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

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In partnership with the Choctaw Nation of Oklahoma

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TEALS: Background & Aims

Lung cancer screening (LCS) with low-dose computed tomography is a grade-B USPSTF recommendation 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.

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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 (including 2 LDCT scanner sites)
- University of Oklahoma Health Sciences Center and the Stephenson Cancer

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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=580), who meet LCS criteria and clinicians/staff/leadership (N~50) from clinic sites
- Quality improvement and implementation facilitation support for LCS: across all CNHSA clinic sites

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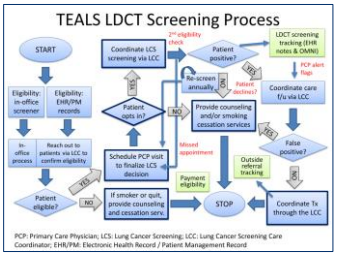
TEALS: Year-2 Pilot Study

- Two mid-size primary care practice centers were selected to serve as implementation pilot sites (N=100 patients)
- The LCS intervention was based on health system-wide lung cancer screening coordinators (LCCs) both at the local practice centers and centrally, at the health system level



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TEALS: Year-2 Pilot 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	50/practice N=100 (planned) ***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 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

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TEALS: Year-2 Pilot Baseline (1)

- Most patients agreed that their doctors almost always or always **explain things** in a way that was easy to understand (mean of Likert scale=5.42 [1-6])
- Most patients agreed that their doctors almost always or always **spend enough time** with them (mean of Likert scale=5.39 [1-6])
- 58% **heard about a "lung scan"** to find lung cancer before symptoms appear
- 65% agreed that they may get lung cancer during their lifetime, but that "lung scans" will **aid early detection** and reduce risk

Demographic Characteristics	N	%
Sex (Female):	28	49

Race :	N	%
Native American/American Indian (NA/AI)	44	77
Biracial (White and NA/AI)	12	21
Biracial (African American and NA/AI)	1	0.2

Annual Household Income:	N	%
<$25,000	30	52
$25,000-$50,000	14	25
$50,000+	6	11

Education:	N	%
High school or less	35	63
At least some college	21	37

- 70% reported smoking cigarettes
- Mean number of cigarettes/day: 23.2

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TEALS: Year-2 Pilot Baseline (2)

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

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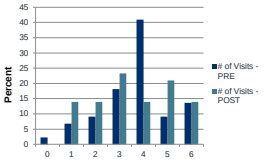
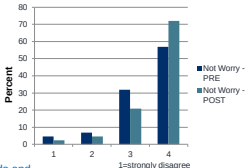
TEALS: Year-2 Pilot Patient Surveys (Pre-Post)

In the last 12 months, how many times did you **visit this doctor** to get care for yourself? (Npre=44; Npost=43)



Having lung cancer scan will **help me not worry** as much about lung cancer. (Npre=44; Npost=43)



1=strongly disagree
2=somewhat disagree
3=somewhat agree
4=strongly agree

Changes are not statistically significant but there are trends and redistributions. These also include: (1) Scan helps plan for the future; (2) Scan will lower my cancer chances.

TEALS: Year-2 Pilot Qualitative Data

Semi-structured patient interviews (N=15) with screening completers and non-completers:

Contextual Factors in the Clinical Environment

- Primary care clinician needs to bring up LDCT screening (most frequently noted)
- Use of tailored decision-support materials during clinic visits, e.g., handouts and pamphlets

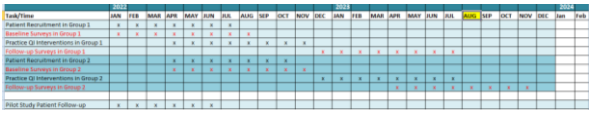
Barriers to Screening

- Long distance travel to LCS sites
- Opportunity cost, e.g., missing work (patient or family member driving)
- Gaps in transportation or access to transportation assistance (a major barrier)
- 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)
- Family history of previous cancers (bad experiences)
- Ease of scheduling appointments
- Some non-completers preferred not to know or were scared to know the results of screening

TEALS: Ongoing RCT Timeline & Design



PATIENT RECRUITMENT GOALS:	40 LDCT screening-eligible patients in each of the 6 study practices will be consented and recruited into TEALS (N=240)
PATIENT SURVEY GOALS:	240 study patients will be surveyed at baseline and re-surveyed within 12 months after their baseline survey (in 2 groups)
PATIENT RECORD TRACKING GOALS:	In addition to recruited (consented) patients we will extract the medical records of another 240 for only tracking of LDCT services received (N=480)
PRACTICE INTERVENTION COMPONENTS:	Improving smoking status documentation; Implementing screening initiation "triggers" and processes; Implementing shared decision-making for LDCT screening; Patient f/u; Smoking cessation services

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"
- Clinician champion/advocate

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TEALS: Lessons Learned So Far

- Due to the nature of primary care, the COVID-19 pandemic deeply impacted community-based prevention programs on many levels (e.g., competing priorities/time; infrastructure; new services/telehealth; economics; backlog of care)
- Primary care-based research must be more flexible, even after the pandemic (e.g., protocols, timelines, measures)
- Rate-limiting LCS steps include: identifying eligible patients (detailed smoking status and reminder algorithms); implementing LCS shared decision-making; providing post-LCS navigation (all of these require extra time and staff)

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More Lessons: Optimized LCS Process

- **Step 1:** Improving smoking status assessment and documentation (frequency and depth)
- **Step 2:** Implementing screening conversation triggers (regular care and population health)
- **Step 3:** Instituting an LCS shared decision-making process (in-clinic or post-visit call with an RN/LPN/NP)
- **Step 4:** Building a preventive care coordination function (coordinator/navigator and screening registry)
- **Step 5:** Deploying a robust follow-up process
- **Step 6:** Linking LCS to smoking cessation

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TEALS: Next Steps

- **Complete Data Mining from Pilot Study**
  - Complete TEALS pilot study data analyses
  - Disseminate findings from the pilot study
- **Complete the TEALS RCT** (final year)
  - Wrap up all interventions in both study groups (N=480 patients)
  - Collect all post-intervention data at the practice and patient level
  - Compare two study groups and analyze RCT results
- **Disseminate RCT Results**
  - Aggregate all data and learning across all study years
  - Create study products, including an Implementation Toolkit
  - Disseminate study products to partners (community/scientific)

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Questions? Comments?

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