

Data-driven Implementation Mapping for the selection of implementation strategies: case example of bladder cancer surveillance



Florian R. Schroeck, MD, MS, A. Aziz Ould Ismail, MD, MS, Lisa Zubkoff, PhD

White River Junction VAMC Birmingham VA HCS and GRECC



Study Team



"ImpRaBS" team:

David Haggstrom, MD (Indy)

Steven Sanchez, BS (Indy)

Perla Flores, BS (Indy)

VA sites:

Muta Issa, MD, MBA (Atlanta)

Minhaj Siddiqui, MD (Baltimore)

Kevin Rice, MD (Indy)

Jeffrey Tosoian, MD, MPH (Nashville)

VA Salt Lake City, UT:

Kristine Lynch, PhD

Elise Gatsby, MS

Susan Zickmund, PhD

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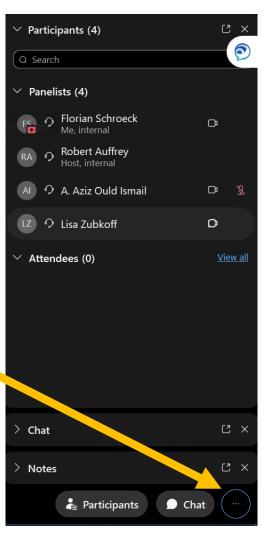
Agenda



- 1. Overview of the clinical problem
- 2. Framework and potential strategies (TICD & ERIC)
- 3. Overview of Implementation Mapping
- 4. Walk through the mapping steps with examples



Q&A

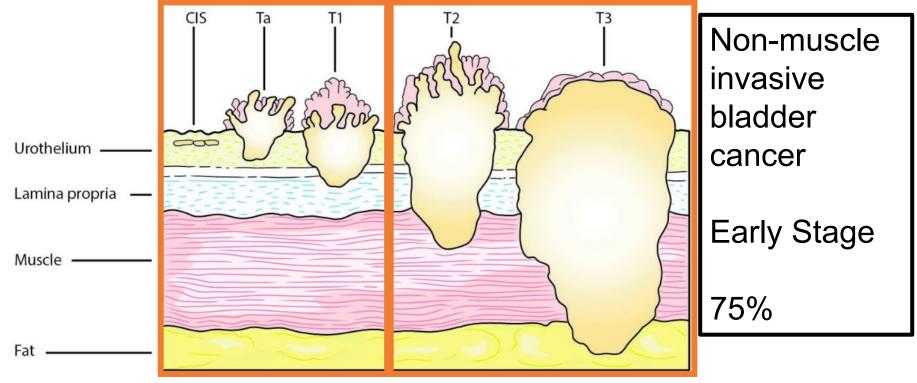






Bladder Cancer in VA



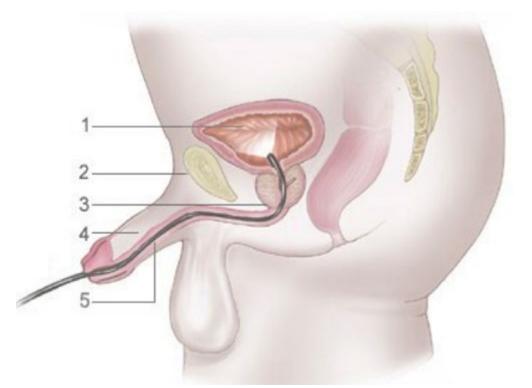


Source: Bladder Cancer Advocacy Network: https://bcan.org/facing-bladder-cancer/bladder-cancer-types-stages-grades/



Risk-Aligned Surveillance for Bladder Cancer





Low-risk

 \rightarrow ~1 / year

High-risk
→ 3-4 / year



Risk-Aligned Surveillance for Bladder Cancer



Year	Panel
2005	First International Consultation on Bladder Tumors
2006	European Association of Urology
2011	International Bladder Cancer Group

Low-risk

 \rightarrow ~1 / year

High-risk

 \rightarrow 3-4 / year

National Institute for Health and Care Excellence









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Tailored Implementation for Chronic Diseases (TICD)



FOR HEALTH POLICY & CLINICAL PRACTICE
GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

Incentives and **Professional Capacity for** Guideline Individual **Patient** Social, Political, Resources Interactions **Organizational** Accessibility **Health Care** Motivation and Legal Factors Availability of Change Effort **Provider** Behavior Contracts Team processes Monitoring and Compatibility Knowledge Malpractice liability necessary feeback Nature of Regulations, rules, Clarity resources Relative strength of behavior and policies Continuing education supporters and Intention and motivation system opponents Information Capable leadership system

Risk-aligned surveillance



ERIC



FOR HEALTH POLICY & CLINICAL PRACTICE

Powell et al. Implementation Science (2015) DOI 10.1186/s13012-015-0209-1

Table 3 ERIC discrete implementation strategy compilation (n = 73)

Assess for readiness and identify barriers and facilitators

Strategy	Definitions
Access new funding	Access new or existing money to facilitate the implementation
Alter incentive/allowance structures	Work to incentivize the adoption and implementation of the clinical innovation
Alter patient/consumer fees	Create fee structures where patients/consumers pay less for preferred treatments (the clinical innovation) and more for less-preferred treatments

RESEARCH

A refined comp Audit and provide feedback results from the Build a coalition **Implementing**

Monica M Matthieu^{6,7}, Enola K Pro

Collect and summarize clinical performance data over a specified time period and give it to clinicians and administrators to monitor, evaluate, and modify provider behavior

used in the implementation effort

Assess various aspects of an organization to determine its degree of readiness to implement, barriers that may impede implementation, and strengths that can be

clinicians made something work in their setting and then share it with other sites

Recruit and cultivate relationships with partners in the implementation effort Capture and share local knowledge Capture local knowledge from implementation sites on how implementers and

Centralize technical assistance Develop and use a centralized system to deliver technical assistance focused on implementation issues

Byron J Powell^{1*}, Thomas J Waltz², Change accreditation or membership requirements Strive to alter accreditation standards so that they require or encourage use of the clinical innovation. Work to alter membership organization requirements so that those who want to affiliate with the organization are encouraged or required to use the clinical innovation

Change liability laws Participate in liability reform efforts that make clinicians more willing to deliver the clinical innovation

Change physical structure and equipment Evaluate current configurations and adapt, as needed, the physical structure and/or equipment (e.g., changing the layout of a room, adding equipment) to best accommodate the targeted innovation



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Overview of Implementation Mapping



Objective: Use a systematic process to select implementation strategies most likely to work.



METHODS

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Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies

Maria E. Fernandez^{1*}, Gill A. ten Hoor², Sanne van Lieshout³, Serena A. Rodriguez^{1,4}, Rinad S. Beidas^{5,6}, Guy Parcel¹, Robert A. C. Ruiter², Christine M. Markham¹ and Gerjo Kok²



Overview of Implementation Mapping



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1. Needs assessment

2. Identify observable actions that need to be performed (performance objectives) & Identify what needs to be changed to accomplish "performance objectives

3. Select implementation strategies

4. Produce implementation materials

5. Evaluate implementation outcomes



Agenda

Implementation Science



Schroeck et al. Implementation Science https://doi.org/10.1186/s13012-022-01231-6

Open Access

Data-driven approach to implementation METHODOLOGY

mapping for the selection of implementation strategies: a case example for risk-aligned bladder cancer surveillance Florian R. Schroeck^{1,2,3,4*}, A. Aziz Ould Ismail¹, David A. Haggstrom^{5,6,7}, Steven L. Sanchez⁵,

DeRon R. Walker⁵ and Lisa Zubkoff^{8,9}



Step 1: Needs Assessment



Imp. Mapping Process

Example

Facilitators and Barriers

Interviews with clinicians: "Reminders could be very helpful"



VA Step 2a: Performance Objectives



Imp. Mapping Process

Necessary *observable* actions to provide riskaligned surveillance

Example

Clinician conducts risk assessment and selects appropriate frequency of surveillance



VA Step 2a: Performance Objectives Dartmouth



TICD Domain	Determinant	Performance Objective	How we got to performance objective
Capacity for Organizational Change	Capable Leadership	Leader voices support for appropriate frequency of cystos	A quarter felt that there is a lack of leadership support



VA Step 2a: Performance Objectives



TICD Domain	Determinant	Performance Objective	How we got to performance objective				
Capacity for Organizational Change	Capable Leadership	Leader voices support for appropriate frequency of cystos	A quarter felt that there is a lack of leadership support				
Healthcare Provider	Nature of behavior	Clinician conducts risk assessment and then selects appropriate frequency of cystos	Standard process described in many interviews				





Imp. Mapping Process

Changes needed to accomplish each performance objective

Example

Clinician electronically documents risk assessment and the appropriate frequency of surveillance





TICD Domain	Determinant	Performance Objective
Health- care provider	Nature of behavior	Clinician conducts risk assessment and then selects appropriate frequency of cystos





FOR HEALTH POLICY & CLINICAL PRACTICE
GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

TICD Domain	Determinant	Performance Objective	Incentives and Resources – Information System	Guideline – Source of recommendation	Patient - Behavior
Health- care provider	Nature of behavior	Clinician conducts risk assessment and then selects appropriate frequency of cystos	electronically documents risk-ass the Lagranger and the appropriate frequency of future cystos	o Determ	

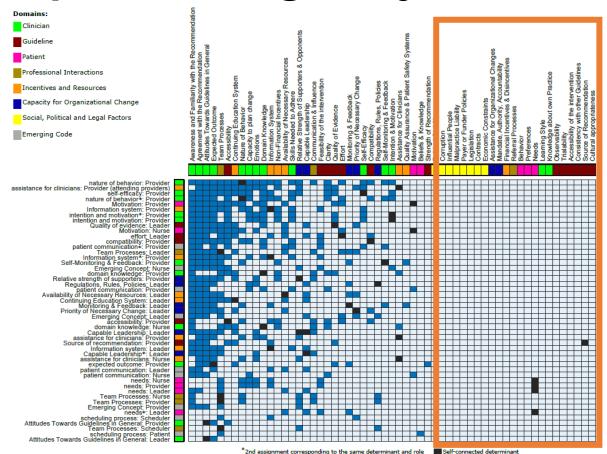




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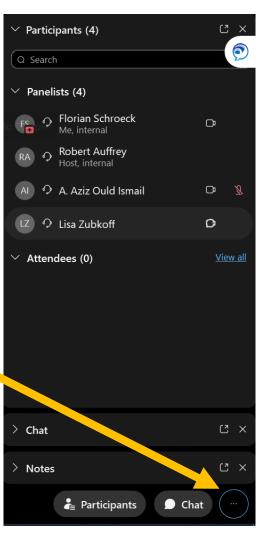




FOR HEALTH POLICY & CLINICAL PRACTICE



Q&A







Overview of Implementation Mapping



- 1. Needs assessment
- 2. Identify observable actions that need to be performed (performance objectives) & Identify what needs to be changed to accomplish the performance objectives
- 3. Select implementation strategies
- 4. Produce implementation materials
- 5. Evaluate implementation outcomes



VA Step 3a: Implementation Strategy **Matrix**



GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

Imp. Mapping Process

Example

Linking potential implementation strategies to unique change objectives

Develop a reminder in the EHR to integrate the appropriate frequency of surveillance cystoscopy procedures



VA Step 3a: Implementation Strategy Dartmouth Matrix – Raw Data



FOR HEALTH POLICY & CLINICAL PRACTICE

TICD Domain	Determinant	Change Objective
Incentives and Resources	Information System	electronically documents risk- assessment of the bladder cancer and the appropriate frequency of future cystos



VA Step 3a: Implementation Strategy Dartmouth **Matrix – Raw Data**



FOR HEALTH POLICY & CLINICAL PRACTICE GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

TICD Domain	Determinant	Change Objective	Conduct Educational Meetings	Involve patients	
Incentives and Resources	Information System	electronically documents risk- assessment of the bladder cancer and the appropriate frequency of future cystos	add templates in EHR to document the risk assessment and the appropriate frequency of future cysto.	o Stra	o stegies

VA Step 3a: Implementation Strategy Dartmouth **Matrix – Raw Data**



FOR HEALTH POLICY & CLINICAL PRACTICE

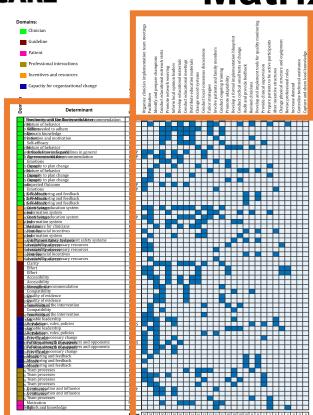
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HEALTH CARE

VA Step 3a: Implementation Strategy Dartmouth **Matrix – Visualization**



FOR HEALTH POLICY & CLINICAL PRACTICE GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

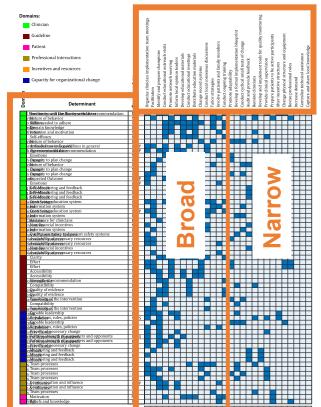


HEALTH

VA Step 3a: Implementation Strategy Dartmouth **Matrix – Visualization**



FOR HEALTH POLICY & CLINICAL PRACTICE GEISEL SCHOOL OF MEDICINE AT DARTMOUTH



Change Record System **Conduct Educational Meetings Involve Patients**

Assistance for clinicians Non-financial incentives Information system





Imp. Mapping Process

Example

Based on:

Scope
Time Commitment
Impact

Change record system with

EHR template:

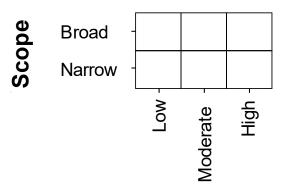
Scope: broad

Time Commitment: moderate

Impact: high



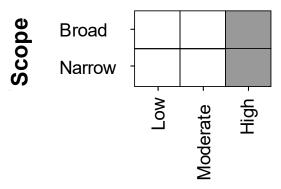




Time commitment

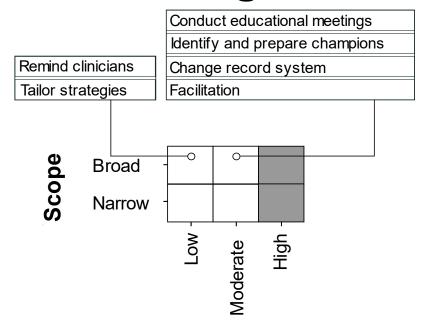






Time commitment



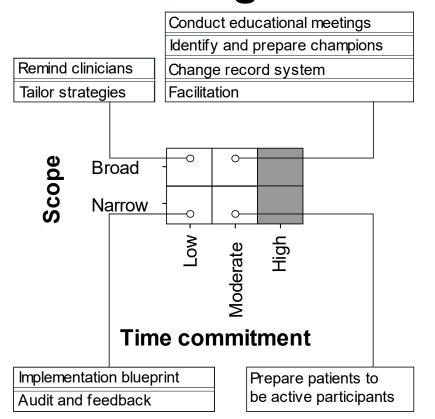


Time commitment











Overview of Implementation Mapping



- 1. Needs assessment
- 2. Identify observable actions that need to be performed (performance objectives) & Identify what needs to be changed to accomplish the performance objectives
- 3. Select implementation strategies
- 4. Produce implementation materials
- 5. Evaluate implementation outcomes



Step 4a: Specification



Imp. Mapping Process

- 1. Actor
- 2. Action
- 3. Action target
- 4. Temporality
- 5. Dose
- 6. Outcome
- 7. Justification

Example

- 1. Champion
- 2. Tech team to implement template
- 3. Providers
- 4. Ongoing
- 5. Every encounter
- 6. Adoption of risk-aligned surveillance
- 7. Nudging

Proctor EK, Powell BJ and McMillen JC: Implementation strategies: recommendations for specifying and reporting. Implement. Sci. 2013; 8: 1.



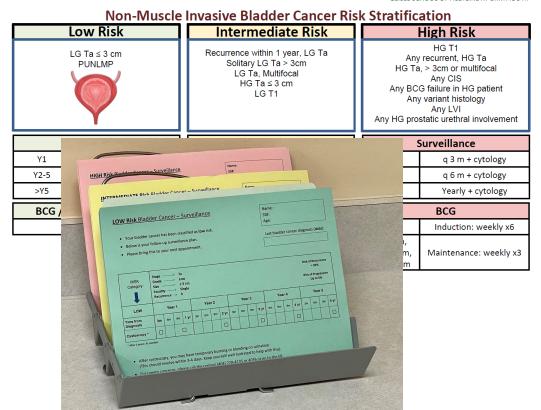
VA Step 4b: Implementation Materials Dartmouth



FOR HEALTH POLICY & CLINICAL PRACTICE GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

Imp. Mapping Process

Develop Implementation Materials





Overview of Implementation Mapping



- 1. Needs assessment
- 2. Identify observable actions that need to be performed (performance objectives) & Identify what needs to be changed to accomplish the performance objectives
- 3. Select implementation strategies
- 4. Produce implementation materials
- 5. Evaluate implementation outcomes



VA Step 5: Implementation Outcomes Dartmouth



GEISEL SCHOOL OF MEDICINE AT DARTMOUTH

Imp. Mapping Process

Example

Evaluation of Implementation Outcomes Acceptability Appropriateness Feasibility

Interviews

Fidelity Penetration Sustainability

Tracking

Adoption

Chart Review



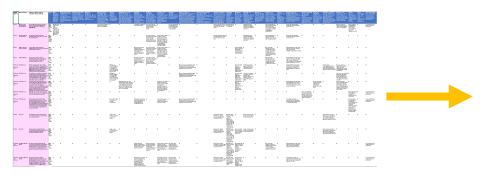
Contribution to the Field

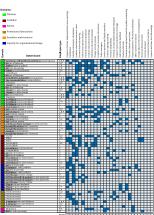


- Prior work: employed advisory panels
- Considered every TICD determinant
 & every ERIC strategy

Availability of necessary resources Continuing Methods (Carify System Information and feaback Relative strength of system Capable leadership Risk-aligned surveillance

Data visualization







Discussion Points



- Labor intensive
- Did not compare standard vs data-driven Implementation Mapping
- Value: rigorous & comprehensive

Schroeck et al. Implementation Science (2022) 17:58 https://doi.org/10.1186/s13012-022-01231-6 Implementation Science

METHODOLOGY

Open Access

Data-driven approach to implementation mapping for the selection of implementation strategies: a case example for risk-aligned bladder cancer surveillance

Florian R. Schroeck^{1,2,3,4*}

A. Aziz Ould Ismail¹, David A. Haggstrom^{5,6,7}, Steven L. Sanchez⁵, DeRon R. Walker⁵ and Lisa Zubkoff^{8,9}