

# **Increasing Access to Lung Cancer Screening for American Indians in South Dakota**

**2021 Prevent Cancer Dialogue  
Prevent Cancer Foundation**

**Daniel G Petereit, MD, FASTRO  
PI of Walking Forward**

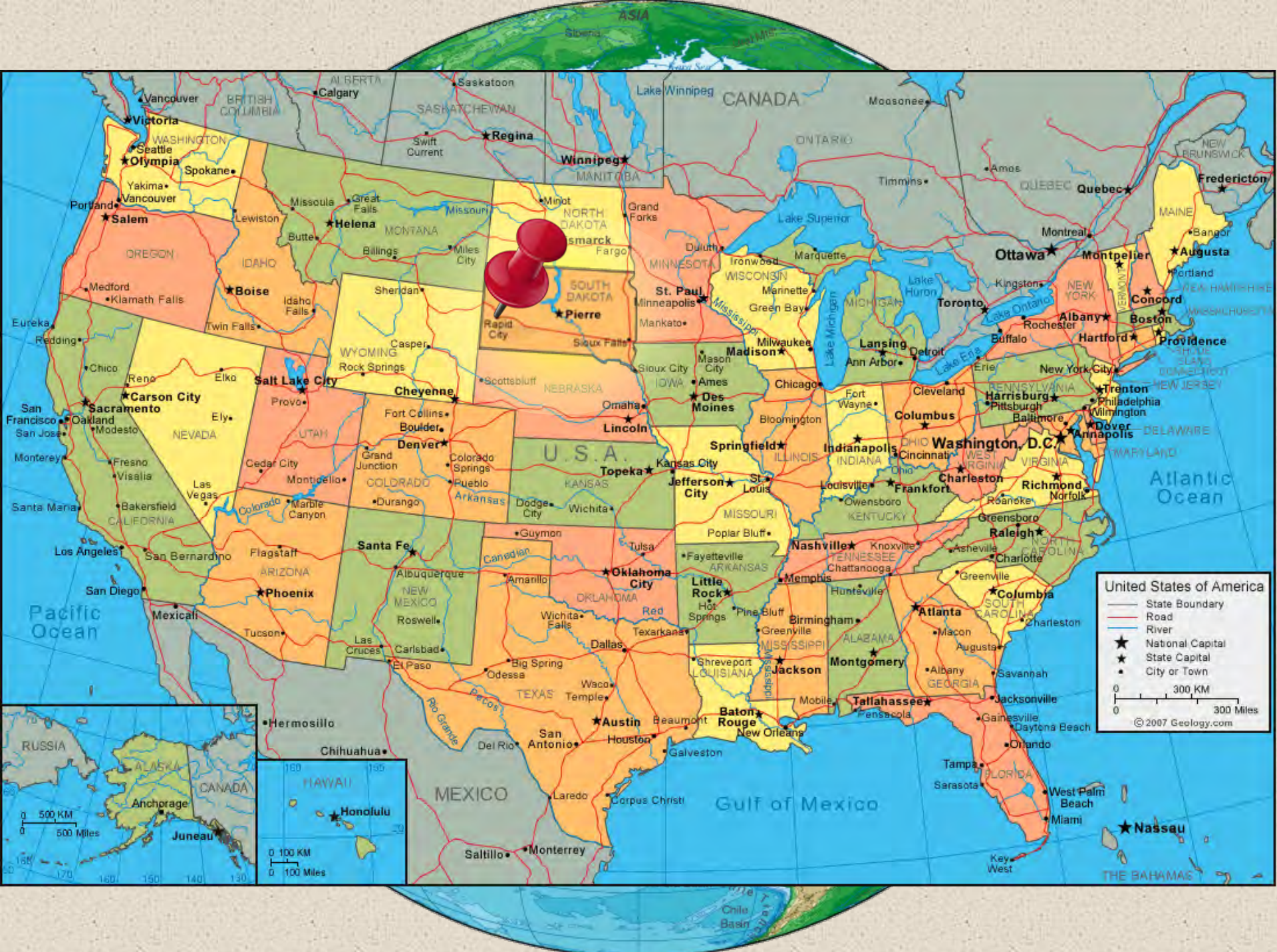
**Avera Cancer Care Institute, Sioux Falls, SD  
Regional Cancer Care Institute, Rapid City, SD**

## Disclosures

- **Bristol-Myers Squibb Foundation**
- **Pink Pony Ralph Lauren Foundation**
- **Irving A Memorial Hansen Foundation**
- **NCI Funding**
- **All funding supports Walking Forward staff and objectives to complete research goals**
- **Past President of the American Brachytherapy Society (2019-2020)**

# Objectives

- **Challenges of providing health care to tribal and rural communities in western, SD**
- **Summary of 18 year results on efforts to reduce cancer disparities through innovative technologies and patient navigation**
- **Challenges to lung cancer screening in western, SD**
- **How challenges were previously and continue to be addressed**
- **Lessons learned**



# Cancer in Native America/Challenges

Guadagnolo, Petereit Sem in Rad Oncol, 2017

McClelland, Leberknight, Petereit Advances in Radiation Oncology 2017

- **High rates of high risk health behaviors and comorbidities (social stressors)**
- **Low screening rates (resources, trust, remoteness, health literacy)**
- **AI/ANs more likely to have advanced-stage cancer at diagnosis than other racial groups**
- **AI/ANs less likely to get cancer-directed therapies after cancer diagnosis than non-Hispanic whites**
- **Pine Ridge Indian Reservation Data**
  - **Median age: 25**
  - **51% live below poverty**
  - **Life expectancy lowest in the US: 48 males, 52 for females**

# Cancer in Native America/Challenges

- **AI/ANs with cancer dx more likely to be admitted for non-elective procedures and more likely to undergo emergent procedures (ACS NSQIP database)**
- **SEER analysis demonstrate AI/ANs less likely to undergo any cancer surgery at all compared to other racial groups**
  - Perception that cancer is a death sentence
- **Less likely to receive chemotherapy and radiation for breast, colon and prostate cancer**
- **Lower rates of hospice use than whites among AI/ANs dying of cancer**
- **Poverty is not the only issue: poorer cancer-related survival persists among AI/ANs , even when adjustments are made for influence of poverty. Ward et al Cancer J Clin 2004;54;78-93**

# Northern Plains



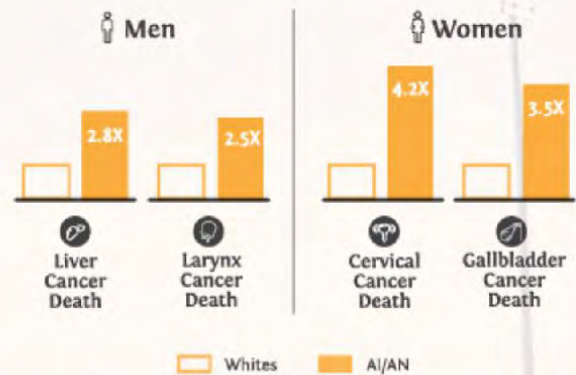
AI/AN in the Northern Plains experience some of the **highest** cancer diagnoses and death rates in the United States.

## Most Common Cancers: Northern Plains

Cancer Diagnosis	Women	Cancer Deaths
#1 Breast		#1 Lung *
* #2 Lung		#2 Breast
* #3 Colorectal		#3 Colorectal *
Cancer Diagnosis	Men	Cancer Deaths
#1 Prostate		#1 Lung *
* #2 Lung		#2 Colorectal *
* #3 Colorectal		#3 Prostate *

\* Indicates higher rate for AI/AN than whites

## Cancer Disparities for AI/AN vs. Whites: Northern Plains



## Prevention

Lung cancer is the leading cause of cancer death in the Northern Plains. Improved access to tobacco cessation services like quit lines, medications, and counseling can help AI/AN people quit commercial tobacco and reduce their risk for lung cancer.



Western South  
Dakota

Pine Ridge

Rosebud

Cheyenne River

Rapid City



# *Pine Ridge IHS Hospital Geographic Distance*



**For American Indians: average distance is 140 miles to Rapid City**





# Walking Forward Community Model for Cancer Control



# Walking Forward Phases

- **Phase I and II: Community education, screening, patient navigation enrollment clinical trials  
2002-2011**
- **Phase III: Mobile health smoking cessation program  
2011-2017**
- **Phase IV: Lung Cancer Screening Project (LDCT)  
2018-2022**
- **Phase V: RO1 Palliative Care Grant  
2019-2024**

**Overarching goal: reduce cancer mortality rates**



## Addressing Cancer Disparities

- Behavioral research: assessing barriers to early cancer detection
- Culturally appropriate community education
- Comprehensive patient navigation program
- Recruitment to clinical trials
- Shorter treatment schedules for prostate and breast cancer: brachytherapy and IMRT (geographic distance)

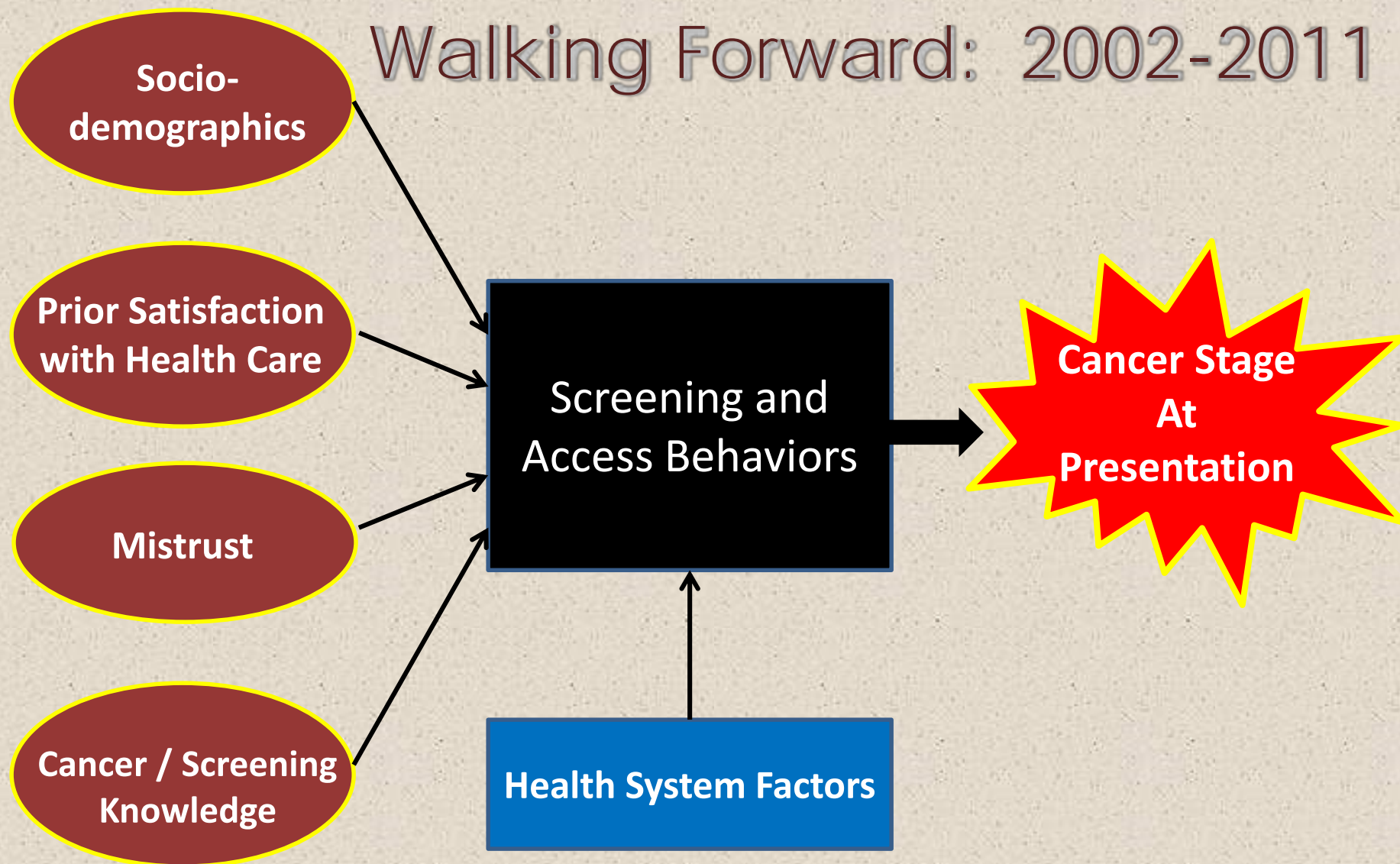
**Primary Hypothesis:** these interventions would lead to patients presenting with earlier stages of cancer

Petereit et al. Addressing Cancer Disparities among American Indians, *Frontiers in Radiation Oncology* 6/22/11



**Founding Partners:** UW - Minesh Mehta, Mayo – Judith Kaur

# Walking Forward: 2002-2011



# Patient Navigation Program

## Two Navigation Programs:

1. Community Navigation Program
  - Community Research Representatives (CRRs)
  - Assessment of barriers to early cancer detection
  - Goal: promote education, outreach networking
  
2. Cancer Navigation Program
  - RN navigators
  - Identify barriers during cancer treatment
  - Goal: assist cancer patients during cancer treatment

# Patient Navigation for Native Americans Undergoing Cancer Treatment

- **Analysis of 332 NAs navigated February 2004 through September 2009**  
**Historical comparison to 70 NAs not navigated**
- **Treatment interruptions during XRT, curative intent:**  
**1.7 days navigated patients vs. 4.9 days non-navigated**
- **22% of navigated patients enrolled in a clinical trial**

Guadagnolo BN, Petereit DG, et al, Cancer June 15, 2011



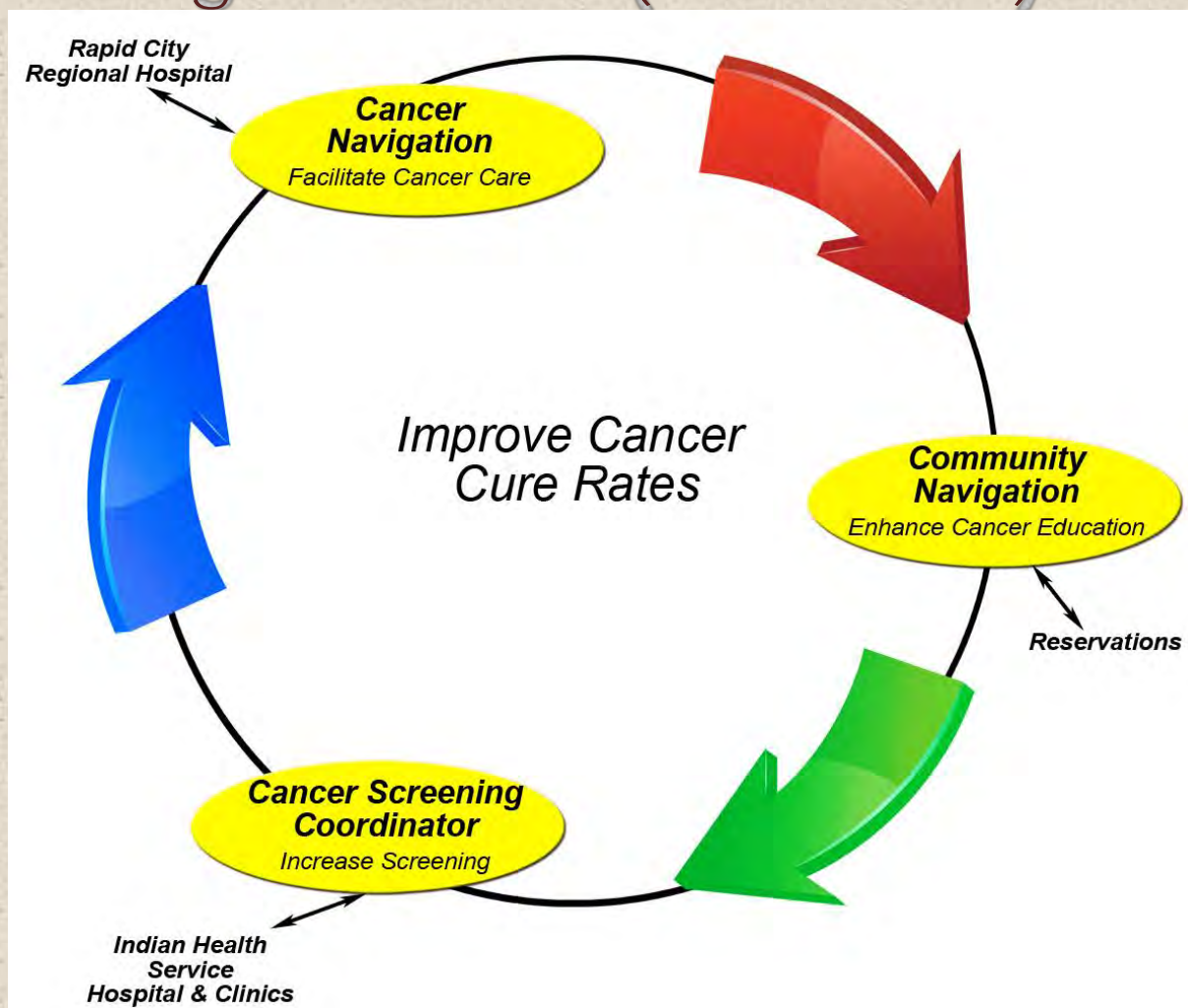
# Patient Navigation Impact

- **Reduction treatment interruptions: Yes**
- **Overall experience during treatment enhanced: Yes**
- **Change in trust towards healthcare system: No**
- **Cultural Competency: Yes**

Molloy, K, Petereit, D et al. Developing and Implementing a Culturally Competent Patient Navigator Program in American Indian communities in Western, South Dakota. *Association of Community Cancer Centers Oncology Issues*, 22 (5);38-41, Sept/Oct 2007.

Guadagnolo BA, Cina K, Koop D, Brunette D, Petereit DG. A pre-post survey analysis of satisfaction with health care and medical mistrust after patient navigation for American Indian cancer patients in the Northern Plains. *Journal of Health care for the Poor and Underserved*. 22(4), 2011;1331-13433

# Model for Expanding Patient Navigation Walking Forward II (2007-2012)



# Cancer Screening Coordinators





EXIT

Table displayed on the presentation screen:

Year	Value
2010	100
2011	105
2012	110
2013	115
2014	120
2015	125
2016	130
2017	135
2018	140
2019	145
2020	150

**METH FREE**  
**ZONE**  
DONT METH AROUND



# Walking Forward: Screening Initiatives

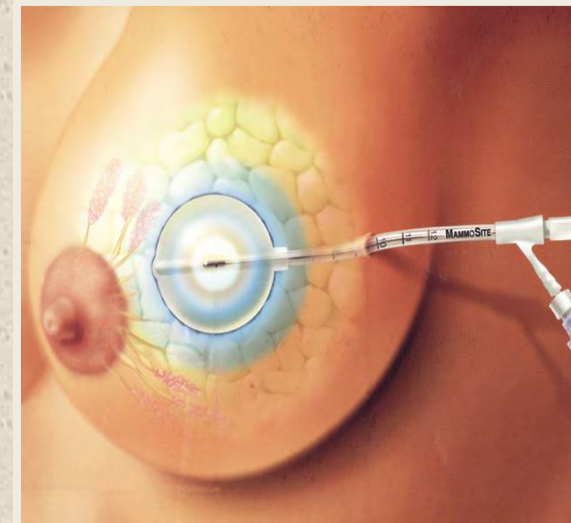
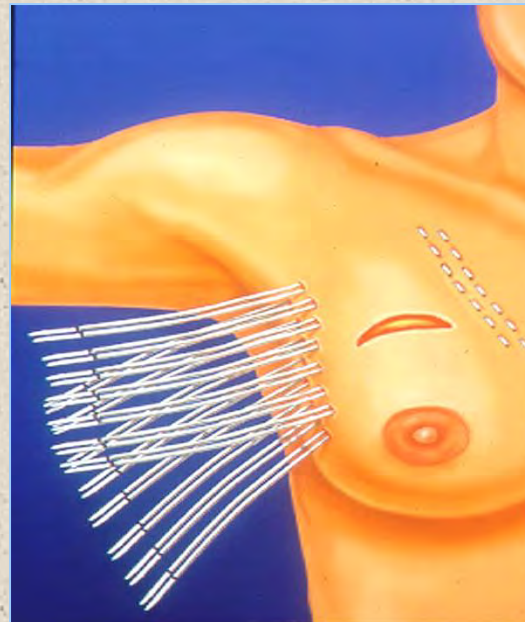
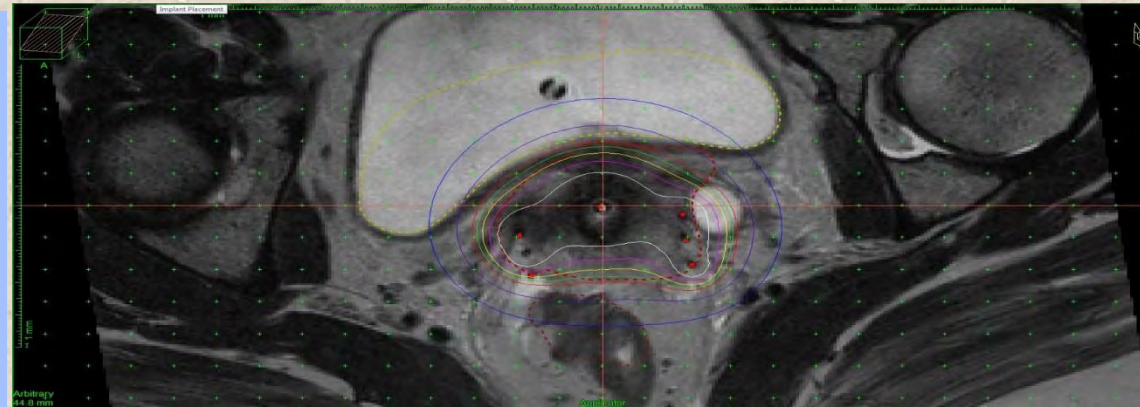
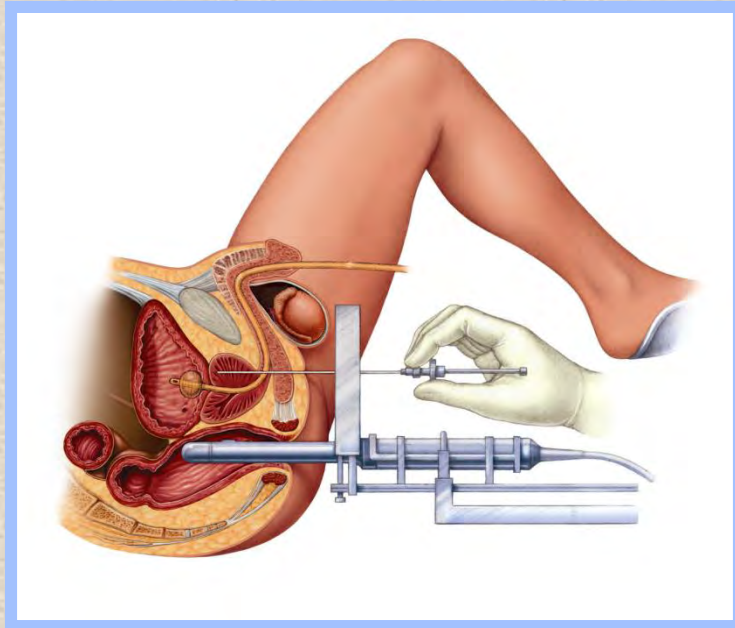
- Totals for Rapid City, Pine Ridge, Rosebud, and Cheyenne River
- Breast, cervix, colorectal, and prostate:
- **As of November 2020: 3,200**

Cancer Screening Among American Indians by Walking Forward Program				
Site	# of Screens	Abnormal Test Results	Cancer Diagnosis	Pending Results
Breast	721	91	4	1
Cervix	480	33	1	0
Colorectal	444	78	2	0
Prostate	136	1	0	0
<b>Total</b>	<b>1781</b>	<b>203</b>	<b>7</b>	<b>1</b>

# Walking Forward 18 year Results

- **Accrual rate of 10% of AIs to clinical trials**
- **Nearly 4,500 American Indians enrolled research studies**
- **Increased compliance with cancer treatment**
- **Identification of specific barriers to effective cancer screening and cancer care**
- **Coordination of 3,200 cancer screenings**
- **Successful completion of a genetic study (ATM)**
- **Completion of a randomized smoking cessation trial**
- **Establishment of trusting partnerships with AI communities**
- **Creation of research infrastructure to address new research questions**
- **Continuation and creation of partnerships for sustainability**

# Clinical Trials – Brachytherapy





# Clinical Trials – Intensity Modulated Radiotherapy (IMRT)

**Rapid City was the first community site and the fourth unit worldwide – installed 2001**



# American Indian Stage at Cancer Presentation

## Potential Impact of Walking Forward Interventions

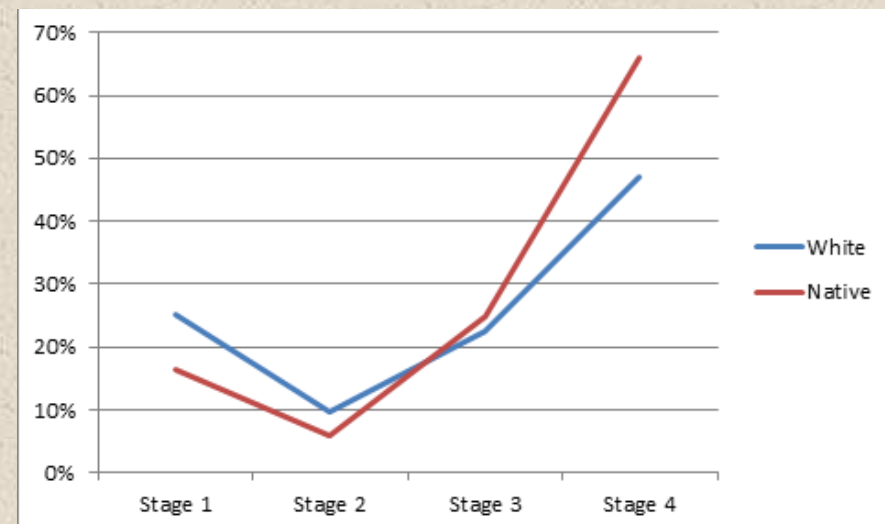
Cancer Stage at Presentation	1990-2000	2001-2012 (WF era)
In situ	13 (8%)	18 (4%)
Localized	48 (29%)	187 (45%)
Regionalized	41 (25%)	126 (30%)
Distant	63 (38%)	89 (21%)
Total	165	420

P < 0.001

# Smoking and Lung Cancer in South Dakota

- High smoking rates: State average 20%, 7 counties over 30% (Todd County highest at 41%)
- High lung cancer mortality rates:
  - American Indian: 95 per 100,000
  - Whites: 55 per 100,000
  - **Northern Plains AIs: highest lung cancer mortality rate in the US**

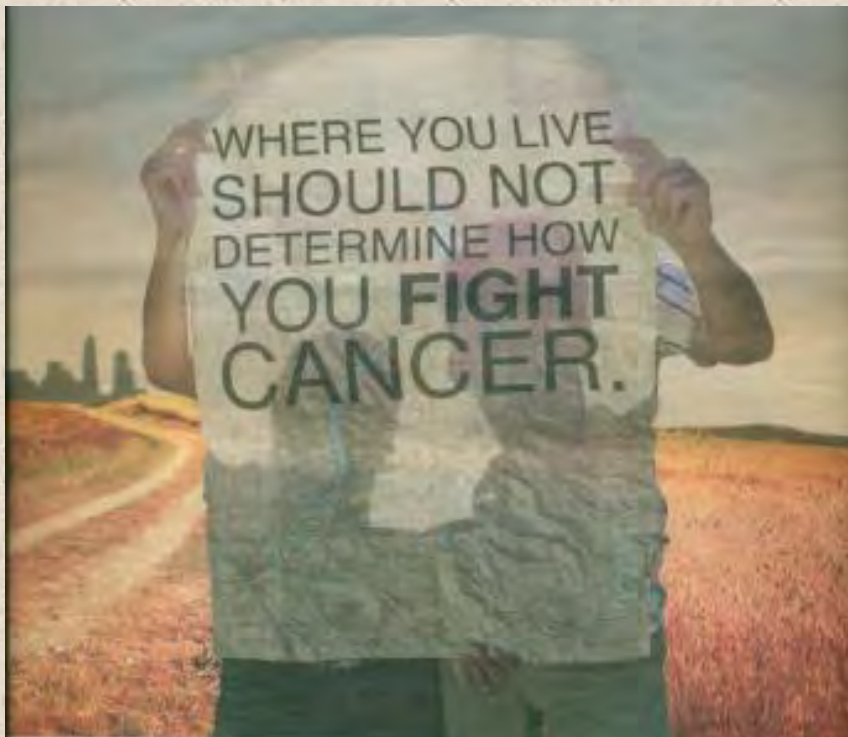
New diagnosis of Non-Small-Cell Lung cancer 2009-2015 Rapid City



# Lung Cancer Screening Rationale

- Only 2-4% screened nationally (historically)
- Potentially 30,000 screen eligible South Dakota
  - 14,000 western part of SD
- Limited use of LDCTs by primary care providers (PCP)
- High risk individuals: many unaware
- Higher cure rates and good treatment options: surgery or SRS (stereotactic radiosurgery)

# Limited Access to Lung Cancer Screening in South Dakota



- Population density in SD: 11 people per square mile
- Only 16 cities with screening centers in SD (~77,000 square miles or 49 million acres)
- 1 screening center per 4,800 square miles (3 million acres)

# Increasing Lung Cancer Screening for High Risk Smokers in a Frontier Population

## Research Question:

will provider and/or individual level interventions increase low dose computerized axial tomography (LDCT) lung cancer screening among high risk smokers living in western South Dakota?

## Project Goal:

To increase lung cancer screening rates by educating primary care providers and their clinic staff as well as community members in western South Dakota.

# Increasing Lung Cancer Screening for High Risk Smokers in a Frontier Population

- **Aim 1: Screening awareness**
  - Build on previous research to improve provider and individual awareness of LDCT lung cancer screening
    - Initial and follow-up surveys at baseline and 6 months
- **Aim 2: Evaluate the efficacy of two interventions with PCPs and community members to increase awareness of LDCTs**
  - Main outcome measure: number of LDCTs completed
- **Aim 3: Policy Symposium and Lung Health Forum**
  - Partnership with Georgetown University: Bette Jacobs, PhD
  - Engage community members, state and tribal leaders, primary care MDs
  - Develop sustainable, evidence-based, culturally- and regionally-appropriate practice and policy recommendations

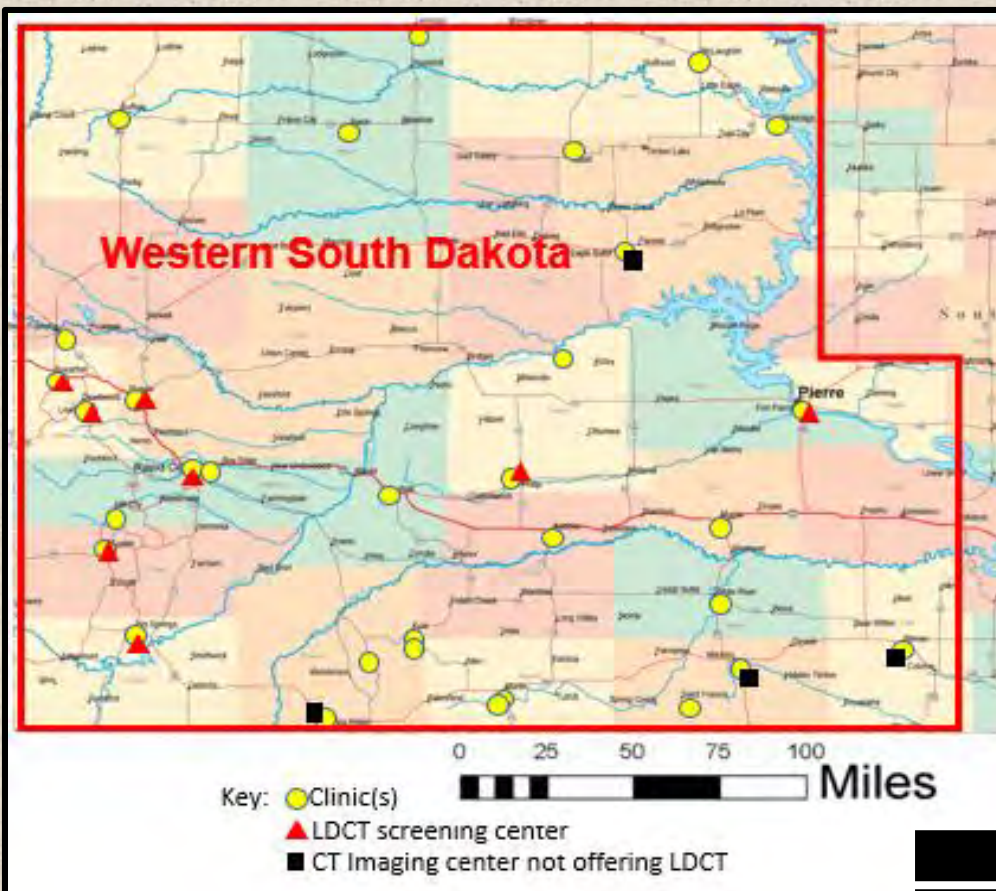
# Increasing Lung Cancer Screening for High Risk Smokers in a Frontier Population

Bristol-Myers Squibb Foundation - Funded February 2017

- **2 x 2 study design to evaluate provider (n=135) and individual level (n=1000) interventions**
- **Both interventions include education and introduction to the online resource**
- **Metric will be increase in screening LDCTs**
- **14,000 patients at risk in Western, SD**

**\*\*First WF Project to include all of western SD**





Challenge:  
Limited access  
to screening  
LDCT

2 X 2 Design				
Intervention:	Study Groups:			
	A	B	C	D
Provider	No*	Yes	No*	Yes
Individuals	No*	No*	Yes	Yes
*delayed intervention based on study findings				



# Education sessions

## **Provider Workshops/CME sessions**

Began September 2018

13 clinic sites completed

Provider accrual 95

Target goal: 135

## **Community Workshops/Education sessions**

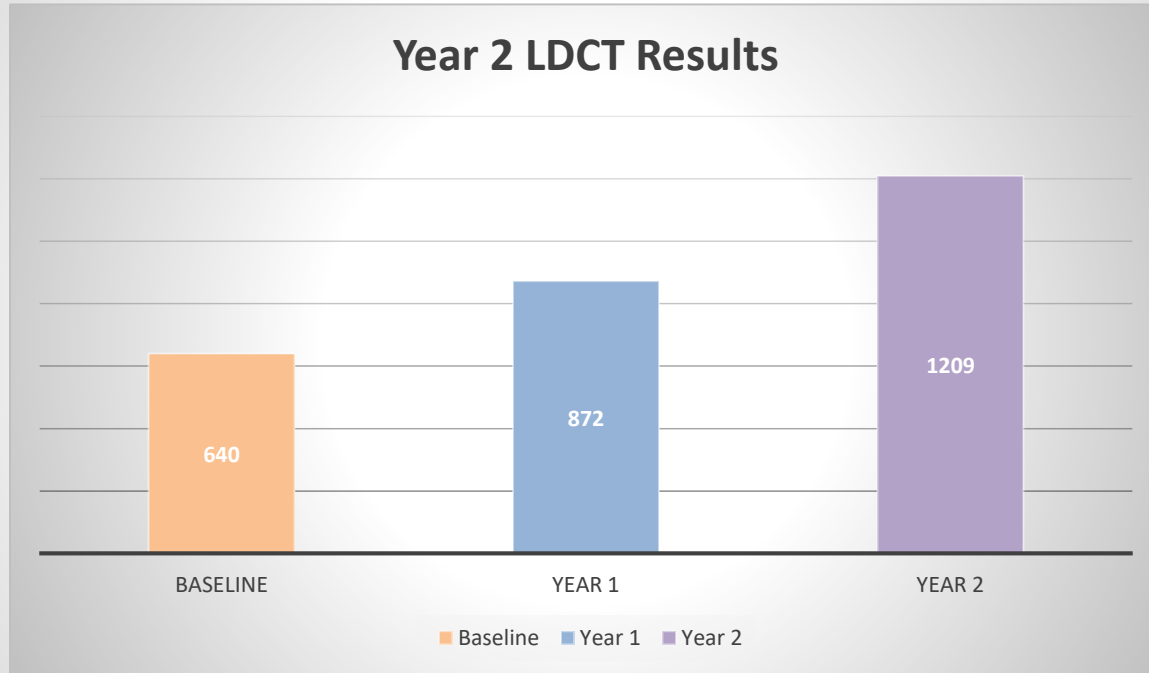
Began August 2018

460 participants

To date: 100 LDCT referrals have been obtained with 81 completed



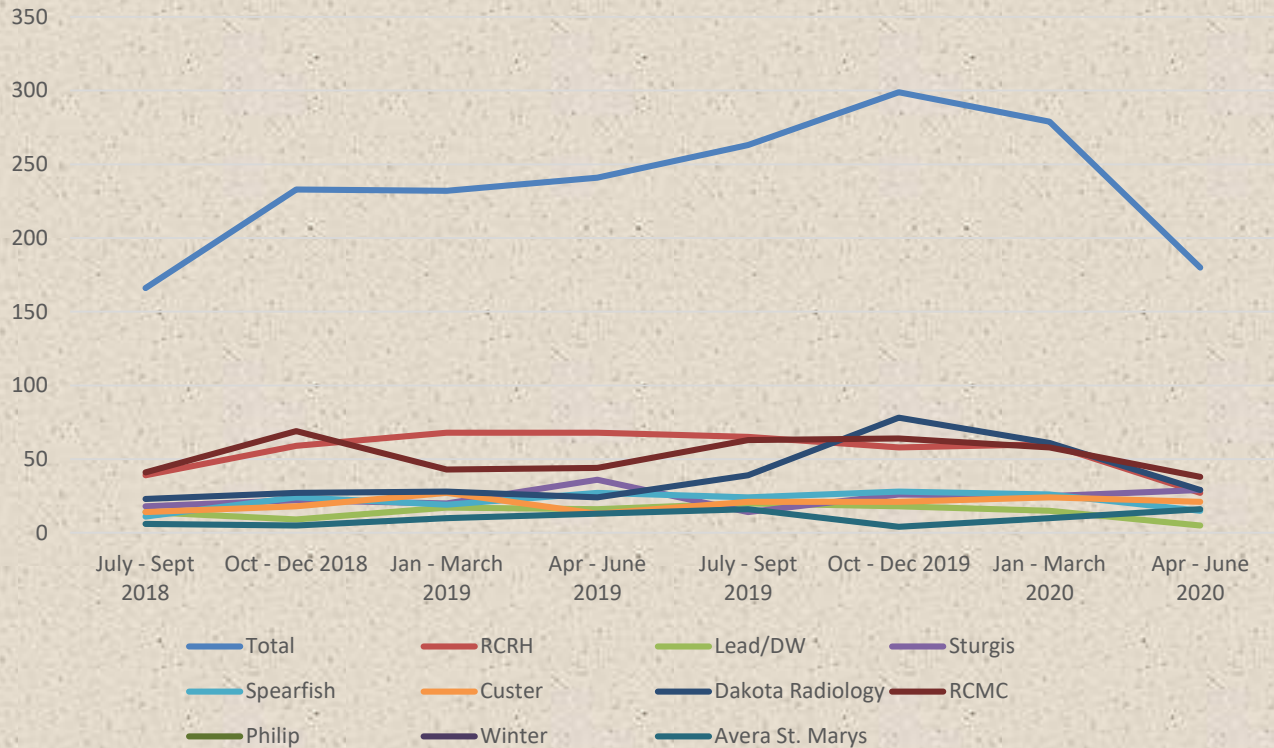
### Year 2 LDCT Results





# LDCTS BY SITE AND QUARTER

LDCT Totals Year 1 and Year 2



## Negative Impact of COVID





# OVERCOMING CHALLENGES

- Indian Health Service is not currently covering the cost nor providing LDCTs
  - Recent update: Rosebud IHS providing LDCTs
- Indian Health Service (IHS): “life and limb” policy
- COVID pandemic
- **Grant received from the Irving A. Hansen Memorial Foundation for 152K**
  - Will allow us to screen about 400 American Indians at no cost to the patient



# Education sessions





# OVERCOMING CHALLENGES



# Increasing Lung Cancer Screening for High Risk Smokers in a Frontier Population

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# Chicago Race/Gender Eligibility for Screening Cohort (CREST)

**Mary M. Pasquinelli, DNP, FNP-BC, APRN**

Nurse Practitioner: Pulmonary and Thoracic Medical Oncology

University of Illinois Hospital and Health Science System (UI Health)



Hokusai. Under the Wave off Kanagawa. 1826-1836. The Art Institute of Chicago.



# Walking Forward: Pathways to Sustainability

- **Community based participatory research (CBPR)**
- **Patient navigation: the foundation of Walking Forward**
- **Constant communication with staff and community**
- **Staff adapting and changing over time: “community signals”**
- **Community presence to nurture ongoing trust**
- **WF is a known entity: other programs approach us**
  - **WF community staff are tribal members living on the reservations**

# Walking Forward: Pathways to Sustainability

- **Extensive collaborations:**
  - **South Dakota Community**
  - **Academic Centers: Universities of Wisconsin/ Washington/South Dakota, Mayo Clinic, MGH/Harvard, NYU, Cooperative Groups**
  - **Political**
    - **SD Congressional Delegation, ASCO, ASTRO, ABS, NCI**
  - **Other: GPTLHB, BMSF, Irving A Hansen, Memorial Foundation, Pink Pony-Polo Ralph Lauren**
  - **Individuals: Minesh Mehta, Norm Coleman, Frank Govern  
Judth Kaur, Linda Burhansstipanov, Ashleigh Guadagnolo,  
Sunshine Dwojak, Katrina Armstrong, Bette Jacobs and many  
others**

# Walking Forward: Pathways to Sustainability

- Implementation science
- Absolute persistence
- Motivation to help the underserved
- **END RESULT: SUSTAINABLE PROGRAM THAT HAS GONE FROM 5 YEARS TO 22 YEARS**

## Through lessons learned

- Patience / time
- Essential that PI is part of the community/region
- Dedicated research time (funding)
- Challenges: workload primary care MDs
- Indian Health Service (IHS) is underfunded: **per capita funding for IHS in 2017= \$3,851, general population=\$10,224**

## Future Funding for LDCT Program

- **Goal: to extend lung health prevention research to enable the momentum to continue**
- **Significant progress, despite COVID**
- **Funding for community staff ends in August 2021**
- **BMSF continuation?**
- **Other foundations**
- **Annual budget to continue: \$150,000**

## **Walking Forward's Vision**

**To improve the quality of life for AI cancer patients from early detection, successful treatment and survivorship - including end of life care**

## **Walking Forward's Mission**

**This has been and will continue to be accomplished through access to screening, state of the art cancer treatments and clinical trials, and comprehensive patient navigation**

**Expansion into the entire Frontier population**



**Walking Forward Team**