Advancing Cancer Care Delivery Through Implementation Science

BE BOUNDLESS

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IMPLEMENTATION SCIENCE

The scientific study of methods to promote the adoption and integration of research findings and evidence-based interventions into healthcare practice and policy.
- National Institute of Health
REQUIREMENTS FOR SUCCESS

Effective Interventions  Effective Implementation Methods  Enabling Contexts  Socially Significant Outcomes

WHAT  HOW  WHO + WHERE

Implementation Science

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FOUR KEY IMPLEMENTATION SCIENCE QUESTIONS

> What are the most effective techniques to improve the distribution and receipt of evidence?
> What are the most effective techniques to incorporate new discoveries and evidence-based practices into clinical care delivery?
> How do contextual factors influence implementation success or failure (and how can these contextual factors be modified to increase chances of success)?
> What are the most effective techniques to de-implement practices that are no longer effective or were never effective in the first place?
## DISTINGUISHING IMPLEMENTATION SCIENCE

<table>
<thead>
<tr>
<th>Study Feature</th>
<th>Clinical research</th>
<th>Implementation research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aim: Evaluate a/an …</td>
<td>clinical intervention</td>
<td>implementation strategy</td>
</tr>
<tr>
<td>Typical intervention</td>
<td>drug, procedure, therapy</td>
<td>clinician, organizational practice change</td>
</tr>
<tr>
<td>Typical outcomes</td>
<td>symptoms, health outcomes, patient behavior</td>
<td>adoption, adherence, fidelity</td>
</tr>
<tr>
<td>Typical unit of analysis, randomization</td>
<td>patient</td>
<td>clinician, team, facility</td>
</tr>
</tbody>
</table>

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SOME TERMINOLOGY

Implementation strategies: Actions to enhance adoption, implementation, and sustainability of EBIs.

EBIs: programs, practices, principles, procedures, products, pills, and policies that improve health behaviors, health outcomes, or health-related environments.
EXAMPLES OF STRATEGIES

- Contracting
- Public reporting
- Payment changes
- Decentralization
- Quality improvement
- Service changes
- Staffing changes
- Role revisions
- Education
- Reminders
- Audit and feedback
- Decision support
- Community mobilization
- Norm changes (stigma)
- Demand creation
- Service coordination
- Shared decision making
- Risk communication
- Partner notification
- Social support

UNIVERSITY of WASHINGTON

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IMPLEMENTATION OUTCOMES

Adapted from Proctor et al., 2011

**Implementation Outcomes**
- Acceptability
- Adoption
- Appropriateness
- Costs
- Feasibility
- Fidelity
- Penetration
- Sustainability

**Service Outcomes**
- Efficiency
- Safety
- Effectiveness
- Equity
- Patient-Centeredness
- Timeliness

**Patient Outcomes**
- Morbidity
- Mortality
- Health Status
- Quality of Life

*IOF Standards of Care

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HYBRID DESIGNS

CLINICAL EFFECTIVENESS RESEARCH

HYBRID TYPE

I
TEST CLINICAL INTERVENTION
Observe/gather information on implementation

II
TEST CLINICAL INTERVENTION & TEST IMPLEMENTATION INTERVENTION

III
TEST IMPLEMENTATION INTERVENTION
Observe/gather information on clinical intervention and outcomes

IMPLEMENTATION RESEARCH

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IMPLEMENTATION SCIENCE EXAMPLES

> Implementing decision aids and shared decision making to guide low-risk prostate cancer treatment
> Implementing the CMMI Oncology Care Model
> Implementing radiology communication-based tools to promote guideline-concordant imaging practices in breast cancer surveillance
> Implementing a pharmacist-led strategy to promote de-prescribing of potentially inappropriate medications
EXAMPLE: PRO-SUPPORT

**Objective:** Improve symptom control and reduce disparities in symptom burden during treatment for cancer through the deployment of:

> An integrated symptom monitoring,
> Self-care education
> Evidence-informed clinical decision support (CDS) system for symptom management
EXAMPLE: PRO-SUPPORT

_Aim 1:_ compare clinician adherence to symptom management guidelines for lung, GI, GU, breast, and gynecological cancers

_Aim 2:_ examine multilevel factors associated with adoption and implementation of integrated symptom monitoring, self-care education, and CDS for symptom management

_Aim 3:_ determine differences in symptom severity, pain treatment, supportive care referrals, health-related quality of life (between intervention and control group)
# IMPLEMENTATION OUTCOMES

<table>
<thead>
<tr>
<th>Construct</th>
<th>Measures</th>
</tr>
</thead>
</table>
| **Adoption**| % providers accessing symptom assessment reports  
% patients completing symptom assessment reports |
| **Fidelity**| % symptoms assessed  
% symptoms assessed prior to clinical encounter  
% symptom assessment reports delivered JIT to clinicians |
| **Acceptability** | Acceptability of Interventions Measure  
Communication Subscale, Primary Care Assessment Survey |
| **Sustainability** | Staffing, technical, and organizational resources required for sustained use |
| **Scalability** | Differential reach, effectiveness, and adoption across practices, providers, and patients  
Workforce, technical, and organizational resources required for implementation Intervention delivery (acceptability, fidelity)  
Contextual factors |
## MULTI-LEVEL CONSTRUCTS

<table>
<thead>
<tr>
<th>Level</th>
<th>Construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Evidence Strength &amp; Quality</td>
</tr>
<tr>
<td></td>
<td>Relative advantage</td>
</tr>
<tr>
<td></td>
<td>Complexity</td>
</tr>
<tr>
<td>Provider</td>
<td>Social/professional role</td>
</tr>
<tr>
<td></td>
<td>Burnout</td>
</tr>
<tr>
<td>Team</td>
<td>Team psychological safety</td>
</tr>
<tr>
<td>Practice</td>
<td>Organizational readiness</td>
</tr>
<tr>
<td></td>
<td>Organizational priority</td>
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<tr>
<td></td>
<td>Practice Disruption</td>
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<tr>
<td></td>
<td>Practice Demographics</td>
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WRAP-UP: KEY IMPLEMENTATION SCIENCE QUESTIONS

1. What are the most effective techniques to improve the distribution and receipt of evidence?
2. What are the most effective techniques to incorporate new discoveries and evidence-based practices into clinical care delivery?
3. How do contextual factors influence implementation success or failure (and how can these contextual factors be modified to increase chances of success)?
4. What are the most effective techniques to de-implement practices that are no longer effective or were never effective in the first place?

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