Implementation Science Centers for Cancer Control (IS-C³)

David Chambers, DPhil

Cancer Moonshot Implementation Teams:

• Prevention and Early Detection: Implementation of Evidence-Based Approaches for Prevention and Screening
• Prevention and Early Detection: High-Risk Cancers
• Symptom Management
**Issue:** Suboptimal uptake of evidence-based cancer prevention and screening programs, particularly among underserved populations.

- Can we better implement what has already been developed and tested?
- Effective scale-up of CRC screening and follow-up, HPV vaccination, and tobacco cessation interventions could result in:
  - 389,900 fewer new cancer cases annually
  - 318,500 fewer cancer deaths annually

A robust knowledge base around implementation strategies would make significant progress toward this goal.
We have hundreds of evidence-based programs to implement

https://rtips.cancer.gov/rtips/index.do
But Need Implementation Science to Drive Population Benefit…

What?
- Cancer Control Interventions

How?
- Implementation Strategies

Implementation Outcomes
- Feasibility
- Fidelity
- Penetration
- Acceptability
- Sustainability
- Uptake
- Costs

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

Health Outcomes
- Satisfaction
- Function
- Health status/symptoms

*IOM Standards of Care

Implementation Research Methods

Proctor et al 2009 Admin. & Pol. in Mental Health & Mental Health Services Research
Building from the Blue Ribbon Panel Report: Implementation of Evidence-based Prevention and Screening Approaches

What are we doing in response?

- ACCSIS—Implementation Strategies to improve CRC Screening, Follow-up, Referral to Care
- IMPACT—Programs to improve symptom management across Cancer Tx
- Hereditary Cancers RFA—Programs to Improve Cascade Screening and Referral to Tx
- Tobacco Cessation Supplements to Cancer Centers
- HPV Cancer Center Supplements to understand local factors affecting Vax Uptake
Current Needs for Scaling Up Implementation Science

- Leveraging existing clinical and community sites where cancer control interventions are delivered to form an “implementation laboratory”
- Development and execution of natural experiments and rapid-cycle testing of innovative approaches to implementing evidence-based interventions
- Development and testing of valid, reliable and pragmatic measures of implementation constructs not currently available
- Generation of pilot studies in emergent areas of implementation science under-represented in the current NCI portfolio
  - E.g. implementation of precision medicine, de-implementation, local adaptation of interventions, mechanistic studies of implementation strategies
- Nationwide support for implementation scientists in cancer control, annual meetings, training and mentoring support, technical assistance on proposals, collaborative workspace for innovative study concepts
Implementation Science Centers for Cancer Control (IS-C$^3$)

Goal: Scaling Up IS Efforts Across Moonshot (and then some)

1. Administrative Core

2. IS Laboratories: Established Collaborations with Health and Community Systems (e.g. Oncology, Primary Care, Community Settings)

3. Measurement and Methods Core

4. Set of Innovative Research Pilots

5. Network Core
   - Shared capacity to run program-wide IS Consortium (host annual meetings/dissemination of findings/training)
An Example of an IS-C^3 on Intervention Adaptation

**Administrative Core (Leadership, Structure, Advisors)**

**Methods & Measurement Core**
- Multi-level measurement of ITV adaptation
- Framework for real-time data capture
- Aggregating existing data to identify local adaptations
- Developing new measures of context affecting ITV adaptation

**Innovative Pilot Research Projects**
- Study of local A&F efforts to tailor screening to underserved pops
- Study use of technology to adapt follow-up strategies to specific barriers
- Use of NLP to develop necessary adaptations for missed screening

**“Implementation Laboratory” Core**
- 80 small and medium primary care practices across 3 states
- Common EHRs
- Leadership buy-in
- Experience with conducting HC-practice research
- Articulated needs around adaptations to existing ITVs
- Natural experiments

**Network Core**
- Dissemination of findings
- Connecting with IS Moonshot grantees
- Host annual IS Consortium
- Share tools, data across field
- Promote training
Prospective trials of implementation strategies to improve CRC screening & f/u

Prospective trials of programs to test and improve symptom mgmt

Approaches to improve engagement in clinical trials and other research studies

Prospective trials of approaches to improve cascade screening for genetic risk markers

Measurement Development

(Rapid) Pilot Implementation Studies

Approaches to improve engagement in clinical trials and other research studies

ACCSIS

Field-Wide Consortium

NCORP

IMPACT

Hereditary Cancers

D&I PARs

HPV CC Supps

Implementation Laboratories

IS-C³

Patient Engagement

Smoking Cessation CC Supps

Measurement Development
Implementation Science Centers for Cancer Control RFA Concept (via 3 Moonshot Teams)

- 4-5 Research Centers
  - Implementation “Laboratories”
  - Methods Development, Network Cores
  - Pilot Implementation Studies
  - Common Data Repositories
  - Building a Field-wide Consortium

- 3 Advanced Centers ($2M per yr); 2 Developing ($1M per yr) [P50/P20]
  - Advanced Ctrs in established areas (Cancer Prevention, Screening, Symptom Management)
  - Developing Ctrs in newer areas (precision medicine, de-implementation)

- FY19 Budget: $8M TC ($40M TC over 5 years)
Explicit expectations of administrative/leadership functions
- Description of administrative core responsibilities

Central importance of “data ecosystem”
- Common Data Elements required, new measures developed for broader field, recognizing diverse needs

Individual center activities vs. “consortium” activities
- E.g. opportunities for aspiring IS investigators within centers vs. participation in consortium to build field capacity

Clarification of number and types of pilots
- R03/R21 scale; 4-8 for advanced centers, 2-4 for developing centers

Distinction b/w developing vs. advanced centers
- Number of pilots; scale of the implementation lab; network size; scientific focus

NCI role of coordination across centers
- NCI’s IS team can foster trans-center coordination (data sharing, dissemination, meeting support)
CMIT co-chairs Paul Pinsky, Kathy Helzlsouer, Asad Umar, Paul Jacobsen, Ann O’Mara and team members

DCCPS Colleagues: Bob Croyle, Wynne Norton, April Oh, Stacey Vandor, Cindy Vinson, and Implementation Science Team