NIH PRAGMATIC TRIALS COLLABORATORY

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LungSMART UTAH

# Population Health Management Approaches to Increase Lung Cancer Screening in Community Health Centers (LungSMART)


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**Collaborators**
- Community Health Centers in Utah
- Association for Utah Community Health

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## ABSTRACT

Lung cancer is the leading cause of cancer-related mortality in the United States, accounting for approximately 1 in 5 cancer-related deaths. Approximately 80% of lung cancers are attributable to cigarette smoking. Annual low-dose computed tomography screening for lung cancer (hereafter referred to as "lung cancer screening") is recommended by the US Preventive Services Task Force (USPSTF) for eligible patients. Despite evidence of effectiveness and the USPSTF recommendations, implementation of lung cancer screening into clinical practice has been exceedingly limited, with only 18% of eligible individuals up to date with screening, and there are major health inequities in lung cancer screening related to race/ethnicity and socioeconomic status. The long-term goal of this program of research is to increase the reach of lung cancer screening at scale among low-resource healthcare settings and populations that have been historically marginalized. LungSMART is a 2-phase, sequential multiple-assignment randomized trial (SMART) conducted in community health centers in Utah. Utah has 14 community health center systems with approximately 50 primary care clinics. Each of the Utah community health centers is a federally qualified health center providing comprehensive primary care to more than 160,000 patients annually. Patients in Utah community health centers are 52% Latino, 8% Native American, 40% best served in a language other than English, 55% below the federal poverty level, and 43% uninsured, and 41% of the clinics are in rural areas (Rural-Urban Continuum Code greater than 4). LungSMART is guided by a comprehensive conceptual framework and is designed to directly address lung cancer screening implementation challenges to ensure equitable implementation and reduce health inequities. LungSMART uses a population health management framework in which scalable, accessible, and sustainable digital and telehealth interventions are used to engage patients in lung cancer screening. Phase 1 of LungSMART leveraged ubiquitous technologies to enable patients to be assessed for lung cancer screening eligibility, engage in shared decision-making if eligible, and be referred for lung cancer screening. Phase 2 of LungSMART is testing digital and telehealth interventions designed to address logistical barriers and hesitancy around completing lung cancer screening among referred patients. LungSMART leverages smartphone/internet technologies when available and also supports patients whose only telehealth connectivity is a cellphone. A centralized "hub" enables eligibility assessment, shared decision-making with clinical decision support, screening referral, and screening logistics assistance at scale to help overcome numerous social determinants of health that affect low-resource settings populations with disproportionately lower screening rates. All study procedures and interventions will be conducted in English or Spanish based on the patient's preferred language. In sum, LungSMART is being conducted in a real-world context across multiple independent healthcare delivery systems with limited resources and among populations with disproportionately lower screening rates. LungSMART will provide a critical evidence base for the large-scale implementation of interventions designed to reduce health disparities in lung cancer screening in community health centers and other low-resource settings nationwide.

## WHAT WE'VE LEARNED SO FAR

| Challenge | Solution |
|---|---|
| Aligning IRB review and study milestone timelines | The study team proactively submitted an IRB application for the clinical trial study procedures during the UG3 planning phase. Because review timelines can vary and are difficult to predict, early submission allowed the team to move through the review process without impacting the project timeline. This approach helped keep the study on track for its planned launch date. |
| Coordinating information needed to finalize data transfer/use agreements. | Executing data transfer agreements with participating community health centers depends on administrative information that becomes available once funds are released for the UH3 implementation phase. However, to keep study launch on schedule, the study team focused on having as much of the agreement ready as possible. This included confirmation of data elements to be shared and coordination with partners for expedited signing. |
| Care coordination between the centralized hub and primary care providers at all participating community health centers | Since eligibility assessment, shared decision-making, lung cancer screening referrals, and return of results are all done by the centralized hub, careful workflow design was needed to ensure that LungSMART closes the loop with primary care providers regarding their patients' lung cancer screening results. To ensure effective care coordination, the study team worked with participating community health centers to obtain access and train the centralized hub staff on the electronic health record (EHR) systems of each participating community health center. The centralized hub staff uses the EHRs to document telehealth-based shared decision-making appointments, place lung cancer screening referrals, track referral completion and screening results, and communicate results to patients and primary care providers. |

*"Hearing about the lessons learned and multidisciplinary expertise from the other NIH Collaboratory Trials and the Core Working Groups in the NIH Collaboratory has been extremely helpful. We also appreciate programs and resources such as the Grand Rounds webinars, Annual Steering Committee Meetings, Core publications, the podcast, and the Living Textbook." — Dr. Guilherme Del Fiol*

*"Our original plan was to seek a full waiver of consent. However, after review with the Ethics and Regulatory Core, we shifted to a waiver of documentation of consent for data collection and a waiver of consent for deidentified EHR data extraction. These were approved without issue by the central IRB. Having adjusted our strategy prior to IRB submission based on input from the Core was likely a major reason the IRB review went so smoothly." — Dr. Christine Goertz*

## SELECTED PUBLICATIONS & PRESENTATIONS

- Presentation: NIH Pragmatic Trials Collaboratory Onboarding Meeting (2024)
- Article: Mixed-Method Formative Evaluation and Cultural Adaptation of Digital Health Communication Content and Delivery Promoting Lung Cancer Screening Shared Decision-Making (2026)
- Article: An Acceptance Criteria Framework for Determining the Implementation Fit of Custom Large Language Models in Public Health Interventions (2026)

See the complete set of LungSMART resources.