Implementation Science in Action

Day 2 Workbook

Summit Theme: Applying IS to real lung cancer screening challenges and producing usable tools to increase screening rates.

Your Group's Context:
(e.g., Centralized, Decentralized, Resource-Constrained, or Community/Equity focused)

Breakout 1: Define the Problem & Context

Goal: Select a specific "pain point" and map the environment using the **PRISM** framework.[1]

1. Identify Your Pain Point

Select **1–2 priority problems** (e.g., low initial uptake, poor adherence, or referral breakdowns).

Problem Statement: (Who is affected? What is the gap? Where is it happening? How big is the gap?).

2. Stakeholder Mapping

List the **key stakeholders** involved (e.g., patients, PCPs, radiologists, navigators, payers, administrators).

3. Context Mapping (PRISM)

*Review the **PRISM Webtool** here and refer to the **PRISM Table** in the Appendix for full definitions.*
Briefly note the most relevant contextual factors for your problem:

- **Organizational Perspective:** (e.g., Readiness, burden, coordination).
- **Patient Perspective:** (e.g., Access, service, burden).
- **External Environment:** (e.g., Reimbursement, community resources).
- **LCS baseline** (what is already in place? Any existing practices?)

Cycle 2: Identify Barriers & Select Strategies

Goal: Using the problem statements from the prior breakout session, match specific barriers to a "menu" of implementation strategies.

1. Barrier Analysis

Identify barriers at different levels:

- **Patient Level:**
- **Provider Level:**
- **Organizational/Policy Level:**

2. Strategy Selection (ERIC Menu)[2]

*Refer to **Table 2 (Strategies)**[2] and **Table 3 (High-Quality LCS)**[3] in the Appendix.*
Select strategies that logically match your barriers (e.g., EHR prompts, navigation, or outreach).

Selected Strategy	Rationale: (Why will this work for your specific barriers?)

3. Adaptation: The "Camry" vs. "Rolls Royce"

- **Minimum Viable (Toyota Camry):** What is the simplest version of this strategy?
- **Deluxe (Rolls Royce):** What would this look like with ideal resources?

Minimum viable version	Deluxe version

Cycle 3: Build a Draft Plan or Template

Goal: Move from ideas to a visible, shareable product.

Depending on your group's context and needs, products might include, for example:

- A **checklist of minimum infrastructure/resources** needed for a basic lung cancer screening program in that context.
- A **template flow diagram** (referral to shared decision-making to LDCT to follow-up).
- A **step-by-step change package** for implementing one specific strategy (e.g., patient navigation, EMR reminders, community outreach).
- A **"starter implementation plan"** including: aim statement, strategies selected, key activities, roles, timeline, and simple measures.
- A stakeholder interview guide

Ideally, we'd like to gather ideas for tools **that can be refined and disseminated** after the summit.

If you're stuck, this could be a good place to begin:

The "Starter Implementation Plan" Template

- **Aim Statement:** (What will we improve, by how much, and for whom?)
- **Core Strategy:** (From the ERIC menu)
- **Key Activities:** (Step 1, Step 2, Step 3...)
- **Who is Responsible?** (Roles/Stakeholders)
- **Timeline:** (When will this be tested?)

The Starter Implementation Plan

- **Aim Statement:** What are we improving, for whom, and by when?
    - *Example: Increase LCS adherence by 20% for FQHC patients by Dec 2026.*

- **Selected Strategy (from ERIC):**
    - *Example: Patient navigation + EHR reminders.*

- **Key Activities:** What are the 3–5 concrete steps to make this happen?
    1. _____
    2. _____
    3. _____
- **Roles & Stakeholders:** Who is the champion? Who does the daily work?

- **Simple Measures:** What data shows this worked? (e.g. adherence rates, wait times)

Cycle 4: Refine & Plan for Testing

Goal: Stress-test your tool for feasibility, equity, and measurability.

1. The Reality Check

- **Feasibility:** Is this realistic for a busy clinic or health system?

- **Equity & Stigma:** Does this tool inadvertently leave anyone out? How does it give agency back to the patient?

2. Measuring Success

What **data or simple measures** would show if it's working (e.g., screening rates for specific populations, adherence, wait times, stage shift)?

3. The 3-Month Commitment

Identify **one small test of change** you will try within 3–6 months.

Commitment:
"I commit to test this plan/tool within 4 months by:

4. Report back preparation

Each breakout group will have 10 minutes to present.

- The problem they focused on.
- 1-2 key strategies.
- Their draft product (checklist/template/plan).
- One insight about equity or context that shaped their plan.

Check for group alignment on these points for the report back.

Report back template	
Problem	
1-2 strategies	
Describe the draft product	
An insight about equity that shaped your discussions	

Appendix: Reference Documents

1. **Table 1. PRISM Table: Elements within the Practical, Robust Implementation and Sustainability Model**; Feldstein AC, Glasgow RE. A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice. J Comm J Qual Patient Saf. 2008 Apr;34(4):228-43. doi: 10.1016/s1553-7250(08)34030-6. PMID: 18468362.

2. **Table 2. Proposed ERIC-aligned Strategies to Increase LCS Uptake and Adherence**; Barta JA, Arenberg D, Backhus L, et al. Components Necessary for High-Quality Lung Cancer Screening: A 10-Year Update. *Chest*. 2025;168(5):1257-1270. doi:10.1016/j.chest.2025.06.006

3. **Table 3. High-Quality LCS Components Summary**; Barta JA, Arenberg D, Backhus L, et al. Components Necessary for High-Quality Lung Cancer Screening: A 10-Year Update. *Chest*. 2025;168(5):1257-1270. doi:10.1016/j.chest.2025.06.006

Table 1. Elements within the Practical, Robust Implementation and Sustainability Model (PRISM)	
Program (Intervention) Organizational Perspective*	• Readiness • Strength of the evidence base • Addresses barriers of frontline staff • Coordination across departments and specialties • Burden (complexity and cost) • Usability and adaptability • Trialability and reversibility • Ability to observe results
Patient Perspective	• Patient centeredness • Provides patient choice • Addresses patient barriers • Seamlessness of transition between program elements • Service and access • Burden (complexity and cost) • Feedback of results
External Environment	• Payor satisfaction • Competition • Regulatory environment • Reimbursement • Community resources
Implementation and Sustainability Infrastructure	• Performance data • Dedicated team • Adopter training and support • Relationship and communication with adopters (bridge researchers) • Adaptable protocols and procedures • Facilitation of sharing of best practices • Plan for sustainability
Recipients Organizational characteristics*	• Organizational health and culture • Management support and communication • Shared goals and cooperation • Clinical leadership • Systems and training • Data and decision support • Staffing and incentives • Expectation of sustainability
Patient characteristics	• Demographics • Disease burden • Competing demands • Knowledge and beliefs
*Organizations to be considered at three levels: leaders, managers, and staff.	

Table 1. PRISM Framework contextual domains influencing implementation and sustainability. Adapted from Feldstein AC, Glasgow RE. A practical, robust implementation and sustainability model (PRISM) for integrating research findings into practice. J Comm J Qual Patient Saf. 2008 Apr;34(4):228-43

Table 2. Proposed ERIC-aligned Strategies to Increase LCS Uptake and Adherence	
Strategy	**Approaches**
Leverage the EHR	• Identify eligible individuals for LCS • LCS program referrals and LDCT imaging orders • Track LCS participants • Clinical documentation • Interdisciplinary communication to facilitate clinical workflows • Patient communication via EHR portals
Enhance community outreach	• Collaborate with population science and public health colleagues • Tailor materials and processes to community needs • Leverage community health workers • Host LCS awareness and education events in the community • Expand reach through social media platforms
Engage PCP	• Provide LCS education for PCPs • Identify PCP champions for LCS • Automate LCS referrals to streamline processes • Communicate LCS results and management recommendations
Improve methods for patient education	• Direct communication via patient EHR portals • Develop patient-facing materials tailored to underserved populations • Ensure educational materials are linguistically appropriate and culturally tailored
Use navigators to guide patients	• Navigate individuals through the LCS process (SDM, LDCT imaging, continued annual screening) • Provide patient education on LCS results • Leverage telemedicine tools • Support patients with positive screening results through lung nodule management processes
EHR = electronic health record; LCS = lung cancer screening; LDCT = low dose CT; PCP = primary care provider; SDM = shared decision-making	

Table 2. Proposed ERIC-aligned Strategies to Increase LCS Uptake and Adherence. Adapted from Barta JA, Arenberg D, Backhus L, et al. Components Necessary for High-Quality Lung Cancer Screening: A 10-Year Update. *Chest*. 2025;168(5):1257-1270

Table 3. High Quality LCS Components Summary	
High Quality Component	**Program Component**
Component 1: LCS target population	LCS programs should define their LCS target population, prioritizing individuals likely to have a net benefit from screening, such as those identified by USPSTF 2021 and CMS. Individual programs may consider the expanded populations identified by the ACS, CHEST, or NCCN. Target population determination should consider lung cancer mortality risk, competing risks, insurance coverage, and health equity.
Component 2: LCS uptake and adherence	LCS programs should develop strategies to increase LCS uptake, adherence, and appropriate follow-up for individuals—including individuals in underserved populations—that maximizes the net benefit of screening.
Component 3: shared decision making, including tobacco treatment	LCS programs should support effective SDM, elements of which include confirmation of screen eligibility and overall health, a discussion of the benefits and harms of LCS, the use of a decision aid, exploration of patient values and preferences, and tobacco dependence treatment for individuals who currently smoke.
Component 4: performing LDCT imaging	LCS programs should have protocols in place to minimize radiation dose associated with annual LCS. Multiple aspects of LCS can be optimized to meet this goal, including adherence with ACR and STR technical standards for dose index volume of ≤3 mGy and ensuring appropriate evaluation of LCS detected nodules and nonnodule findings to reduce unnecessary imaging.
Component 5: identify and report LDCT imaging detected lung nodules	LCS programs should develop and adhere to a systematic approach to lung nodule identification that defines and classifies positive results, facilitates structured reporting such as the ACR Lung-RADS, and guides further evaluation.
Component 6: managing screen detected lung nodules	LCS programs should develop an approach to screen detected nodule management that includes guideline based follow up of low-risk nodules and a multidisciplinary or specialist referral strategy for management of high-risk nodules.
Component 7: reporting and evaluating nonnodule LDCT imaging findings	LCS programs should develop an approach to evaluate non nodule findings identified during LCS that includes consistent reporting of clinically significant findings and a structured approach to their evaluation to ensure that non nodule findings are communicated appropriately and evaluated.
Component 8: quality improvement measures	LCS programs should monitor valid, feasible, and clinically relevant quality measures related to screening process, structure, and outcomes to drive quality improvement initiatives. Quality metrics should include whether an LCS appropriate target population is completing screening, measures of LCS uptake and adherence, timeliness of cancer diagnosis, and benign biopsy results and resection rates.

ACR = American College of Radiology; ACS = American Cancer Society; CHEST = American College of Chest Physicians; CMS = Centers for Medicare and Medicaid Services; LDCT = low dose computed tomography; LCS = lung cancer screening; NCCN = National Comprehensive Cancer Network; SDM = shared decision making; STR = Society of Thoracic Radiology; USPSTF = U.S. Preventive Services Task Force.

Table 3. High-Quality LCS Components Summary. Adapted from Barta JA, Arenberg D, Backhus L, et al. Components Necessary for High-Quality Lung Cancer Screening: A 10-Year Update. *Chest*. 2025;168(5):1257-1270.