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5

UNC Lineberger Cancer Network

PATIENT CENTERED CARE

April 5, 2023

Where the Rubber Meets the Road: Community-Inclusive Interventions to Achieve Equity in Cancer Care



Samuel Cykert, MD



Christlna Yongue, MPH, MCHES



6

OUR PRESENTER



Samuel Cykert, MD

Dr. Cykert is a Professor of Medicine at the University of North Carolina – Chapel Hill in the Division of General Internal Medicine and Clinical Epidemiology and was founding director for the Program on Health and Clinical Informatics. He graduated from Indiana University School of Medicine with Highest Distinction and did his Internal Medicine Residency and General Medicine Faculty Fellowship at UNC. He started his career as a solo practitioner in Alamance County and learned firsthand how real world issues led to variations in care. Combining his research training, his role as a founding member of the Greensboro Health Disparities Collaborative, and interest in health policy, Cykert has been heavily involved in projects that address cancer and chronic care management including the building of systems that address health care disparities. He has served as principal or co-principal investigator on several studies including the NCI-sponsored Accountability for Cancer Care through Undoing Racism and Equity system change intervention and the American Cancer Society-sponsored, "Lung Cancer Surgery: Decisions Against Life Saving Care – The Intervention". Dr. Cykert also led the North Carolina Collaborative in the Agency for Healthcare Research and Quality's "EvidenceNow" Project. The NC group engaged 219 primary care practices caring for over 600,000 adult patients who achieved significant cardiovascular disease risk reductions especially among rural Black patients in the "Stroke Belt" region of the state. He currently serves as a co-chair for the UNC-Lineberger Cancer Center's Equity Council.

7

OUR PRESENTER

8

**OUR PRESENTER**

- 3.** Has the joy of teaching UNC and other healthcare-related students for 3 decades

9

**OUR PRESENTER**

- 3.** Has the joy of teaching UNC and other healthcare-related students for 3 decades
- 2.** Part of the Greensboro Health Disparities Collaborative for 20 years

10

**OUR PRESENTER**

1. Have a one year old grandchild named Samuel
2. Part of the Greensboro Health Disparities Collaborative for 20 years
3. Has the joy of teaching UNC and other healthcare-related students for 3 decades

11

**OUR PRESENTER**



**Christina Yongue,**  
MPH, MCHES

Christina Yongue, MPH, has managed a NIH research study which eliminated a racial disparity in cancer care through a community-based participatory research approach. She is currently the Director of Undergraduate Studies, and an Associate Professor in the Department of Public Health Education at the University of North Carolina at Greensboro. She is the Co-Chair for the Stakeholder Advisory Board for the ACURE4Moms research study.

12

**OUR PRESENTER**

13

**OUR PRESENTER**

3. She began her collegiate journey at Florida A & M University, where she studied pharmacy.

14

**OUR PRESENTER**

3. She began her collegiate journey at Florida A & M University, where she studied pharmacy.
2. One of her two daughters is a cheerleader, and the other is a pianist.

15

**OUR PRESENTER**

3. She began her collegiate journey at Florida A & M University, where she studied pharmacy.
2. One of her two daughters is a cheerleader, and the other is a pianist.
1. One of her favorite memories with her mother was dancing with a Junkanoo band in the Bahamas for her mother's birthday.

16



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**UNC** LINEBERGER COMPREHENSIVE  
CANCER CENTER  
UNC Lineberger Cancer Network

**"ACCURE" stands for Accountability for Cancer Care through Undoing Racism and Equity**

True **A**

False **B**

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17

**DISCLOSURES**

This activity has been planned and implemented under the sole supervision of the Course Director, William A. Wood, MD, MPH, in association with the UNC Office of Continuing Professional Development (CPD). The course director and CPD staff have no relevant financial relationships with ineligible companies as defined by the ACCME.

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18

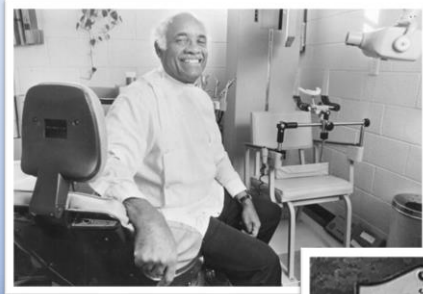
The image shows a Poll Everywhere interface. At the top, it displays the UNC Lineberger Comprehensive Cancer Center logo and the text "UNC Lineberger Cancer Network". Below this, the poll question is: **"ACCURE" stands for Accountability for Cancer Care through Undoing Racism and Equity**. The interface includes a vertical axis with "True" at the top and "False" at the bottom. A blue line starts at the top of the axis and extends horizontally across the chart area, indicating that all responses are "True". At the bottom, it says "Powered by Poll Everywhere" and provides instructions: "Start the presentation to see live content. For screen share software, share the entire screen. Get help at [pollev.com/app](https://pollev.com/app)".

19

The image is a title slide with a blue gradient background. The main title is ***Where the Rubber Meets the Road:  
Community-Inclusive Interventions to Achieve  
Equity in Cancer Care***. Below the title, the authors are listed as **Christina Yongue and Samuel Cykert**.

20

# The case to integrate hospitals nationwide began in Greensboro, NC



21

CY

21

## DEFINING The PROBLEM & Building Our ASSETS

### Defining the Problem



### Beginning the Collaborative Effort



CY

22

# Greensboro Health Disparities Collaborative



Our mission is to establish structures and processes that respond to, empower, and facilitate communities in defining and resolving issues related to disparities in health.



CY

23

## GHDC's Anti-Racism Framework

- Social Economic Status alone does not explain racial inequity.
- **Racism** = Race Prejudice + Social and Institutional Power
- **Institutional racism** is a process of oppression, unconscious or not, functioning as a system of structuring opportunity based on race, that unfairly disadvantages some, unfairly advantages others, and undermines the potential of the whole society.
- If Racism was created, then it can be undone.

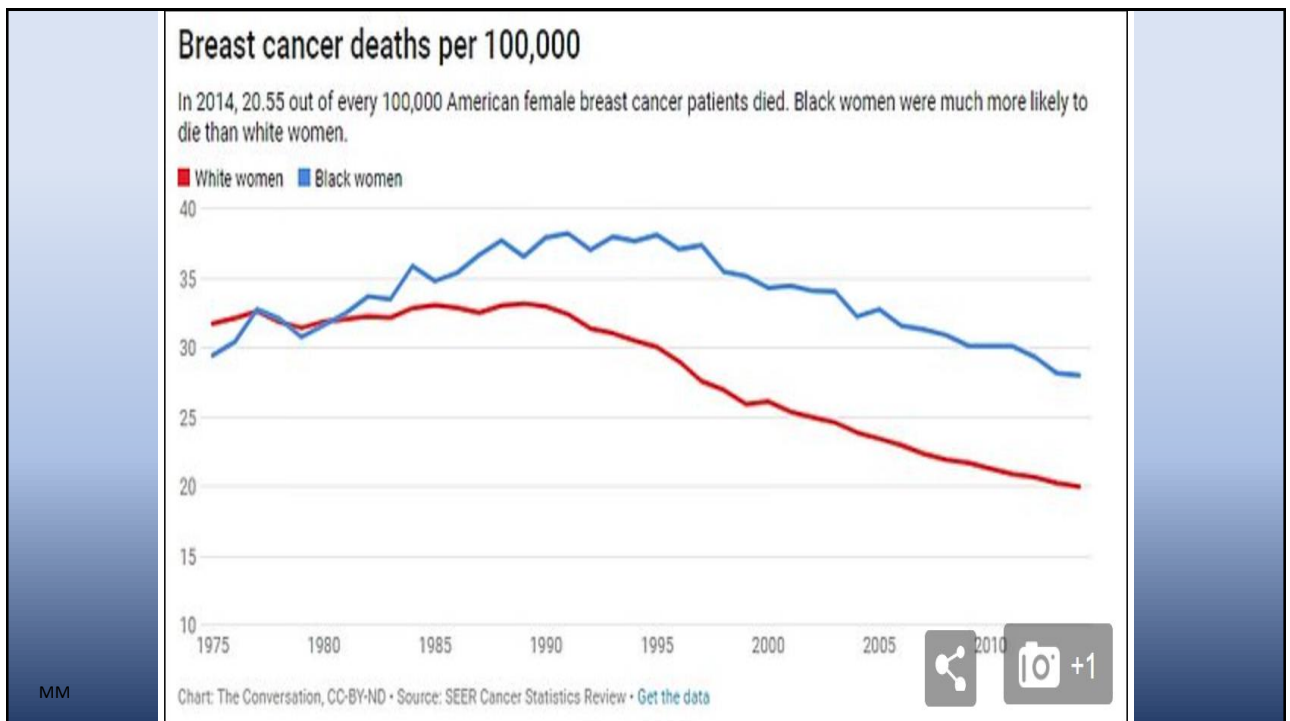
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24

# Early Deliberations

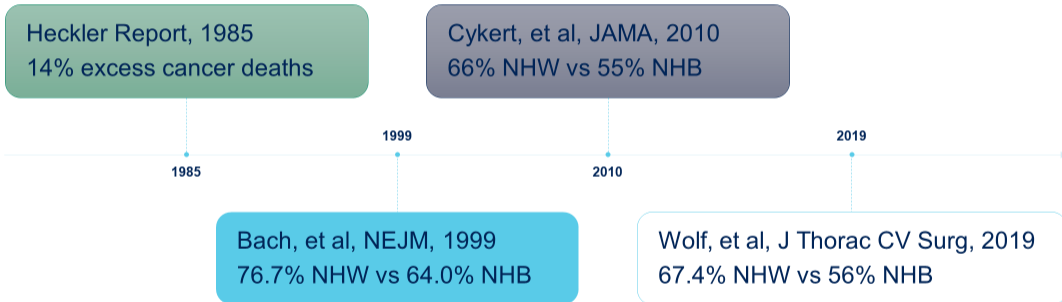
- Undoing racism – the focus on system change
- Stories - Real people who experienced cancer and barriers in care
- Choosing the disease target for initial intervention

25



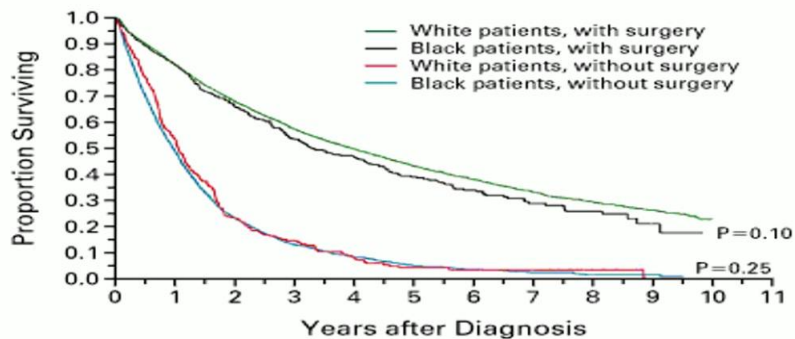
26

## Racial disparities in lung cancer surgery are well described and have been persistent for 20+ years




27

### Survival of Medicare Beneficiaries 65 Years of Age or Older Who Were Given a Diagnosis of Stage I or II Non-Small-Cell Lung Cancer between 1985 and 1993, According to Treatment and Race



	0	1	2	3	4	5	6	7	8	9	10	11
White, surgery	7763	4495	2255	1069	407	12						
Black, surgery	550	301	145	69	30	0						
White, no surgery	2361	458	110	30	6	0						
Black, no surgery	310	60	14	2	1	0						


28

 LINEBERGER COMPREHENSIVE  
CANCER CENTER  
UNC Lineberger Cancer Network

## As Breast Cancer mortality falls, the excess mortality for Black patients is also falling.

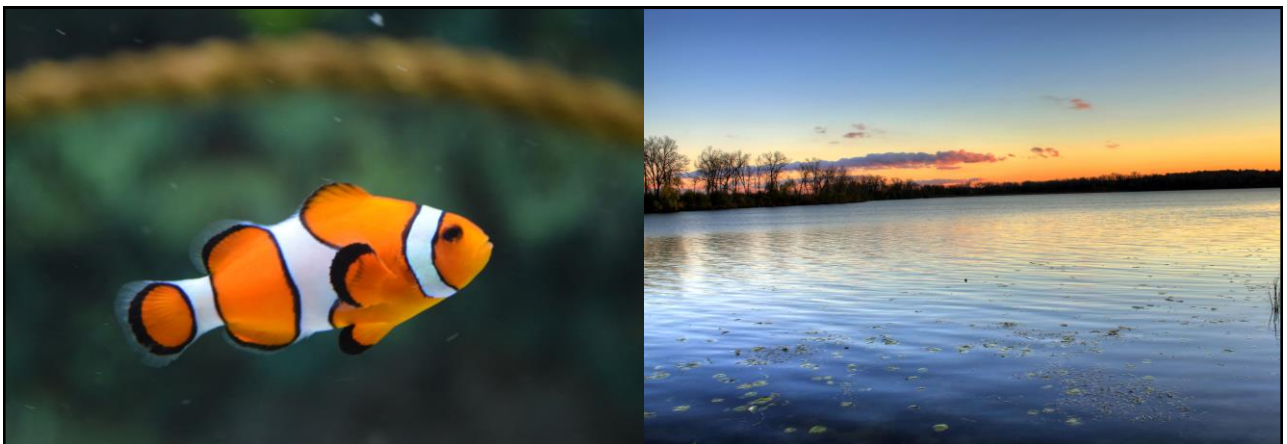
True

False

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29



If racism was constructed, it can be undone. It can be undone, if people understand when it was constructed, why it was constructed, how it functions, and how it is maintained.

Ron Chisom  
Founder, Executive Director  
People's institute for survival and beyond

CY

30

## The GHDC – through – ACCURE Used a Racial Equity Analysis and Solution

- The solution must be racial equity centered, system-level and include:
  - transparency (in real time that can effect treatment)
  - accountability
  - enhanced communication

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31

## System-Level Interventions – To address the community analysis

- (1) A real time warning system derived from electronic health records (Real Time Transparency)
  - **missed appointments**
  - **anticipated milestones in care not achieved**

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32



## System-level interventions

(2) Feedback to clinical teams regarding completion of cancer treatment according to race (Accountability) – THIS IS STANDARD QI, EXCEPT BROKEN DOWN BY RACE

- This approach uses standard quality improvement techniques of audit and feedback
- By presenting data according to race, any disparities in treatments or outcomes must be acknowledged and addressed
- Presented during Healthcare Equity Education and Training (HEET) Sessions

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33

## System-Level Interventions


(3) The ACCURE navigator (Enhanced Communication – TWO WAY COMMUNICATION)

- understanding a structural racism and barriers that are more likely to affect people of color
- role play in clinical scenarios
- note the role of physician champions

NAVIGATION == ENHANCED COMMUNICATION!!!


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34

  
UNC Lineberger Cancer Network

## System level interventions work better because:

- A. Institutional bias calls for widespread solutions
- B. The problem is caused by a few bad apples
- C. Disparities are multi-factorial so a transparent signal is needed
- D. A and C
- E. All of the above

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35

## Analysis

- Primary Outcome = **“Treatment Complete”**
  - 1) Lung Cancer
    - a. Surgery or completed stereotactic radiation
    - b. If chemo started, then at least 3 completed cycles received
  - 2) Breast Cancer
    - a. Surgery must be done
    - b. If breast conserving surgery, radiation must be started and
    - c. If chemo started, then at least 4 completed cycles received

36

## Intervention Cohort

- Recruitment
  - Patients identified using appointment data prior to initial visit at surgery, pulmonary, oncology, or multidisciplinary clinics at participating sites

37

## The GHDC and Project Management optimized recruitment

- Prior to Recruitment of Participants into the RCT of ACCURE
  - Pilot Testing with Sisters Network Greensboro
    - **Centering Black Women survivors**
  - Collaboration with Healthcare Administration
    - Communication and Workflow analysis

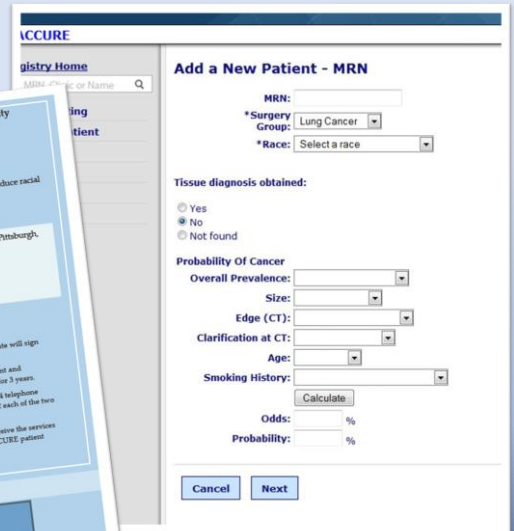
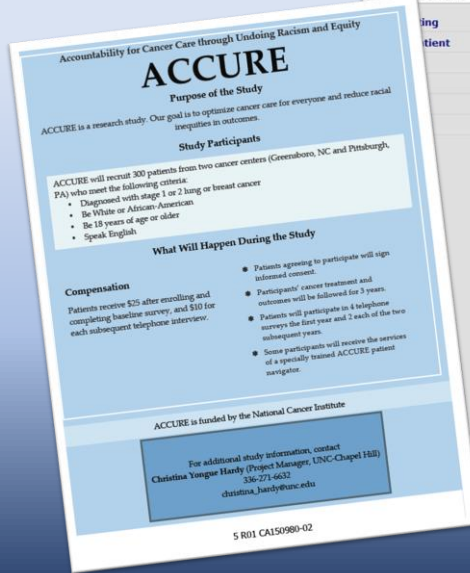


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38

## Prior to Recruitment of Participants into the RCT of ACCURE

- Training Nurse Navigators
- Identifying participants and strategizing with informed consent conversations (SNI)
  - 1-page informational sheet on ACCURE ([Enhanced Communication](#))



CY

39

## The GHDC and Project Management optimized recruitment

- **During** Recruitment of Participants into the RCT of ACCURE
  - Racial Equity Lens with Greensboro Health Disparities' Collaborative
    - Centered community perspectives for accountability



CY

40

## ACCURE's Recruitment

	Eligible for ACCURE between 2012-2018	Refused Consent	Proposed Goal*	Actual Enrolled	Percent Enrolled (from who was eligible)	Withdrew before study completed
<b>Black Patients</b>	132	10	108	<b>122</b>	92.4%	10
<b>White Patients</b>	265	60	162	<b>205</b>	77%	15

\* Cykert et. al. (2019)

41

## Comparison Groups

- Retrospective control group 2007-2012
- Concurrent control group (for secular trends) 2014-2015

42

ACCURE: A System-Based Intervention To Address Disparities in  
Treatment of Early Stage  
**Lung and Breast**  
Cancer

*Funded by National Cancer Institute - 5 R01  
CA150980-04*

Samuel Cykert, M.D., Eugenia Eng, Dr.P.H., Matthew A. Manning, M.D.,  
Linda B. Robertson, Ph.D., Dwight E. Heron, M.D., Nora S. Jones, M.A.,  
Jennifer C. Schaal, M.D., Alexandra Lightfoot, Ed.D., Haibo Zhou, Ph.D.,  
Christina Yongue, M.P.H., MCHES, Ziya Gizlice, Ph.D.

<https://doi.org/10.1016/j.jnma.2019.03.001>

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43

## Two Participating Centers

- UPMC Hillman Cancer Center, the University of Pittsburgh School of Medicine
- Cone Health Cancer Center

44

## Results – Treatment Completion

Cohort	White	African-American
Baseline*	87.3	79.8
Intervention	89.5	88.4
2014-2015*	90.1	83.1

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45

### Results from Multivariate Logistic Regression Analyses of Treatment Completions.

Variable	Multivariate Analysis Results				
	Beta	Odds Ratio	Lower 95% C.I.	Upper 95% C.I.	p-Value
<b>Race and Study Group*</b>					
<b>Black-Intervention</b>	-0.0976	<b>0.907</b>	<b>0.497</b>	<b>1.656</b>	<b>0.7508</b>
<b>Black-Retrospective</b>	-0.8150	<b>0.443</b>	<b>0.351</b>	<b>0.558</b>	<b>&lt;.0001</b>
<b>Black-Concurrent</b>	-0.5358	<b>0.585</b>	<b>0.420</b>	<b>0.815</b>	<b>0.0015</b>
<b>White-Intervention</b>	-0.1009	0.904	0.555	1.472	0.6850
<b>Black-Intervention†</b>	0.3327	1.395	0.774	2.514	0.2683

\*White concurrent cohort is the referent group.

†White retrospective cohort is the referent group.

46

## A system-based intervention to reduce Black-White disparities in the treatment of early stage **lung** cancer

**Citation:**

Cykert S, Eng E, Walker P, Manning MA, Robertson LB, Arya R, Jones NS, Heron DE.  
**Cancer Med.** 2019 Mar;8(3):1095-1102. doi: 10.1002/cam4.2005. Epub 2019 Feb 4.



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47

## Five Participating Centers

- Lineberger Cancer Center, The University of North Carolina
- Leo Jenkins Cancer Center, East Carolina University and the Vidant Health System
- Palmetto Health Cancer Center affiliated with the University of South Carolina SOM
- UPMC Hillman Cancer Center, the University of Pittsburgh School of Medicine
- Cone Health Cancer Center

48



## LUNG CANCER Results – Within Group Comparisons: Retrospective Control Only

- Rate of Lung Cancer Surgery or Radiation for Cure (unadjusted)
  - Black Patients      69.0
  - White Patients      77.8

$p < 0.001$
  
- Odds Ratio (95% CI) of **Black Patients Undergoing Lung Cancer Surgery or Radiation for Cure** controlling for age, Charlson Score, gender, income, clinical stage and study site:
  - OR 0.66 (0.51 – 0.85)

$p = 0.001$

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49

## Results – Within Group Comparisons: Intervention Only

- Rate of Lung Cancer Surgery or Radiation for Cure (unadjusted)
  - Black Patients      96.5
  - White Patients      95.1

$p = 0.56$
  
- Odds Ratio (95% CI) of **Black Patients Undergoing Lung Cancer Surgery or Radiation for Cure** controlling for age, Charlson Score, gender, income, clinical stage and study site:
  - OR 2.05 (0.41 – 10.4)

$p = 0.39$

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50

# Overall **survival** from a multi-institutional trial to eliminate racial disparities in the treatment of early stage **breast and lung** cancer

Denver, Colorado (Virtual)



Christina Yongue, MPH, MCHES et al.

## UNADJUSTED SURVIVAL DATA SUGGEST TREATMENT COMPLETION IS CORRELATED WITH SURVIVAL EQUITY

SC

51

## Results

Primary Site	Race	Years	Number of Patients	5 Yr Observed Survival	p-value
Breast	White	2007-2011	1279	91.36%	
		2013-2015	871	93.92%	0.026
	Black	2007-2011	362	89.44%	
		2013-2015	282	93.96%	0.044
Lung	White	2007-2011	304	43.39%	
		2013-2015	206	55.64%	0.006
	Black	2007-2011	71	36.62%	
		2013-2015	54	53.54%	0.056



52

# Results

Primary Site	Race	Years	Number of Patients	5 Yr Observed Survival	p-value
Breast	White	2007-2011	1279	91.36%	
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		2013-2015	206	55.64%	0.006
	Black	2007-2011	71	36.62%	
		2013-2015	54	53.54%	0.056



53

## Effect of an antiracism intervention on racial disparities in time to lung cancer surgery. DOI: 10.1200/JCO.21.01745 Journal of Clinical Oncology 2022.

**TABLE 2.** Chi-Square and Log-Binomial Model to Assess Timely Lung Cancer Surgery by Race According to the Study Group

Study Group	All	Black	White	P <sup>a</sup>	RR (95% CI)	P <sup>b</sup>
Retrospective						
Median time to surgery, days (IQR)	34 (10-59)	43 (21-70)	32 (10-55)	< .01	—	—
Surgery in < 56 days	72.6%	<b>58.7%</b>	<b>75.0%</b>	< .01	<b>0.76</b> (0.69 to 0.85)	< .01
Concurrent						
Median time to surgery, days (IQR)	33 (10-59)	35 (10-65)	33 (10-57)	.83	—	—
Surgery in < 56 days	72.2%	64.9%	73.2%	.29	0.91 (0.73 to 1.13)	.40
Intervention						
Median time to surgery, days (IQR)	23 (10-41)	28 (10-43)	21 (10-38)	.33	—	—
Surgery in < 56 days	85.9%	87.1%	85.4%	.13	1.02 (0.80 to 1.15)	.79


NOTE. Adjusted for age, sex, race, Charlson score, median household income, site of care, and clinical stage at diagnosis. Values in bold are statistically significant.

Abbreviations: IQR, interquartile range; RR, risk ratio.

<sup>a</sup>P value for comparisons of median days to surgery between Black and White patients was calculated using the Mann-Whitney test, and P value for comparisons between the proportion of Black patients and White patients in each study arm receiving surgery within 56 days was calculated using the chi-square test.

<sup>b</sup>P value for comparing the adjusted risk of surgery within 56 days between Black patients and White patients (referent group) in each study arm was calculated using log-binomial regression.

54




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## The ACCURE Intervention:

- A. Took advantage of community partnership and insights
- B. Reduces disparities and improves treatment for all
- C. Points out the importance of measuring care particularly among disadvantaged groups
- D. A and B
- E. All of the above

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55

## A Moral to the Story

To remedy systemic, institutional-level racism:

1. ***WORK WITH AFFECTED COMMUNITIES THROUGH A SYSTEMIC LEVEL RACISM LENS TO DETERMINE APPROPRIATE OUTCOME MEASURES AND INTERVENTIONS***
2. ***MUST MEASURE OUTCOMES ACCORDING TO RACE (OR OTHER MARGINALIZED POPULATION IDENTITY CATEGORY)***
3. ***APPLY INTERVENTIONS (IN REAL TIME) THAT INCLUDE TRANSPARENCY AND ACCOUNTABILITY AND EXCELLENT COMMUNICATION***
4. ***WITH A SYSTEM-BASED INTERVENTION ADVISED BY THE COMMUNITY, CARE IMPROVED FOR EVERYONE!***

56

## Practical Implementation Issues

1. The real time registry – upfront cost of programming
  - For early stage breast and lung cancer, one full time programmer for 9 months
  - Best care protocols
  - Stakeholders and milestones
2. Navigation
  - Who is the navigator?
  - Who gets navigation?
  - Racial Equity Training?

57

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## Questions / Comments?

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58

THANK YOU!

# University Cancer Research Fund



## UNC Lineberger Cancer Network

### The Telehealth Team

**Tim Poe, Director**

**Veneranda Obure, Technology Support Specialist**  
**Jon Powell, PhD, Continuing Education Specialist**  
**Oliver Marth, Technology Support Technician**

**Andrew Dodgson, DPT, Continuing Education Specialist**  
**Nadja Brown, Interim Administrative Support Specialist**  
**Patrick Muscarella, Technology Support Technician**

59

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60

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61

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62