Implementing a Tribally-Engaged Lung Cancer Screening Program in Rural Oklahoma (Update)

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In partnership with the Choctaw Nation of Oklahoma

EXPLORE HEALTHCARE SUMMIT

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Learning Objectives

- Through a pilot study example demonstrate how evidence can be translated into clinical practice for implementing a low-dose CT lung cancer screening (LCS) program in a rural/tribal community
- Explore the components and steps of implementing an LCS program that may overcome some of the barriers to increasing LCS rates in rural/tribal health systems
- Discuss how lessons learned from our pilot study may help attendees facilitate the dissemination of an LCS program in their organization

TEALS Study Background & Aims

Lung cancer screening (LCS) with low-dose computed tomography is a grade-B USPSTF recommendation (2013 –> 2021) and reduces mortality by 20%. Implementation of LCS has rarely been studied in American Indian and Alaska Native (AI/AN) communities, many of which are at increased risk of lung cancer.

We initiated the Tribally Engaged Approaches to Lung Screening (TEALS) study in 2019 to co-design and test a tribal community-engaged LCS implementation program:

- **Aim 1:** Identify individual, community, cultural, health system **barriers & facilitators** that affect LCS implementation in the Choctaw Nation;
- **Aim 2:** Use community-engagement processes to co-design a **tailored TEALS intervention**, which features LCS care coordinators embedded within the CNHSA healthcare delivery system;
- **Aim 3:** Measure the **impact of the LCS program** in a clinical trial, assessing process outcomes at the individual and care delivery system level;
- **Aim 4:** **Disseminate the LCS program** to other health systems.

TEALS Community Partnership

- TEALS is based on a Community-Engaged Research (CEnR) approach supported by an academic-tribal research subcontract
- TEALS engages 8 primary care centers of the Choctaw Nation Health Services Authority (CNHSA) in Southeast Oklahoma (2 LDCT scanner sites: Talihina & Durant)
- University of Oklahoma Health Sciences Center and the Stephenson Cancer

Choctaw Nation of Oklahoma primary care sites in SE OK

TEALS Study Design & Population

Year 1: Planning and program co-development with our partners using community-engaged research

Year 2: Pilot implementation study in 2 CNHSA primary care centers

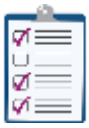
Years 3-4: Pair-matched, cluster RCT in 6 CNHSA primary care centers

Year 5: Dissemination of results and facilitating implementations

- Enrollment: Patients seen in selected practices (N_{total} = 268), who meet LCS criteria and clinicians/staff/leadership (N_{total} ~50) from clinic sites
- Quality improvement and implementation support for LCS across all CNHSA clinic sites

TEALS Planning Phase (Year-1)

Creating a tribal community-centered **study protocol** and obtaining multiple Institutional Review Board (IRB) approvals



Establishing a **Community Advisory Board** (CAB), representing key LCS constituents within the CNHSA

The CAB advises investigators on the **study planning** process and develops a Choctaw Nation-tailored LCS patient **decision-aid** for system-wide use

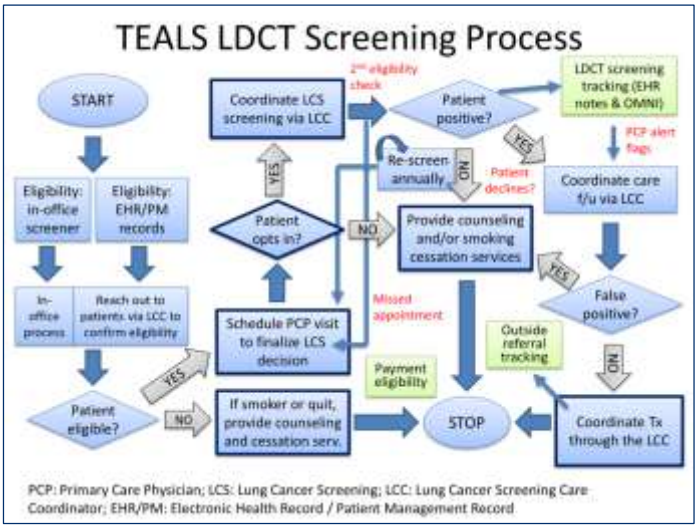
Establishing and operating a **Scientific Advisory Board** (SAB) of 3 national LCS experts and 8 key study personnel

Providing LCS care **coordinator training** through the Stephenson Cancer Center in Oklahoma City

Mapping and analyzing the LCS care delivery process with the help of a trained primary care practice facilitator

TEALS Pilot Study Patient Care Path

- Two mid-size primary care practice centers were selected to serve as implementation pilot sites (N=57 patients)
- The LCS intervention was centered on 1.5 FTE health system-wide lung cancer screening coordinators (LCCs) both at the clinic sites and at the health system level
- LCCs used OMNI to track services (patient registry)



TEALS Pilot Study Measures

Measures & Timing	Description of Measures	Data Sources and Collection Methods	N (sample)
Patient measures at baseline and at 6 months	Patient demographics and socio-economic status (SES)	Practice records and short SES survey	Planned: 50/practice N=100 ***N=57 (actual)***
	Patient attitudes toward LCS	Attitudes survey	
	Patient experience with preventive care	CAHPS PCC-10 survey	
Patient measures at 12 months	Patient interviews on experience and satisfaction with the LCS program	Interviews with LCS completers and non-completers	10 per practice 20 total
Practice measures at baseline and 12 mos	Practice readiness for preventive care improvement	CPCQ survey	3 per practice 6 total
System measures at 12 months	System-level experience with LCS program, decision making factors, feedback	Interviews with CNHSA leadership	10 total

TEALS Pilot Patient Population Statistics

Demographic Characteristics	N (57)	%
Mean Age (years):	67 (55-77)	-
Sex (female):	28	49

Race :	N (57)	%
Native American/American Indian (NA/AI)	57	100
Biracial (White and NA/AI)	1	0.2

Median Annual Household Income:	N (57)	%
<$25,000	28	49
$25,000-$50,000	15	26
$50,000+	14	25

Education:	N (57)	%
High school or less	33	57
At least some college	24	43

Smoking Statistics

- **Current rate of cigarette smoking:** 66% of respondents
- **Number of cigarettes per day:** 23+/-12 (mean/SD)
- **Length of smoking:** 43+/-11 (mean/SD) years
- **Pack-years of smoking:** 46+/- 23 (mean/SD)
- **Mean quit time:** 8 years
- **Smoking cessation intervention:** 63% of LCS patients who smoked had documented intervention or f/u

TEALS Pilot Study Baseline Care Utilization

Access to Care Characteristics	Mean	Range
Number of visits in 6 months:	4.56*	1-7

Preventive Care Patterns:	N	%
Made an appointment for a health checkup with doctor	34	60

Up-to-date on the Following Tests/Exams:	N	%
Mammogram	10	18
Colonoscopy, sigmoidoscopy or stool test	17	30
CT scan to look for lung cancer	22	39

* unchanged during the study

TEALS Pilot Participation & LCS Statistics

Participation Metrics (October 2021 - June 2022)	N (57)	%
Completed baseline patient survey	56	98%
Completed post-intervention patient survey	44	79%
Participant deaths (unrelated)	1	0.02%
Lost to follow-up	12	21%
Study participation time (months)	8.6 +/- 1.8	-

Lung Cancer Screening (LCS) Metrics	N (57)	%
Up-to-date on lung cancer screening (after ~8-month intervention)	22 --> 33	39% -> 58%*
Screening result Lung-RADS 1 ("negative")	34	60%
Screening result Lung-RADS 2 ("benign appearance" nodule/s)	17	30%
Screening result Lung-RADS 3 ("probably benign" nodule/s)	3	5%
Screening result Lung-RADS 4 ("suspicious" nodule/s)	3	5%
Further evaluation of nodules	9	15%
Malignant nodules	0	0%

*p < 0.01

TEALS Pilot Patient Surveys (Pre & Post)

- Most patients agreed that their doctors almost always/always **explain things** in a way that was easy to understand (Likert scale mean = 5.42 [1-6]; *no change*)
- Most patients agreed that their doctors almost always or always **spend enough time** with them (Likert scale mean = 5.39 [1-6]; *no change*)
- 65% agreed that they may get lung cancer during their lifetime, but that "lung scans" will **aid early detection** and reduce risk (*no change*)

Patient Knowledge & Attitudes About LCS (Pre-Post)	N (56-44)	%
Addressing patient recall of offering choices for their care	46/56 – 44/44	82% – 100%*
Discussing specific care treatments with the clinician	50/56 – 44/44	89% – 100%*
Offering a CT scan to look for lung cancer	31/56 – 36/44	56% – 81%*
Patient awareness about lung cancer screening	32/56 – 36/44	58% – 81%*
Patient's belief that no one had lung cancer in the family	7/56 – 15/44	13% – 35%*

*$p < 0.04$ (pre-post)

TEALS Pilot Qualitative Patient Feedback

Semi-structured patient interviews with screening completers (10) & non-completers (10)

Contextual Factors in the Clinical Environment

- Primary care clinician does not bring up LCS (the most frequently noted barrier!)
- Use of (culturally) tailored decision-support materials and patient education are often lacking

Practical Barriers to Screening

- Past diagnostic chest CTs, "muck up" decision-process for screening eligibility
- Long distance travel and gaps in transportation to LCS sites (major barrier in rural areas)
- Work absenteeism and coverage gaps for screening or follow-up services
- Confusion about the nature of the appointment leading to missed appointments (education!)

Characteristics that Influence Individual Decision Making

- Personal motivation to 'be there' for family/children (survival or ability to function as needed)
- Family history of previous cancers (bad experiences and family stories)
- Ease of scheduling appointments and following LCS referrals
- Shame/stigma or preferred not to know the results of screening ("*You did this to yourself…*")

TEALS Program Implementation Components

- Large banners offering LDCT screening in participating clinics
- 1.5 FTE lung cancer screening coordinators
- Tribally-tailored education/SDM support materials
- Academic detailing in all primary care practices
- Practice facilitation in all primary care practices
- Screening registry and data management support
- Smoking cessation service improvements
- Some transportation support (e.g., tribal vehicles)
- Systematic appointment reminders
- Eligibility triage tool (on iPads)
- Community advisory board
- Scientific advisory board
- Clinician "best practices"
- Peer clinician champion support

More Lessons: Optimized LCS Process

- **Step 1:** Improving smoking history assessment and documentation (to determine pack years)
- **Step 2:** Implementing screening conversation triggers (regular care and population health)
- **Step 3:** Building a preventive care coordination function (coordinator/navigator and screening registry)
- **Step 4:** Instituting an LCS shared decision-making process (in-clinic or post-visit nurse calls)
- **Step 5:** Deploying a robust patient follow-up process
- **Step 6:** Linking LCS to smoking cessation services

Lessons Learned from the TEALS Pilot

- A community-engaged, multi-component, and multi-level program can significantly improve LCS rates in rural and tribal health systems
- A key feature of TEALS is a centralized LCS coordination service supported by a population-based screening registry
- Ongoing community stakeholder participation and community-tailoring of the intervention approach greatly contributed to the success of TEALS
- If supported by the findings of our larger clinical trial, TEALS holds promise for dissemination to other high-need primary care settings

TEALS: Acknowledgements

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Questions? Comments?

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