inequities and the Social Determinants of Health

Health Inequities:
- Health inequities are inequalities characterized by unfairness or injustice
- “Of all the forms of inequality, injustice in health care is the most shocking and inhumane.” Martin Luther King, Jr.; 1966

“Poverty is a carcinogen.”
Samuel Broder, M.D., Former Director of NCI; 1989

“Where you live should not decide, whether you live or whether you die.” U2, Crumbs from Your Table, 2004
Mechanisms underlying the relationship between SDOH and Health Outcomes

- **Negative experiences/environments/exposure to threat or harm**
  - discrimination, chronic stressors, violence

- **Inter/Intrapersonal resources**
  - social support, collective efficacy/social capital

- **Affect/cognition**
  - motivation, human agency

- **Health behaviors**
  - smoking, alcohol, diet, physical activity
Multiple Levels of Influence

**Local Community**
- Community Level Resources
- Medical care offerings
- Population SES
- Lay support networks
- Private cancer organizations
- Local Hospital & Cancer Services
- Market
  - Market structure
  - Level of competition
  - Third party payers/insurance
  - Pay for performance initiatives
  - HMO / managed care penetration
  - Percent non-profit
  - Specialty mix
- Local Professional Norms
  - MD practice organizations
  - Use of guidelines
  - Practice patterns

**Provider / Team**
- Knowledge, communication skills
- Perceived barriers, norms, test efficacy
- Cultural competency
- Staffing mix & turnover
- Role definition
- Teamwork

**Individual Patient**
- Biological factors
- Socio-demographics
- Insurance coverage
- Risk status
- Co-morbidities
- Knowledge, attitudes, beliefs
- Decision-making preferences
- Psychological reaction/coping

**National Health Policy**
- Medicare reimbursement
- Federal efforts to reform healthcare
- National cancer initiatives
- Accreditations
- Professional standards

**State Health Policy**
- Medicaid reimbursement
- Hospital performance data policies (dissemination, visibility, etc.)
- State cancer plans/programs
- Regulations/limitations on reimbursement of clinical trials
- Activities of state-wide advocacy groups

**Organization / Practice Setting**
- Leadership
- Organizational structure, policies and incentives
- Delivery system design
- Clinical decision support
- Clinical information systems
- Patient education & navigation

**Family / Social Supports**
- Family dynamics
- Friends, network support

**Improved Quality of Cancer Care**

**Improved Cancer-Related Health Outcomes**

(Taplin, et al., 2012)
Integrating Clinical, Community, and Policy Perspectives on HPV Vaccination

Figure 1: Logic Model of Factors Influencing HPV Vaccination

Behavioral Factors:

- Willingness/Intention to vaccinate one’s daughter (Parents)
- Willingness/Intention to vaccinate self (Adolescents and young women)

Environmental Factors:

- Interpersonal
  - Clinician recommendation

- Organizational
  - Recommendations made by national immunization programs and professional organizations
  - Infrastructure for implementation of adolescent vaccination (schools, other organizations)
  - Office procedures to maximize vaccination
  - Clinic policies or protocols

- Community/Societal
  - Health insurance, Medicaid, or access to VFC
  - Availability (community access—eg. mobile vans)
  - Immunization registries
  - Social capital/community context
  - Policy
  - Cost of the vaccine/Insurance coverage/Subsidies
  - Pharmaceutical marketing

Factors influencing willingness to vaccinate daughter
- Perceived barriers to vaccination
- Belief about acceptable age for vaccination
- Perceived adverse behavioral consequences

Factors influencing willingness/intention to vaccinate one’s daughter or oneself
- Knowledge of HPV and its relation to cancer
- Perceived vaccine safety, effectiveness, and side effects
- Perceived severity to HPV & HPV related disease
- Perceived susceptibility to HPV
- Perceived social norms
- Subjective norms
- Perceived provider endorsement
- General attitudes about vaccines
- Perceived benefits

Factors influencing willingness to vaccinate oneself
- Perceived feelings of parents -subjective norms
- Belief in the health benefits

Factors impacting clinician recommendation for vaccination
- Perceived value of recommendations made by national immunization programs and professional organizations
- Belief that influential organizations endorse vaccine
- HPV knowledge
- Perceived risk of patient to HPV and HPV-related diseases
- Concern about the need to discuss sexuality when recommending HPV vaccine
- Perceived severity of HPV infection
- Belief in importance of vaccinating prior to sexual initiation
- Barriers and benefits to vaccination
- Belief in mandated vaccination
- Academic vs non-academic practice

Willingness/Intention to vaccinate one’s daughter (Parents)
- Perceived feelings of parents -subjective norms
- Belief in the health benefits

Willingness/Intention to vaccinate self (Adolescents and young women)
- Perceived feelings of parents -subjective norms
- Belief in the health benefits

Reduction in HPV-related disease

Multilevel Framework of HPV Vaccination among Adolescents in the U.S.

Individual-level

Parental psychosocial factors
- Knowledge
- Beliefs
- Intention to vaccinate
- Experience with preventive healthcare

Parent behavioral factors
- Accessing preventive healthcare

Adolescent behavioral factors
- Interaction with the healthcare system
  - Regular healthcare provider visits
  - Receipt of other adolescent vaccines

Clinic-level

Patient-focused clinic systems
- Reminder/recall systems
  - Phone calls
  - Text message reminders
  - Mailed letters
  - Outreach visits

Provider-focused clinic systems
- Assessment & feedback
- AFIx
- Provider reminders

Provider-level

Behavior
- HPV vaccine recommendation

HPV vaccine uptake

Reduction of HPV-related cancers and genital warts

Rodriguez, SA et al. (2020)
Diverse components and actors that interact with each other and with the external environment.

Property of both the intervention and the context.

Unpredictability of effects.

Invites new approaches to addressing the issue.
How to intervene and improve implementation of evidence-based interventions in a complex adaptive system?

I trust my gut,
Our project is too complex for logic and evidence.
Frameworks for the Development of Multilevel Health Promotion Interventions

- MATCH (Multiple Approaches to Community Health) (Simons-Morton et al., 1995)
- PRECEDE-PROCEED (Green & Kreuter, 2005)
- THE BEHAVIOR CHANGE WHEEL (Michie et al., 2014)
- INTERVENTION MAPPING (Bartholomew-Eldredge et al., 2016)
What is Intervention Mapping?

- A **systematic approach** to program development, implementation & evaluation

- Provides a **framework** for decision-making at each step
  - Theory
  - Empirical evidence
  - Community input

- Uses an **ecological** approach
History of Intervention Mapping

The development of *Intervention Mapping* was stimulated by questions that include how and when to:

- Use theory?
- Apply empirical evidence?
- Collect new data?

...to create effective behavior or systems change interventions

- How to take an ecological approach to program planning?
- How to address changing the behavior of people in the environment?
- How to address the complexity of multi-causation of problems and multi-level intervention points?
Three ways to use IM for D&I:

1. Designing multi-level interventions in ways that enhance their potential for being adopted, implemented, and sustained

2. Designing implementation strategies to influence adoption, implementation and continuation

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

Intervention Mapping Steps

1. **Logic model of the problem**: Develop logic model of the problem based on needs assessment

2. **Program outcomes and objectives/logic model of change**: State program outcomes & objectives and develop a logic model of change

3. **Program design**: Develop the program plan, including themes, scope, sequence, change methods, practical applications

4. **Program production**: Produce the intervention, including program materials & messages

5. **Program implementation plan**: Plan program use (adoption, implementation & maintenance)

6. **Evaluation plan**: Develop an evaluation plan
Participation in Planning Multilevel Interventions

Knowledge generation comes from the hands of practitioners/implementers.

Equitable community/clinic participation:

- Ensures that program focus reflects community/clinic concerns
- Brings greater breadth of skills, knowledge, and expertise
- Improves external validity

Reference:
Step 1: Needs Assessment – Logic Model of the Problem

1. Establish and work with a planning group that includes program stakeholders.
2. Conduct a needs assessment to create a logic model of the problem.
3. Describe the context for the intervention, including the population, setting and community.
4. State program goals by linking the needs assessment to program and evaluation planning.

Final Products & Key Concepts:
- Description: Planning Group & Needs Assessment Approach
- Logic Model of the Problem
- Description: Context, population & community assets
- Statement of program goals (as per SMART)
**Logic Model of the Problem**

**Phase 4**
**Determinants**

**Personal Determinants:** What theory- and evidence-based factors are causally related to the behavior(s)?

**Phase 3**
**Behavior (At-risk group) and Environmental Factors**

**Behaviors:** What behaviors increase risk, incidence, prevalence, and burden?

**Environment:** What interpersonal, organizational, community, and societal factors influence health directly or through influence on the behavior of the at-risk group?

**Phase 2**
**Health Problems**

**Health Problems:** What is the priority health problem(s) in the population or subgroup?

**Phase 1**
**Quality of Life**

**Quality of Life:** What is the impact of the health problem(s) on quality of life?

* Modified PRECEDE Model, Green & Kreuter (2005)*
Needs Assessment

- Data from Puerto Rico Cancer Registry
  - incidence, prevalence, and mortality

- Screening rates
  - BRFSS

- Extensive review of empirical and theoretical literature to identify factors influencing CRCS in US Hispanic populations and PR

- Surveys with professionals of the FQHC

- Focus Groups with FQHC patients
  - N=51
Logic Model of the Problem

**Personal Determinants**
- Low levels of Knowledge about CRC and CRCS (delate and procedural)
- Low perceived risk of CRC
- Cancer misconceptions
- Negative attitudes towards screening (gear and shame)
- Low self-efficacy
- Low health literacy
- Perceived social norms/perceived barriers (time, cost, machismo, transportation...)

**Behavior Factors**
- Lack of or inconsistent CRCS

**Health Problem**
- Colorectal cancer

**Quality of Life**
- Shortened lifespan
- Emotional and sexual issues
- Loss of self-esteem
- Rejection
- Absenteeism
- Employee productivity losses
- Loss of work

**Outcome expectations**

**Environmental factors**

- **Interpersonal**
  - Lack of recommendation by providers

- **Organizational**
  - High turnover of providers in clinics 330 (FQHCs)
  - Decrease in the number of specialists
  - Increased ratio for primary care physicians
  - Difficulty in obtaining a referral to a gastroenterologist among GHP patients
  - Long wait times to make an appointment with the provider
  - Clinics with external laboratories
Step 2: Program Outcomes and Objectives - Logic Model of Change

1. State expected outcomes for behavior and environment
2. Specify performance objectives for behavioral and environmental outcomes
3. Select determinants for behavioral and environmental outcomes
4. Construct matrices of change objectives
5. Create a logic model of change

Final Products:
- Objectives/Expected Outcomes (priority group and environment)
- Change matrices
- Logic model of change
Active Play – Active Learning Project (Pueblo, CO & Austin, TX): “Behavioral & Environmental Outcomes”

Behavioral outcomes

- Students participate in 30 minutes of physical activity during school.

Environmental conditions:

- Schools improve play areas with playground markings (*built environment)
- Teachers lead their students in active learning 2 or more times during the week (social/organizational environment and interpersonal level)
Create Matrices of Change Objectives

<table>
<thead>
<tr>
<th>Performance Objective 1</th>
<th>Determinant 1</th>
<th>Change Objective</th>
<th>Determinant 2</th>
<th>Change Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Objective 2</td>
<td>Change Objective</td>
<td>Change Objective</td>
<td>Change Objective</td>
<td>Change Objective</td>
</tr>
</tbody>
</table>
### Example Matrix of Change Objectives

**Examples of Cells from a Simulated Matrix: Consistently and Correctly Using Condoms During Sexual Intercourse**

**Determinants**

<table>
<thead>
<tr>
<th>Performance Objectives</th>
<th>Knowledge</th>
<th>Perceived Susceptibility</th>
<th>Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Buy a condom</td>
<td>• Identify places</td>
<td>• State personal risk for HIV, STI, and pregnancy if have sex without a condom</td>
<td>• Feel confident about buying a condom</td>
</tr>
<tr>
<td></td>
<td>• List condom types</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Carry condoms</td>
<td>• List different ways to carry condoms</td>
<td>• Perceive that not carrying a condom increases risk</td>
<td>• Feel confident about carrying condoms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Use condom correctly</td>
<td>• List 10 steps for correct condom use</td>
<td>• State risk of HIV, STI, and pregnancy increases if condom is not used correctly</td>
<td>• Feel confident about using condoms correctly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step 3: Program Design

1. Generate program themes, components, and scope and sequence
2. Choose theory- and evidence-based change methods
3. Select or design practical applications to deliver change methods

Final Products: Initial Program Plan
- Themes (& artwork) developed
- Components defined & described
- Scope & Sequence table
- Methods & applications tables
**¡Activate Ya! PA Promotion and Tobacco Prevention in Uruguayan Youth** (PIs: Harrell & Springer, NIH RO1)

**Behavioral Outcome:**
Students engage in daily physical activity for 60 minutes

<table>
<thead>
<tr>
<th>Determinant/Change Obj.</th>
<th>Method &amp; Theory</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about PA benefits</td>
<td>Active learning <em>TTM</em></td>
<td>Peer-leader &amp; small group: Ventana activity</td>
</tr>
<tr>
<td>PA Self-Efficacy</td>
<td>Goal-setting <em>Goal Setting Theory</em></td>
<td>¡MUUVIT Ya! Passport</td>
</tr>
<tr>
<td>Behavioral Capability</td>
<td>Modeling &amp; Active Learning <em>SCT/TTM</em></td>
<td>Activity Breaks</td>
</tr>
</tbody>
</table>
## Choose Theory- and Evidence-based Change Methods

<table>
<thead>
<tr>
<th>Entertainment Education (Individual Level)</th>
<th>Behavioral Journalism (Individual Level)</th>
<th>Patient Activation (Interpersonal Level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entertainment Education employs formats based on entertainment to introduce educational messages.</td>
<td>In Behavioral Journalism, real-life role models who are identified as peers of the population of interest (with the same language and similar cultural and social norms) communicate the message.</td>
<td>This method is strongly associated with self-reported quality of care, a better doctor-patient communication, and increase CRCS rates.</td>
</tr>
</tbody>
</table>
Methods and Strategies

- Modeling, reinforcement, persuasion (Social Cognitive Theory)
- Tailoring (Trans-Theoretical Model), Anticipatory regret (Theory of Plan Behavior)
- Consciousness raising (Health Believe Model)
- Providing cues to action (Theories of Information Processing).
Step 4: Program Production

1. Refine program structure and organization
2. Prepare plans for program materials
3. Draft messages, materials, and protocols
4. Pretest program materials and protocols

Final Products:
• Table of materials, messages, goals
• Design documents
• Protocols for program implementation, calendar for producing materials, budget
Program Production

- TIMI-Tailored Interactive Multimedia Intervention

- Printed materials:
  - Newsletter
  - Fact sheets
  - Infographics
  - Action Plan

- Provider prompt

- Reminder/support calls
Step 5: Program Implementation Plan

1. Identify potential users (adopters, implementers, and maintainers)
2. State outcomes and performance objectives for program use
3. Construct matrices of change objective for program use
4. Design implementation interventions

Final Product: Program Implementation Plan
- Adoption, implementation and sustainability outcomes and change matrices (adoption, implementation, sustainability)
- Table of theoretical methods and practical applications
- Materials to support adoption and implementation
Step 6: Evaluation Plan

1. Write effect and process evaluation questions
2. Develop indicators and measures for assessment
3. Specify the evaluation design
4. Complete the evaluation plan

**Final Product: Evaluation Plan**
- Intervention Logic Model (health promoting logic model)
- Evaluation Plan ‘at-a-glance’ table: evaluation questions, indicators/variables, measures, evaluation design, data source/population
- Statistical analysis description & how findings will be presented (tables, graphics)
- Description of how evaluation plan will be implemented
Intervention Logic Model

Process Evaluation

Effect Evaluation

Resources

Implementation of Program Activities & Materials

Theoretical Methods & Practical Application

Theoretical Methods & Practical Application

At Risk Group

Change Objectives

Determinants

Performance Objectives

Behavioral Outcomes

Health

Quality-of-Life Improvements

Environmental Agent

Program Inputs

Change Objectives

Determinants

Performance Objectives

Environmental Outcomes

Outcomes

Logic of Change

Steps 4 & 5
Chapters 7 & 8

Step 3
Chapter 6

Step 2
Chapter 5

Step 1
Chapter 4
Planning Multilevel Implementation Strategies

Implementation Strategies -

Methods or techniques used to enhance the adoption, implementation, sustainment, and scale-up of a program or practice.

Proctor, Powell, & McMillen (2013); Powell, Garcia, & Fernandez (2018)
Updated Compilation Types of Implementation Strategies

- Use Evaluative and Iterative Strategies
- Provide Interactive Assistance
- Adapt and Tailor to Context
- Develop Stakeholder Interrelationships
- Train and Educate Stakeholders
- Support Clinicians
- Engage Consumers
- Utilize Financial Strategies
- Change Infrastructure

A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project

Byron J Powell*, Thomas J Waltz2, Matthew J Chinman3, Laura J Damschroder4, Jeffrey L Smith5, Monica M Matthieu6, Enola K Proctor8 and JoAnn E Kirchner4,9

A Two-Step Process to Developing Strategies:

1. Conduct an assessment of factors that influence implementation processes and outcomes (e.g. characteristics of the innovation, setting, preferences of involved stakeholders, barriers and facilitators)

2. Develop or select and tailor strategies to address these.
Bad News…It’s not that easy

“Everything should be made as simple as possible. But not simpler.”

Albert Einstein
Challenges in Selecting Implementation and Dissemination Strategies

- While some compilations exist, they may be less relevant for certain settings (clinical vs public health or community settings)
- Strategies included in compilations are broad and may represent qualitatively different things (delivery channel, assessments, processes)
- Underutilization of conceptual models and theories in the literature,
- Variations related to the EBPs and the contexts in which they are implemented

Waltz, et al. 2019; Powell et al. 2017
Matching Strategies to Barriers

Survey of Implementation Experts (N-169)

Audit and provide feedback

Select and rank up to 7 strategies that best address barriers related to Reflecting & Evaluating:

- There is little or no quantitative and qualitative feedback about the progress and quality of implementation nor regular personal and team debriefing about progress and experience.
Number of ERIC strategies endorsed by 1+ respondent

Average n=47 ERIC strategies / CFIR construct
Bad news:
At least one respondent endorsed 64% (n=1832)

Good news:
Possible combinations reduced by 36%
So, it’s complicated.

“But I have my list of ERIC strategies......”

When you develop or select a strategy (e.g. develop educational material, use mass media, train the trainer strategies, provide TA) you still have to develop the content to include in the strategy.

AND it has to contain the mechanism of change (change methods) to be effective.
Need to Enhance Methods for Designing and Tailoring

Methods to Improve the Selection and Tailoring of Implementation Strategies

Byron J. Powell, PhD
Rinad S. Beidas, PhD
Cara C. Lewis, PhD
Gregory A. Aarons, PhD
J. Curtis McMillen, PhD
Enola K. Proctor, PhD
David S. Mandell, ScD

- Group Model Building
- Conjoint Analysis
- Concept Mapping
- Intervention Mapping

Baker et al. (2015); Bosch et al. (2007); Colquhoun et al. (2017); Grol et al. (2013); Powell et al. (2017)
Three ways to use IM for D&I

1. Designing multi-level interventions in ways that enhance its potential for being adopted, implemented, and sustained

2. Designing implementation strategies to influence adoption, implementation and continuation (Implementation Mapping)

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

What is Implementation Mapping?


Implementation Science + Intervention Mapping = Implementation Mapping
Implementation Mapping
Using Intervention Mapping to Design or Choose Implementation Strategies

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?

Implementation Mapping Tasks

**Task 1.** Conduct a needs and assets assessment and identify adopters and implementers

**Task 2.** Identify adoption and implementation outcomes, performance objectives, and determinants; create matrices of change.

**Task 3.** Choose theoretical methods; Selector create implementation strategies.

**Task 4.** Produce implementation protocols and materials.

**Task 5.** Evaluate Implementation Outcomes 5
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?
Example Performance Objectives for Implementation

Clinic decision makers will:
- Communicate with staff about practice change/role changes for patients due for mammography
- Designate time for EBI training

Program champion will:
- Arrange for any change to EHR or reporting for PMP
- Arrange for patient referrals for mammograms

Patient navigator will:
- Conduct telephone barrier counseling
- Use active-listening protocol when talking with patient
Identify implementation behaviors, determinants, methods and strategies to address determinants

**Performance Objectives:** What are the subcomponents of the Implementation behavior?

**Determinants:** Outcome expectations, Self-efficacy, Attitudes *(Can come from individual theories or integrated frameworks such as TDF)*

**Methods:** Persuasion, Active learning, Social support, Dissonance reduction, Modeling, Skill building *(Guidance from individual theories or integrated frameworks such as TDF)*

**Strategies (how these methods are operationalized):** Workshops, Discussion, Problem analysis, Role playing, Team meeting, Problem solving, Guided practice, Newsletters, Model stories, Resources, Information
# Peace of Mind Program Implementation Plan

<table>
<thead>
<tr>
<th>Stage</th>
<th>Agent</th>
<th>Determinants/ Change Objectives</th>
<th>Theoretical Change Methods</th>
<th>Practical Applications/ Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation</td>
<td>Program Champion Navigator</td>
<td>Awareness/ Perceptions&lt;br&gt;Outcome Expectations&lt;br&gt;Skills and Self-efficacy&lt;br&gt;Feedback and Reinforcement</td>
<td>• Information&lt;br&gt;• Persuasion&lt;br&gt;• Skill building and guided practice&lt;br&gt;• Modeling&lt;br&gt;• Monitoring and feedback&lt;br&gt;• Technical assistance / capacity building&lt;br&gt;• Facilitation&lt;br&gt;• Vicarious reinforcement</td>
<td>• Face to face training held over two four hour sessions. BHC navigators model EBI behavior and provide ongoing implementation support on-site&lt;br&gt;• PMP research team available via email, phone and training booster sessions as needed&lt;br&gt;• Paperwork processes to provide funds for patients needing financial assistance from PMP</td>
</tr>
</tbody>
</table>

QuitSMART Utah: an implementation study protocol for a cluster-randomized, multi-level Sequential Multiple Assignment Randomized Trial to increase Reach and Impact of tobacco cessation treatment in Community Health Centers

Tobacco-Related Inequities Over Time

- Relative risk of smoking among ≤ HS grad vs. college grad increased from ~1.2 in 1965 to ~3.5 in 2015
- Difference between ≤ HS grad vs. college grad increased from ~7 percentage points in 1965 to ~17 percentage points in 2015

Drope et al., CA Cancer J Clin, 2018

Slide courtesy of David Wetter, Director, Center for Health Outcomes and Population Equity (HOPE), University of Utah
Goal: Implement and evaluate practical, scalable, evidence based tobacco cessation strategies among populations most impacted by tobacco use

Partnerships
- Utah FQHCs (11 systems; 33 clinics)
- Utah Tobacco Quit Line
- Utah Department of Health
  - Reallocated their tobacco control resources to provide prescription meds
- Association for Utah Community Health (AUCH)
  - AUCH tobacco control staff member works 80% time on QuitSMART Utah at Center for HOPE
<table>
<thead>
<tr>
<th>Social Cognitive Theory (SCT)</th>
<th>Implementation Mapping</th>
<th>Implementation strategies</th>
<th>RE-AIM Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Determinants</strong></td>
<td><strong>IM provides a roadmap for developing and adapting implementation strategies</strong></td>
<td><strong>Clinic</strong></td>
<td><strong>Reach</strong></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Conduct needs assessment and identify program implementers, barriers and facilitators of implementation, implementation outcomes</td>
<td>Clinic practice team training to increase provider and staff motivation, self-efficacy, and behavioral capabilities to implement AAC.</td>
<td></td>
</tr>
<tr>
<td>Behavioral Capabilities</td>
<td>Break outcomes into smaller performance objectives</td>
<td><strong>AAC EHR</strong> point of care alert to influence staff self-efficacy, outcome expectations, and behavioral capabilities</td>
<td></td>
</tr>
<tr>
<td>Motivation</td>
<td>Develop matrices of change objectives considering implementation actions and determinants</td>
<td>• AAC – Out</td>
<td></td>
</tr>
<tr>
<td>Source of Influence</td>
<td>Choose methods (informed by SCT)</td>
<td>• AAC – In</td>
<td></td>
</tr>
<tr>
<td>Mastery</td>
<td>Translate change objectives to select and adapt implementation strategies</td>
<td><strong>Patient</strong></td>
<td><strong>Impact</strong></td>
</tr>
<tr>
<td>Persuasion</td>
<td></td>
<td>• Text messaging to increase patients’ self-efficacy, outcome expectations, motivation, and behavioral capabilities</td>
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<table>
<thead>
<tr>
<th>Consolidated Framework for Implementation Research (CFIR)</th>
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</thead>
<tbody>
<tr>
<td>Offers a comprehensive implementation taxonomy and framework with five major domains</td>
<td><strong>Intervention characteristics</strong> – evidence strength, adaptability, trialability, complexity, relative advantage, design quality</td>
<td><strong>Outer setting</strong> – patient needs &amp; resources, peer pressure, cosmopolitanism, external policy/incentive</td>
<td><strong>Reach</strong></td>
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<td></td>
<td><strong>Inner Setting</strong> – implementation climate, network &amp; communications, structural characteristics, culture</td>
<td><strong>Characteristics of individuals involved</strong> – knowledge, beliefs, self-efficacy, stage of change</td>
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<td><strong>Process of implementation</strong> – planning, engaging, executing, evaluating</td>
<td><strong>Process of implementation</strong></td>
<td><strong>Impact</strong></td>
</tr>
</tbody>
</table>

Underlined and italicized = SCT determinants/sources of influence and CFIR domains/constructs considered and used in the project
IM = implementation mapping; AAC = Ask – Advise – Connect; AAC – Out = Ask – Advise – Connect Opt – Out; AAC – In = Ask – Advise – Connect Opt – In; MAPS = Motivation And Problem Solving
SMART: Sequential Multiple Assignment Randomized Trial

Clinic-Level Randomization: Phase 1
- AAC Out = Ask, Advise, Connect – Opt Out
- AAC In = Ask, Advise, Connect – Opt In

Patient-Level Randomization: Phase 2
TM = Text Messaging; CO = Connect Only

Patient-Level Randomization: Phase 3
- TM+MAPS = Text Messaging Continued + Navigation
- TM-Cont = Text Messaging Continued

Quitline treatment enrollment by 2 weeks?
Quitline treatment enrollment by 6 months?
Quitline treatment enrollment and abstinence at 12 months?
Is it a MLI or a ML Implementation Strategy?

Types of Evidence-Based Interventions (EBIs) that can be implemented and disseminated:

- Clinical Practice Guidelines
- Clinical Innovations (e.g. new screening technology)
- Cancer Prevention Educational Programs (Packaged programs)
- Policies
- Strategies (USPSTF Community Guide Recommendation; e.g. mass media, one on one, provider reminders)

Back to Complexity…
Intervening in Complex Adaptive Systems

• Apply the tools of complex systems analyses

• Engage key stakeholders at multiple levels to better understand and intervene.

• Use systematic processes for developing D&I strategies using theory, empirical evidence, and advances in implementation science.
Addressing Complexity

To address complexity, intervention (or implementation strategy) planners must:

1. Better understand the complexity of the context and issues all players are facing

2. Systematically design strategies that consider complexity and make reasonable assumptions about the “shock to the system”

3. Learn to balance strategic designs with respect for self-organization principles (adaptation)

Reference:
Summary

- There is much to learn about how we can develop effective multilevel interventions to increase health equity.
- Systematic planning of intervention components at multiple levels is key.
- It is critical to consider the dynamic and complex environment as we move from discovery to delivery and use the advances in systems thinking and other tools to do so.
- Implementation science can help bridge the gap by:
  - building an actionable and pragmatic knowledge base to help understand determinants of implementation and dissemination;
  - and developing strategies that function at multiple levels to accelerate and improve scale up and spread of effective cancer control research innovations.
THANK YOU. THANK YOU. THANK YOU.
from the bottom of my heart.
how can I ever thank you
thank you
gee thanks. you are the best. thanks.
THANKS 1,000,000
thanks a bunch. ah Thanks
thank you

THANK YOU ever so much