

Enhancing Equity in Clinical Research: Lessons from Community Oncology Engagement Efforts

South Carolina Oncology Society
Annual Meeting 6 August 2022

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Tennessee Oncology



Disclosure of Conflicts of Interest

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- U54 CA0914010 (NCI)
- 09/01/2021-08/31/2025
- Meharry-Vanderbilt-TSU Cancer Partnership

- **Honorarium:** Tennessee Oncology Practice Society

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Disclaimer



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U54 Leadership

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Vanderbilt Ingram Cancer Center

CTRC Leadership

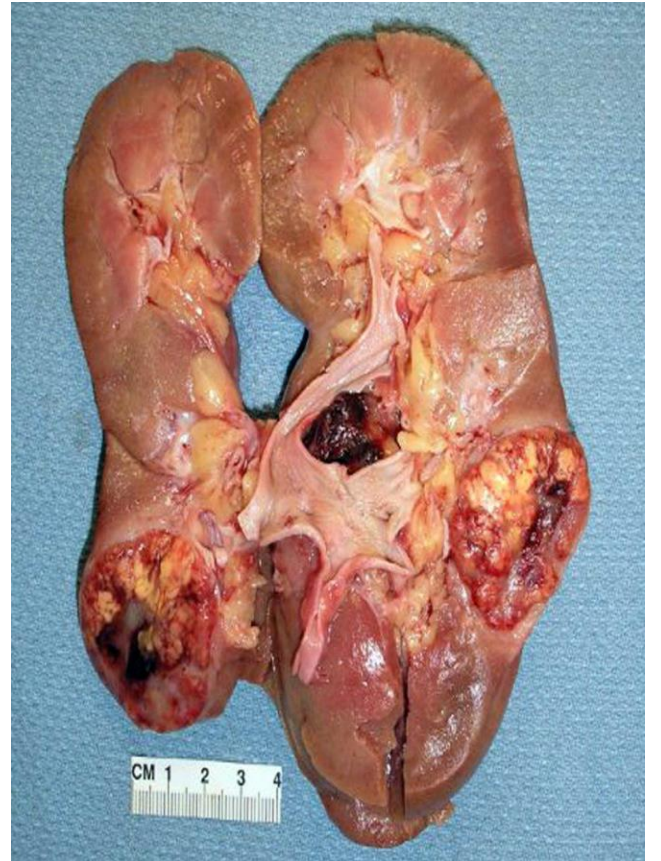
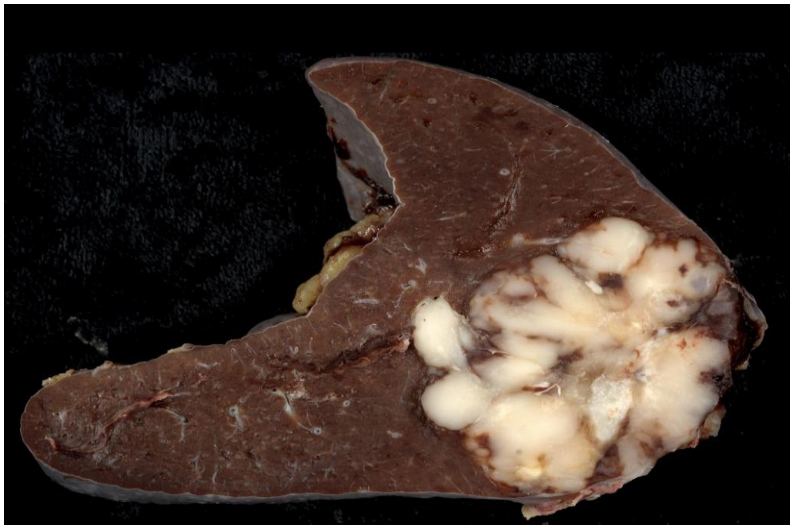
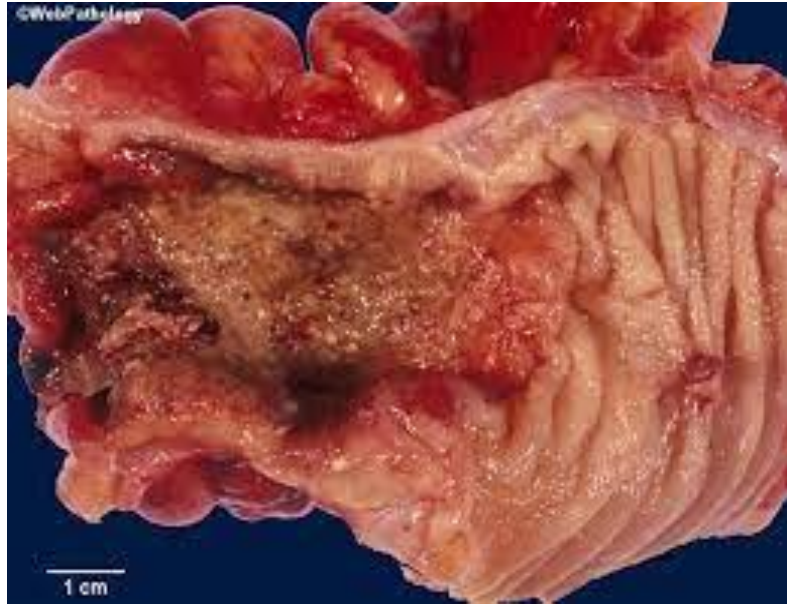
Ben Park, MD, PhD
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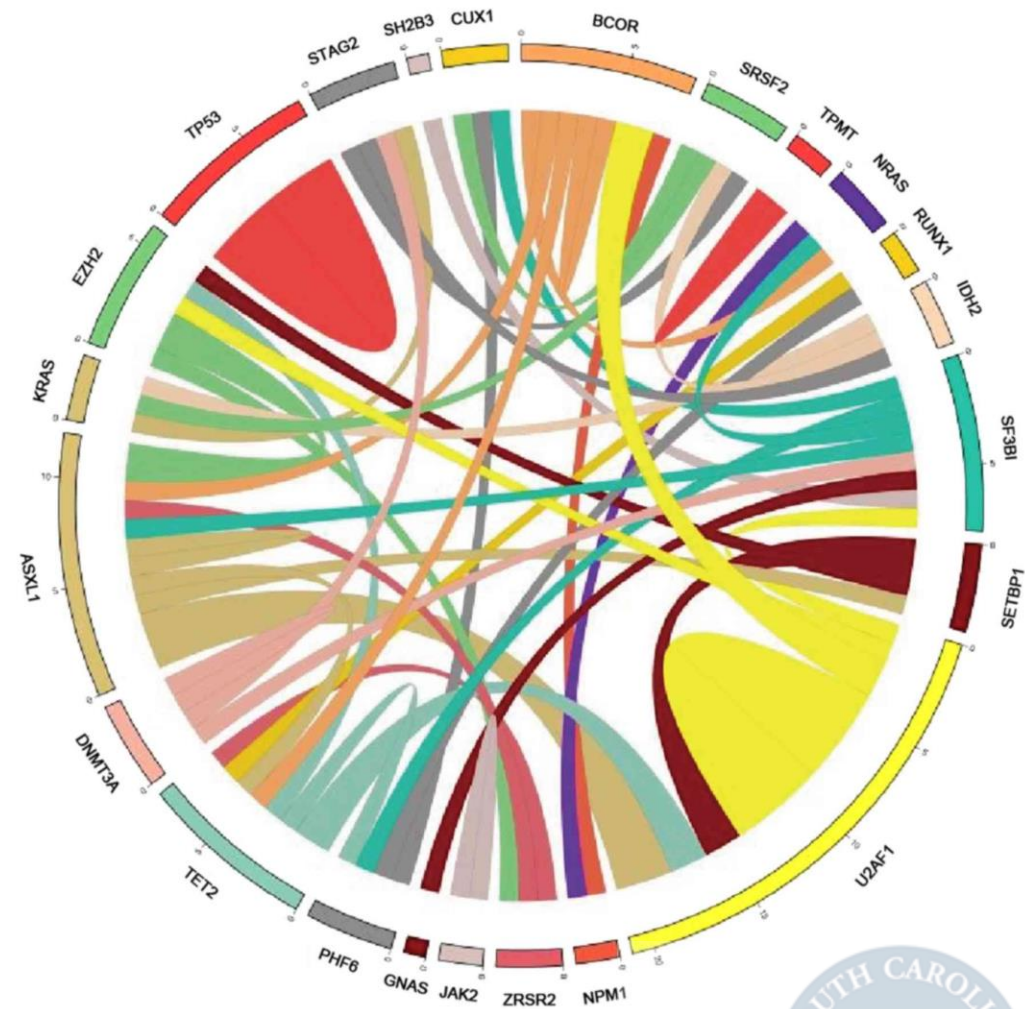
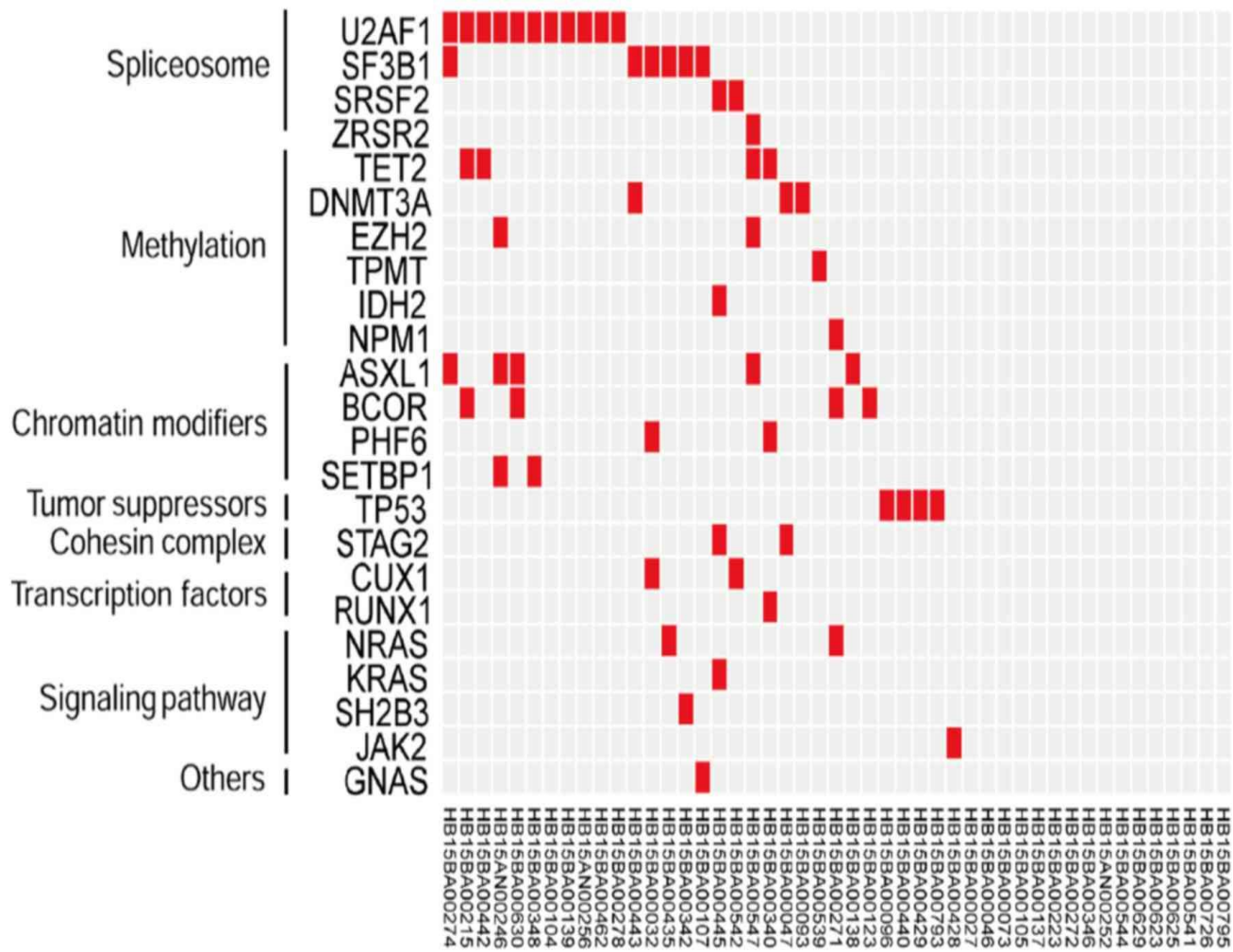
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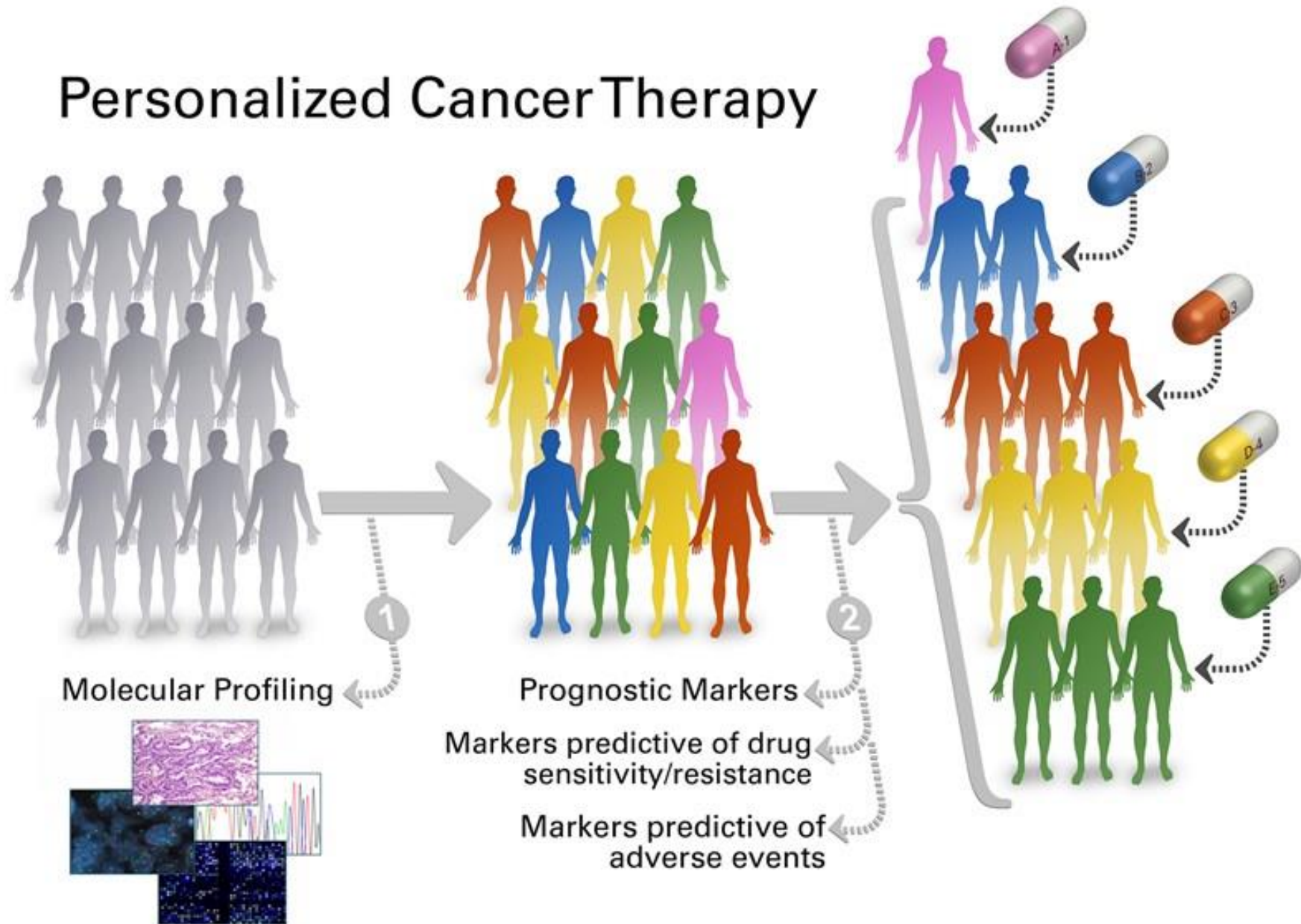
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1





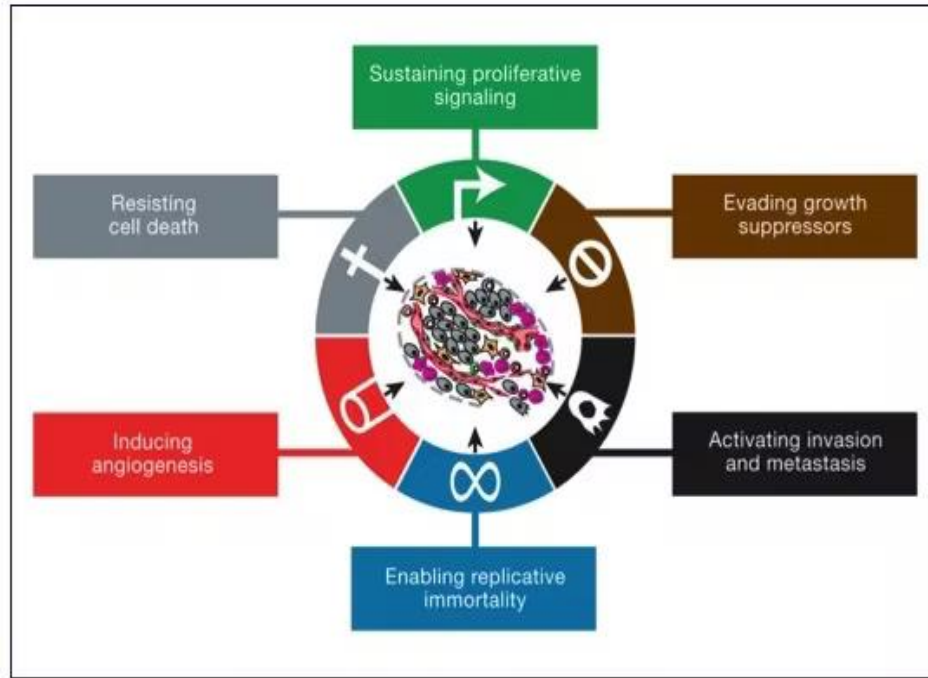
Personalized Cancer Therapy





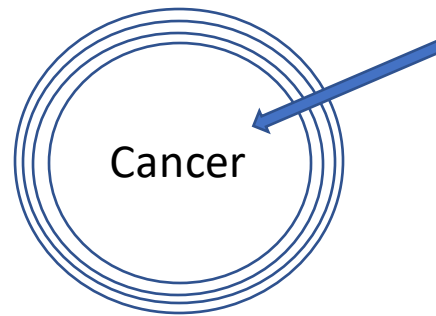
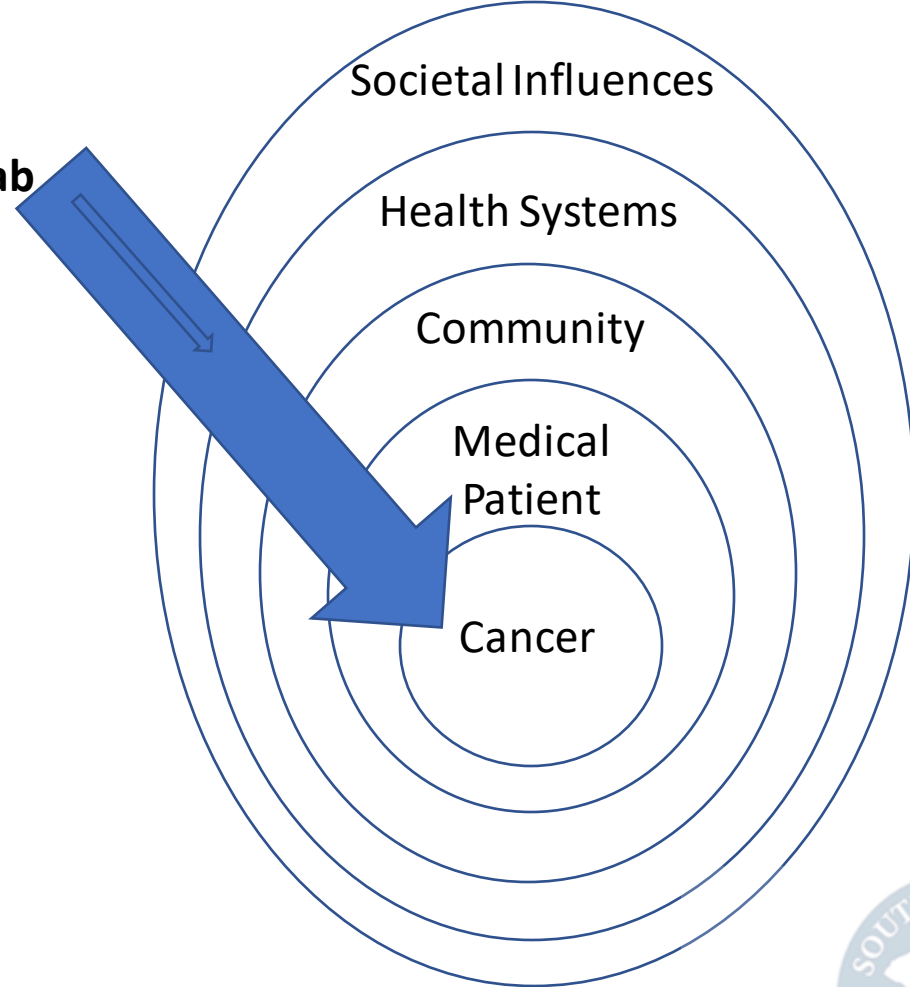
Disease vs. Patient

CANCER MODEL



PATIENT MODEL

CRT +
Durvalumab



CRT +
Durvalumab



Learning Objectives

- **What is Equity? Why does it matter? What is our current record?**
- What has changed? Are we prepared to change?
- Share lessons on building equity into clinical oncology research.
- Can equity in research translate to equity in practice?



Why Does Health Equity Matter?

- Values: Justice, Solidarity, Integrity, Compassion
- Duty: Hippocratic Oath, Service to All



Why does Health Equity Research Matter?



63 y/o black female (she/her/hers)

New metastatic NSCLC adenocarcinoma.
50 pack year smoking history (no LDCT screening)
ECOG2, CKD2, HTN, COPD

FH: sarcoidosis

NGS: No current molecular targets, PDL1 70%

Patient interested in immunotherapy and wants to know data supporting use

What do you tell her?



Immunotherapy Trial Representation

Tumor Type	Clinical Trial and Treatment Agent	Trial Design and Population	Sample Size (N)	Racial Composition (% , N)*			
				Caucasian	Black or African American	Asian	Other
Melanoma	CheckMate 067 ³⁵ Nivolumab +/- ipilimumab	Global phase III, previously untreated	945	97.5%	0%	1.1%	1.5%
				921	0	10	14
	CheckMate 037 ³⁶ Nivolumab	Global phase III, previously treated	405	98.3%	0.7%	0.5%	0.5%
				398	3	2	2
Squamous cell carcinoma of the head and neck	CheckMate 141 ³⁷ Nivolumab	Global phase III, previously treated	361	83.1%	3.6%	11.9%	1.4%
				300	13	43	5
Non-small cell lung cancer	CheckMate 057 ³⁸ (non-squamous) Nivolumab	Global phase III, previously treated	582	92%	3%	3%	3%
				533	16	17	16
				KEYNOTE 010 ³⁹ Pembrolizumab	Global phase II/III, previously treated	344	72%
246	13	73	5				
	OAK Trial ⁴⁰ Atezolizumab	Global phase III previously treated	850	70%	2%	21%	7%
				598	16	180	56
Renal cell carcinoma (clear cell)	CheckMate 025 ⁴¹ Nivolumab	Global phase III, previously treated	821	88%	1%	9%	3%
				720	5	74	22
Urothelial carcinoma	IMvigor211 ⁴² Atezolizumab	Global phase III, previously treated	931	72.1%	0.3%	12.7%	14.8%
				671	3	118	138
Gastric and gastroesophageal junction cancer (PD-L1+)	KEYNOTE 059 ⁴³ Pembrolizumab	Global phase II, previously treated	259	77.2%	1.9%	15.8%	5.0%
				200	5	41	13

*General U.S. population racial composition: 76.6% white, 13.4% black or African American, 5.8% Asian, 18.1% Hispanic or Latino.



Why does Health Equity Research Matter?



43 y/o black male (he/him/his)

New metastatic colon cancer

No significant PMH, works out, cares about fitness

FH: Colon Cancer in Mother 60s deceased

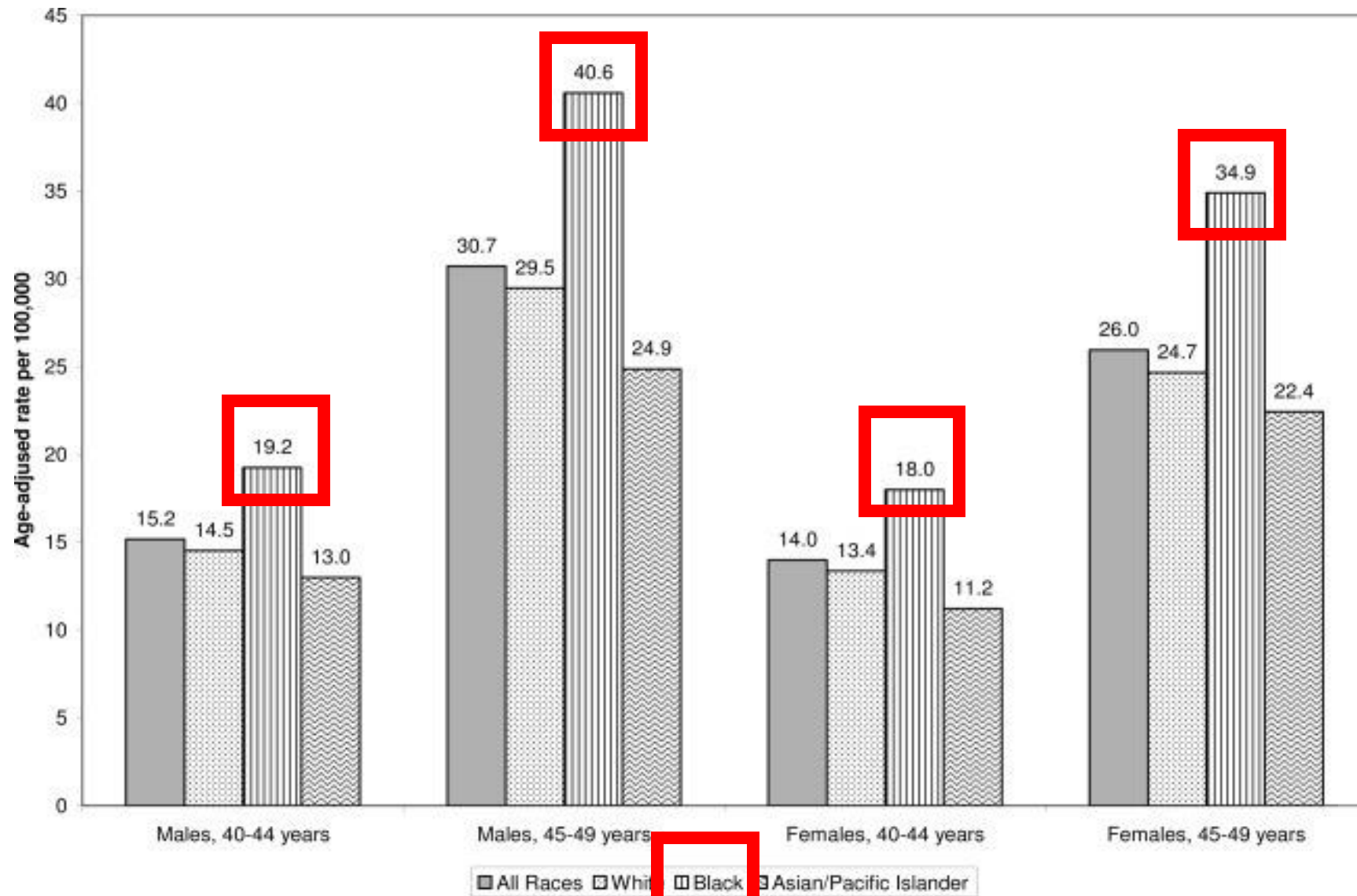
Patient is devastated.

Asks how this could have happened to him?

What do you tell him?



Colorectal cancer in U.S. adults younger than 50 years of age, 1998–2001





Updated Colorectal Cancer (CRC) Screening Recommendations 2021

- Average Risk Age 45-49 (Category B)
- Racially Focused Recommendations: NONE

Rationale for Expanding Screening Guidelines

Incidence has always been high among young Blacks

➔ Now increasing in young Whites and Hispanics/Latinos

Insufficient empirical evidence on benefit/harm of earlier CRC screening in Blacks

NCI CISNET modeling does not support different screening strategies by race



Why does Health Equity Research Matter?



39 y/o transgender Latina (she/her/hers)

PMH: Transitioned with gender affirming surgery and hormones ~10yrs ago, asthma, T2DM

FH: TNBC Mother Age 65 (dx 2mo ago)

Interested in breast cancer screening given her mother's recent diagnosis.
Wants to know if USPSTF and NCCN guidelines include her?
Wondering if her chance of BRCA1/2 mutation is greater than white women?

What do you tell her?



Transgender Patient Data*

Extrapolated risk from cisgender women HRT studies

- Gooren et al (2013) Incidence Rate = 4.1 per 100,000py TW, 170 per 100,000py CW
- Brown and Jones (2015) Incidence Ratio = 0.7 (95% CI 0.03, 5.57) vs. CM

Institutional Best Practices

- Fenway Health
- UCSF Center for Excellence for Transgender Health
- Endocrine Society Clinical Practice Guidelines

LatinX and Non-White Hispanic Data**

- Lower BC incidence, but younger age, more TNBC
- BRCA1/2 pathogenic allele frequency may be higher
 - Regional BRCA 1/2 variants
 - More VUS due to incompletely understood
- NCCN eligible for BRCA 1/2 testing
 - ~10% NHW
 - ~25% LatinX

*Parikh et al. *RadioGraphics*. 2019

** Herzog JS, et al. *Nature*. 2021

**Weitzel et al. *J. Am. Soc. Clin. Oncol*. 2013



Why Does Health Equity Research Matter?

- Values: Justice, Solidarity, Integrity, Compassion
- Duty: Hippocratic Oath, Service to All
- Practice: Professionalism, Informed Shared Decision Making
- Performance: Standards, Safety, Patient Experience, **Outcomes**



Equal Treatment = Equal Outcome

Odom BD et al. Active surveillance for low-risk prostate cancer in African American men: a multi-institutional experience. *Urology*. 2014

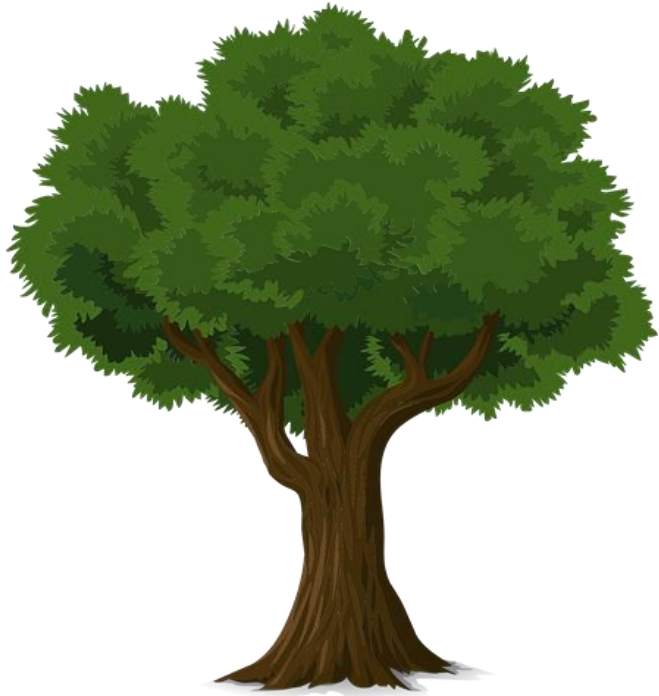
Spratt DE et al. Individual patient data analysis of randomized clinical trials: impact of Black race on castration-resistant prostate cancer outcomes. *Eur Urol Focus*. 2016

Dess RT et al. Association of Black Race with prostate cancer-specific and other-cause mortality. *JAMA Oncol*. 2019

George DJ et al. A prospective trial of abiraterone acetate plus prednisone in Black and White men with metastatic castrate-resistant prostate cancer. *Cancer*. 2021

Individual Experiment

Clinical Equipoise



Totality of Clinical Research

Steady and Clear Progress



Learning Objectives

- **What is Equity? Why does it matter? What is our current record?**
- What has changed? Are we prepared to change?
- Share lessons on building equity into clinical oncology research.
- Can equity in research translate to equity in practice?



What is Equity?

DISPARITY



???

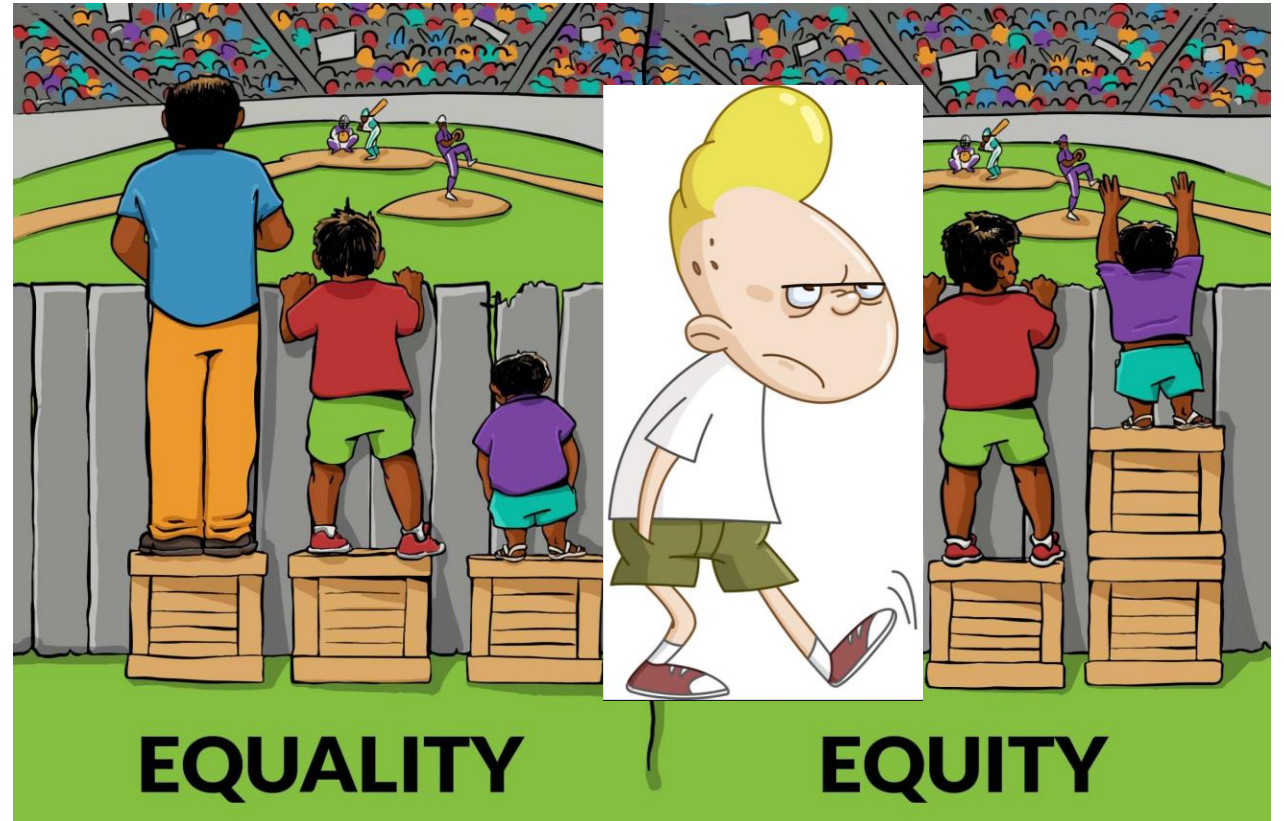
Health *Equity*

DISPARITY

WHO:

[Health] Equity is the **absence of unfair, avoidable or remediable differences** [in health] among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation).

“Primum Non Nocere”

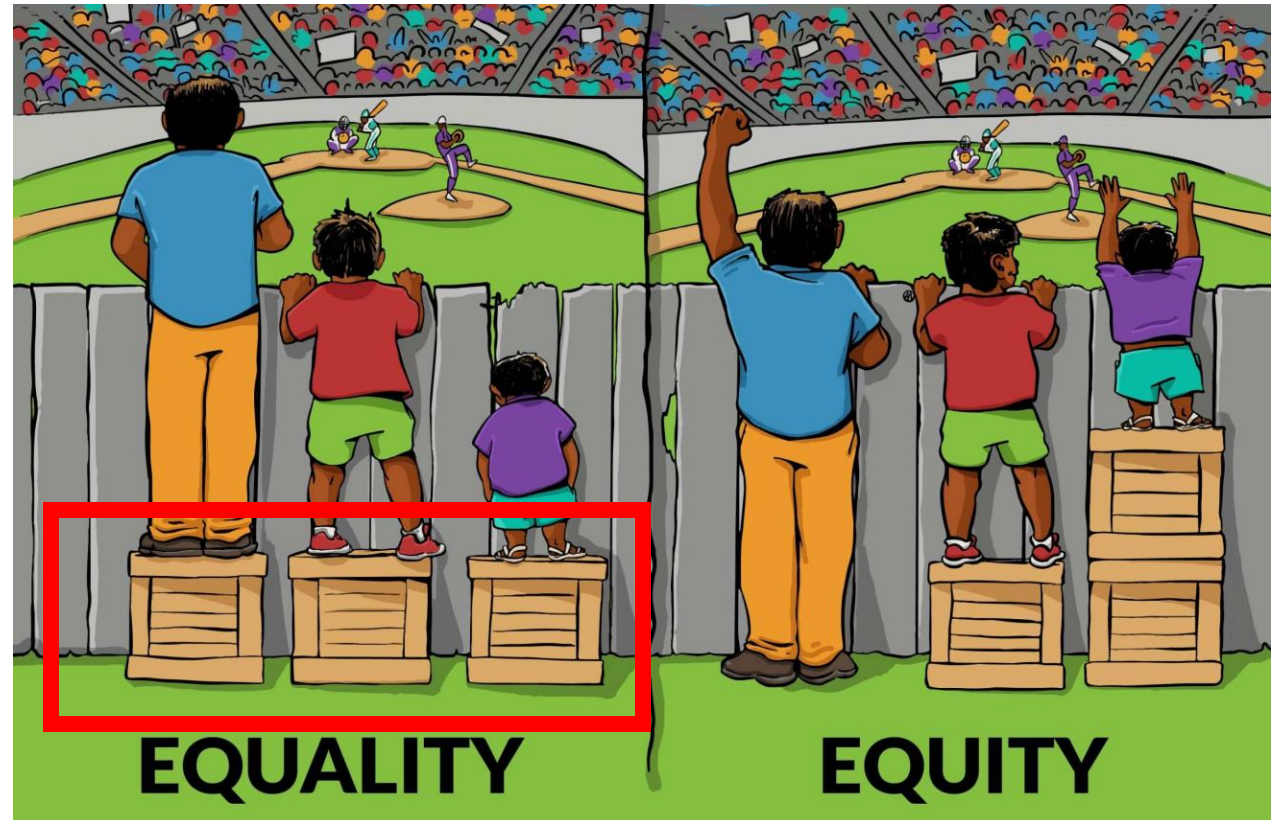


Health *Equity*

DISPARITY

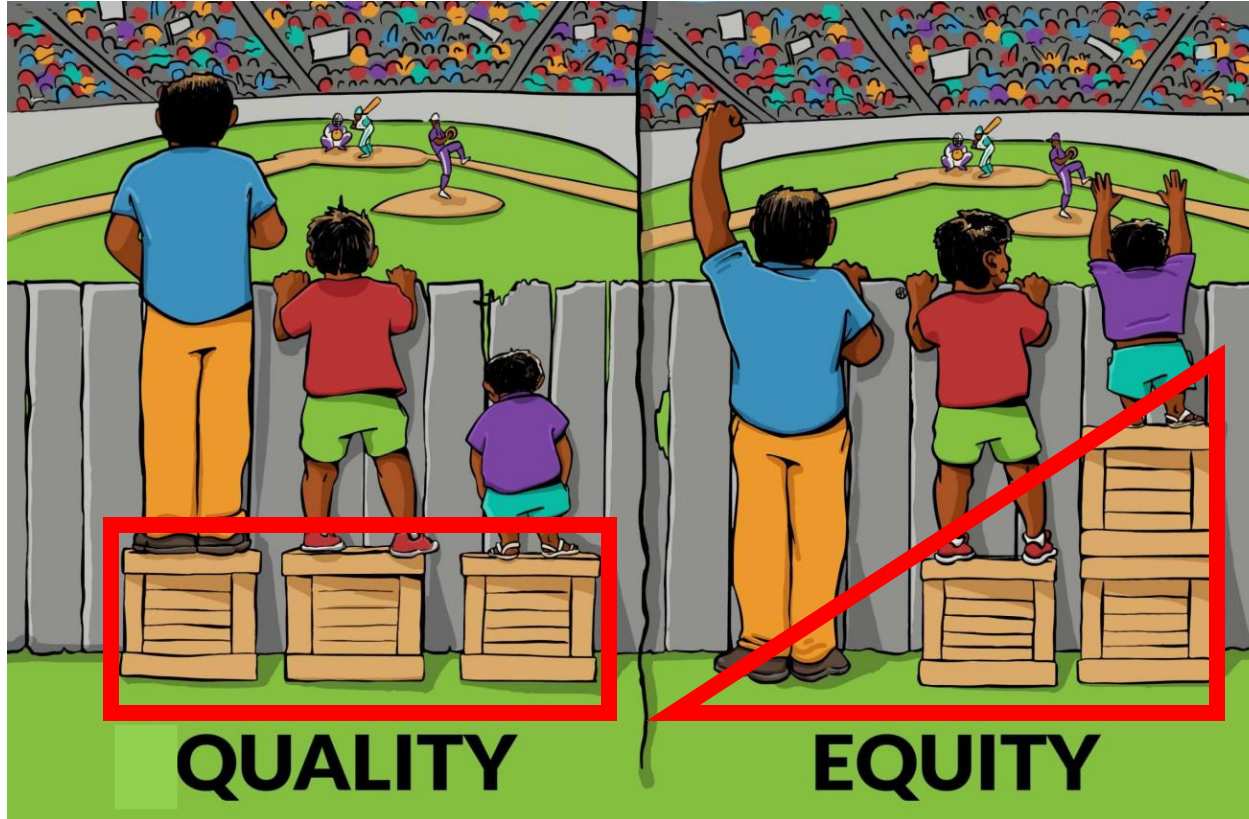
IOM 6th Domain:

[Health] Equity is providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status



Definitions: *Equality vs. Equity*

DISPARITY



Quality Oncology
Practice Initiative

Committee on Cancer

Food Assistance

Transportation

Educationally
Appropriate Materials

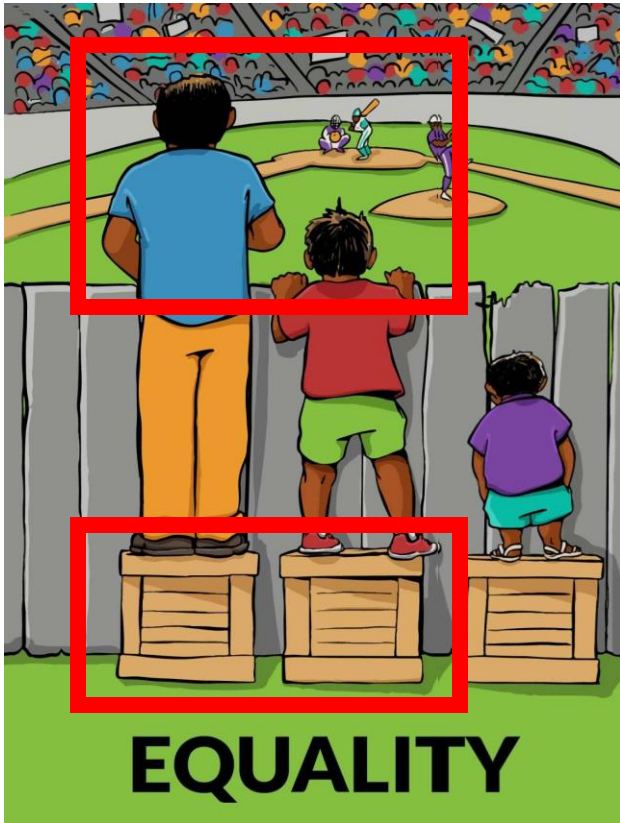
Expanded Clinic Hours

Access to Research

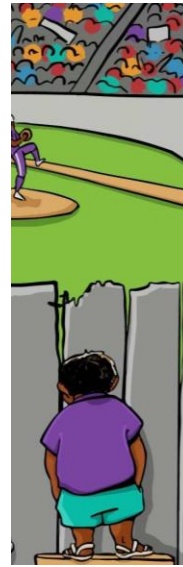


Definitions: *Quality vs. Equality vs. Equity*

100%



100%



How can we support these facilities?

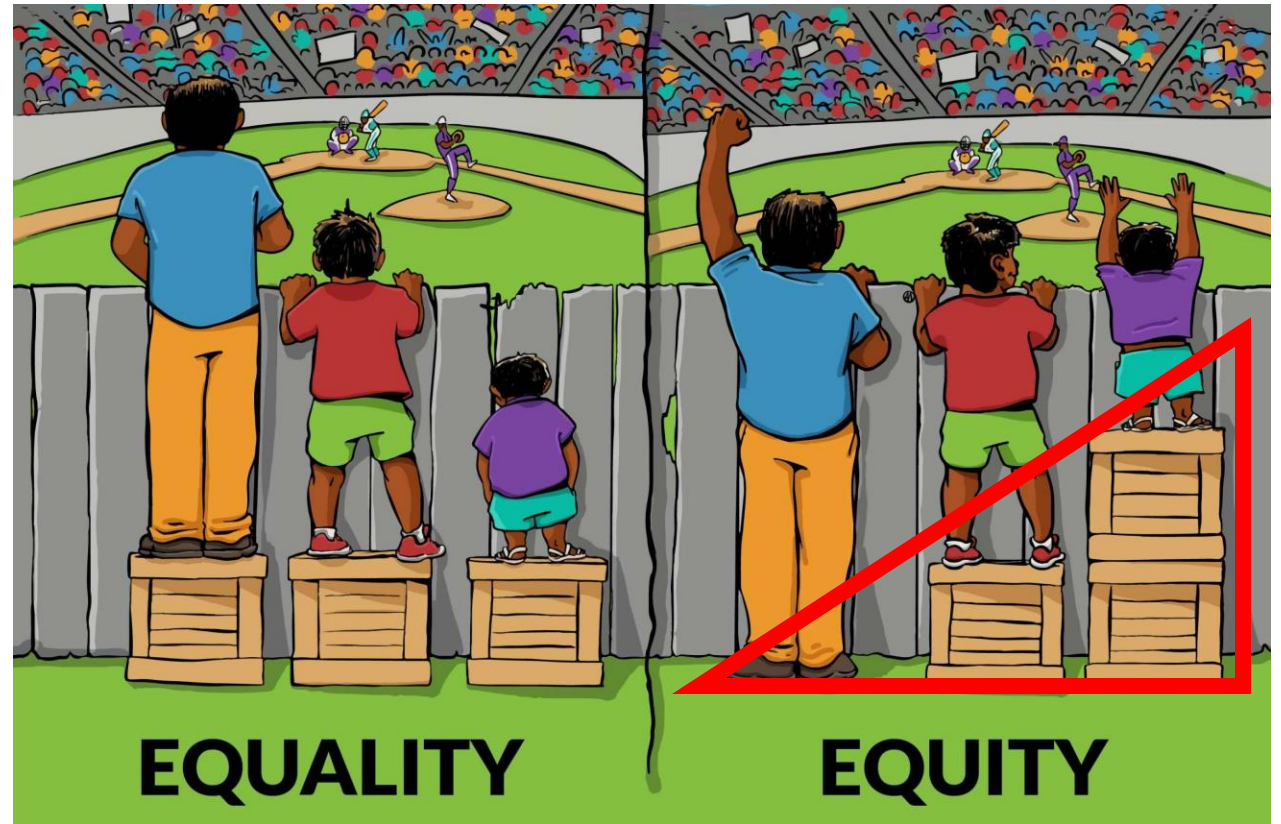


Health *Equity*

DISPARITY

CDC:

[Health] Equity is the state in which **everyone has a fair and just opportunity to attain their highest level of health**. Achieving this requires **focused and ongoing** societal efforts to address historical and contemporary injustices; overcome economic, social, and other obstacles to health and healthcare; and eliminate preventable health disparities.

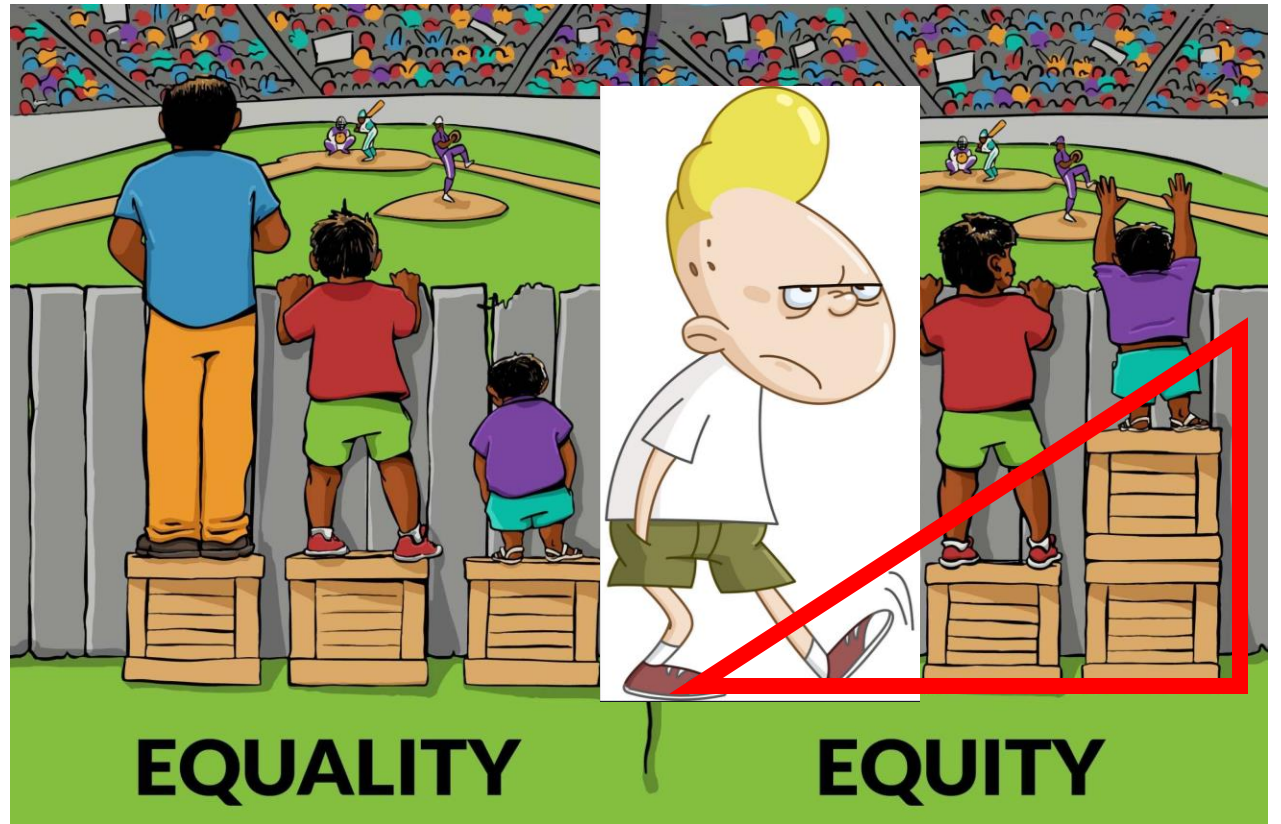


Health *Equity*

DISPARITY

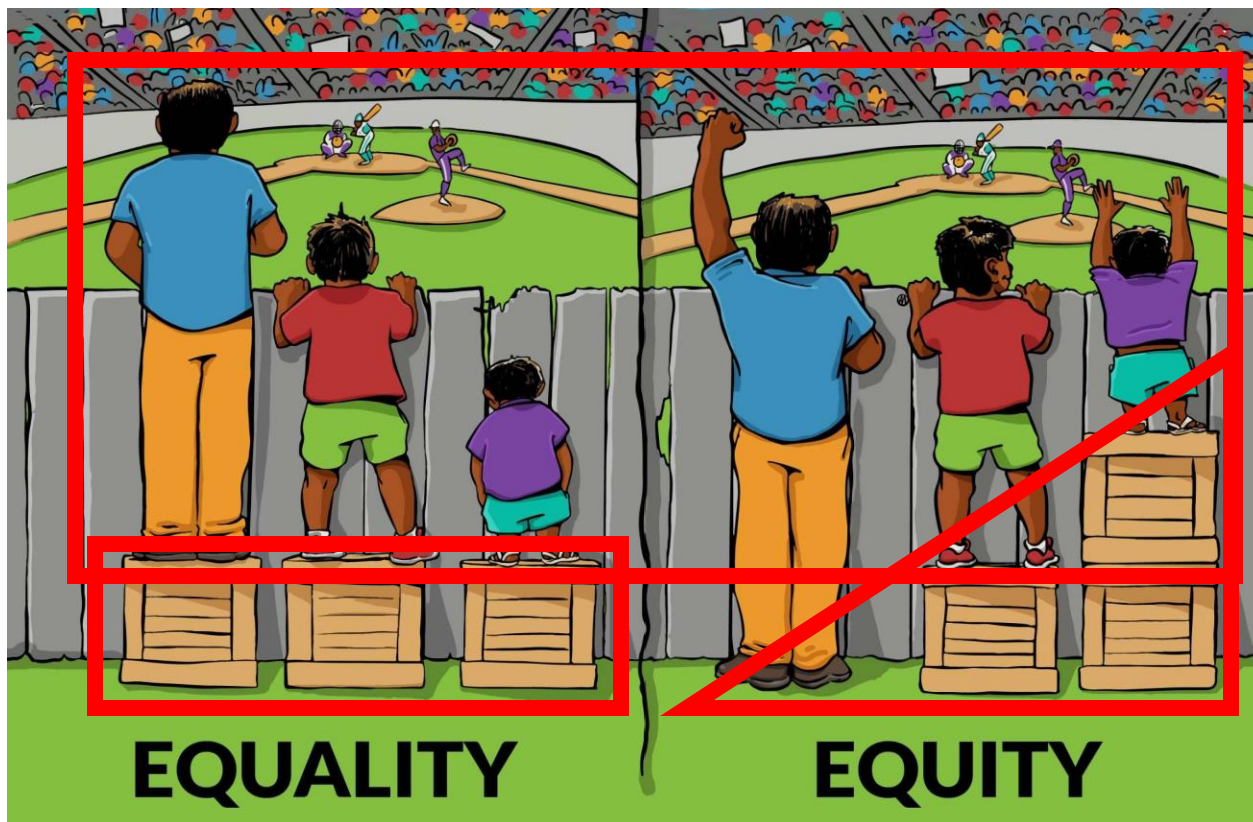
ACCC:

[Health] Equity is achieved when **all individuals have the opportunity to reach their full health potential, AND no one is held back** from achieving this potential due to social position or other socially determined circumstances.



Definitions: *Equity*

Recommendation #1: Get To Know Our Patients



Food Assistance



Transportation

Educationally
Appropriate Materials



Expanded Clinic Hours



Access to Research

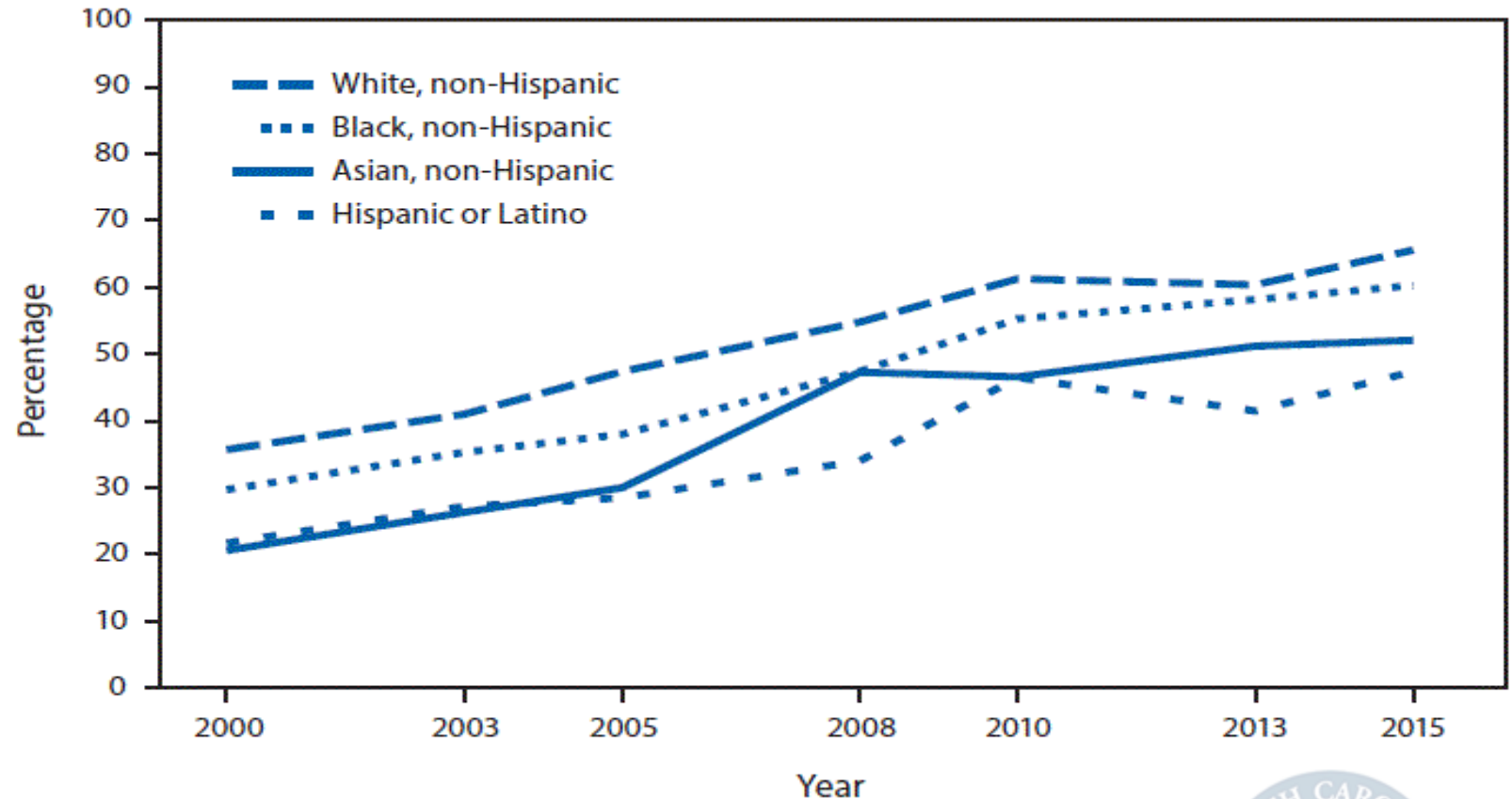


Health *Disparities*

are **preventable differences** in the burden of disease, injury, violence, or opportunities to achieve optimal health that are **experienced by socially disadvantaged populations.**

~CDC Nov. 2020

United States Colon Cancer Screening Rates (by Race)



Socially Disadvantaged Populations (Intrinsic)

- Women
- African Americans
- Appalachian Poor
- Asian Americans
- Elders
- Immigrants/Refugees
- Latinos/Hispanics
- Persons with Disabilities
- LGBTQA community
- Native Americans
- Overweight People
- Prisoners
- Religious Minorities



Racial Representation in Oncology Trials

Enrollment Characteristic	1990-2000		2001-2010	
	Prevention	Treatment	Prevention	Treatment
Articles that reported race/ethnicity	53%	78%	35%	51%
Number of participants included when race/ethnicity information was reported	91,741	91,663	45,815	104,337
White	84,860 (92.5)	74,695 (81.5)	40,803 (89.0)	86,484 (82.9)
African American	5046 (5.5)	10,624 (11.6)	4811 (10.5)	6403 (6.1)
Hispanic	1560 (1.7)	3294 (3.6)	183 (0.4)	2333 (2.2)
Asian	275 (0.3)	65 (0.1)	18 (0.04)	3398 (3.3)
American Indian	14 (0.01)	1 (0.0)	NR	79 (0.1)
Other	NR	2984 (3.3)	NR	5640 (5.4)
Articles with no African American participants	NR	29%	NR	22%





The NEW ENGLAND
JOURNAL of MEDICINE

Perspective

A Data Infrastructure for Clinical Trial Diversity

David Blumenthal, M.D., M.P.P., and Cara V. James, Ph.D.

April 27, 2022

DOI: 10.1056/NEJMp2201433

Urgent need for more robust data on race and ethnicity in electronic databases

Could significantly improve speed and efficiency in identifying diverse people for clinical studies

Challenge: reluctance to ask/answer due to discomfort or fear of how data will be used



Social Determinants of Health (Extrinsic)

- Early Childhood Development and Educational Opportunities
- Occupation, Employment, Workplace Safety
- Income Level
- Access to Housing and Utilities
- Food Insecurity
- Safe Air, Water, Toxin-Free Environment
- Neighborhood Conditions and Physical Environment
- Exposure to Crime and Violence
- Transportation Availability
- Social and Community Inclusivity



Learning Objectives

- What is Equity? Why does it matter? What is our current record?
- **What has changed? Are we prepared to change?**
- Share lessons on building equity into clinical oncology research.
- Can progress in research translate to progress in practice?





AMERICAN SOCIETY OF CLINICAL ONCOLOGY



Association of Community Cancer Centers



1986

First Report on Cancer Disparities by SES/Race

2002

Cancer Action Network

2002

Surveillance and Health Equity Sciences Dept.

2022

RFA: Cancer Health Equity Research Center (\$16mil)

2013

Health Disparities Committee

2017

Strategic Action Plan

2018

Health Equity Committee

2020

Equity Focused Plenary Renewed Action Plan

- Structural Barriers
- **Awareness**
- Access to Quality
- **Equitable Research**

2021

Presidents Theme “Equity: Every Patient. Every Day. Everywhere.”

2021

Provides Founding Support and Leadership for Appalachian Community Cancer Alliance (ACCA)

- Bristol-Meyers-Squibb
- AstraZeneca

2021

Joins as Partner Appalachian Community Cancer Alliance (ACCA)

2022

Highlights **Equity in Research** at Annual Meeting 😊

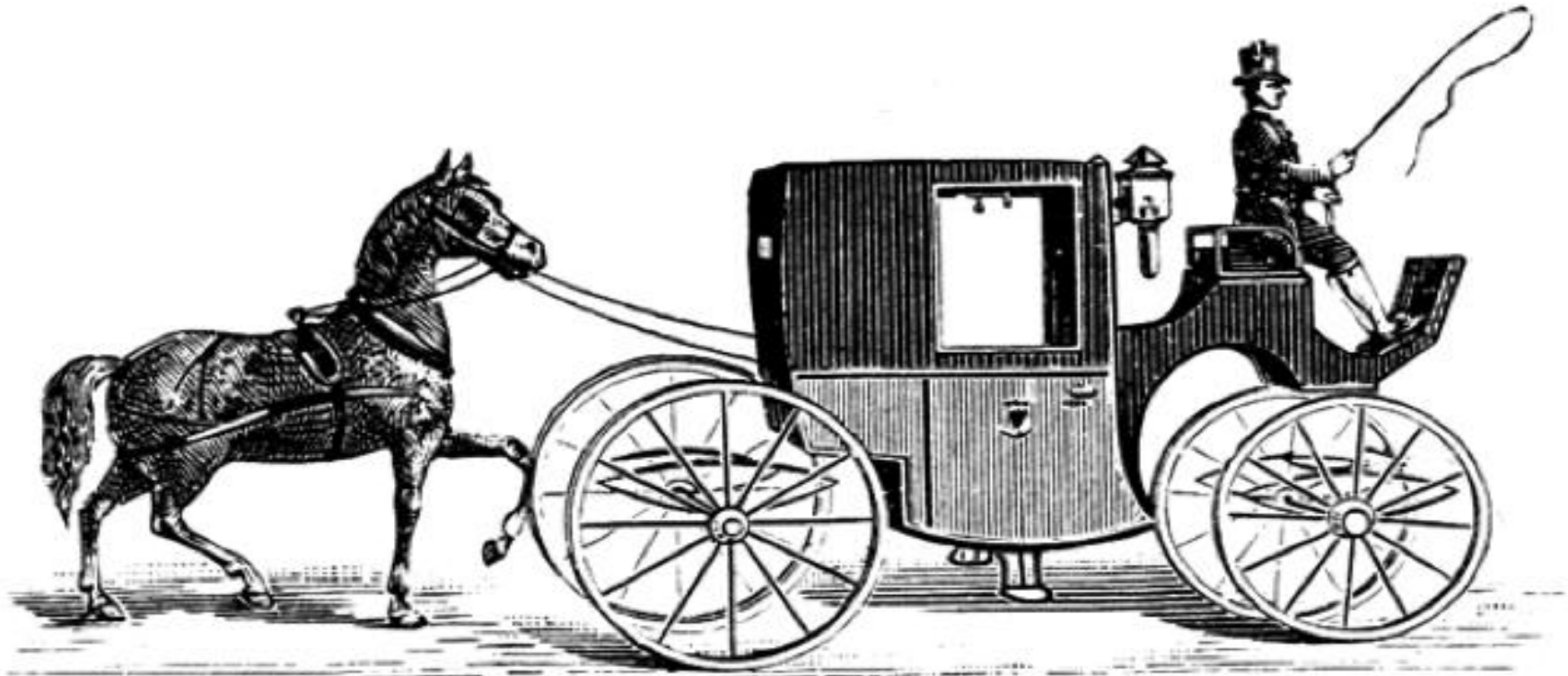
Learning Objectives

- What is Equity? Why does it matter? What is our current record?
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- **Lessons on building equity into clinical oncology research.**
- Can equity in research translate to equity in practice?

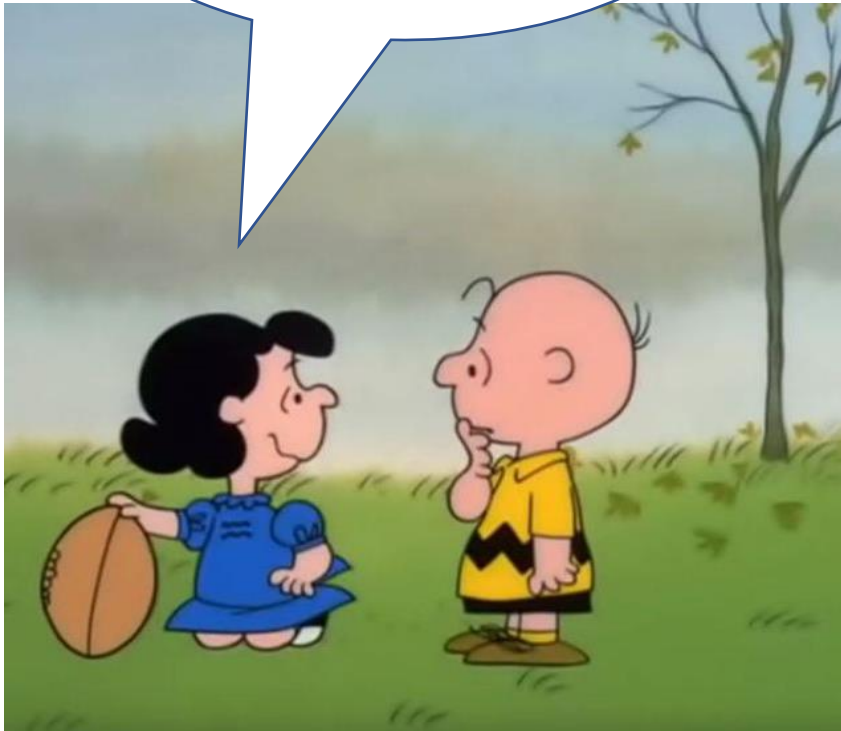


LET'S FIND OUR DISPARITIES !!!

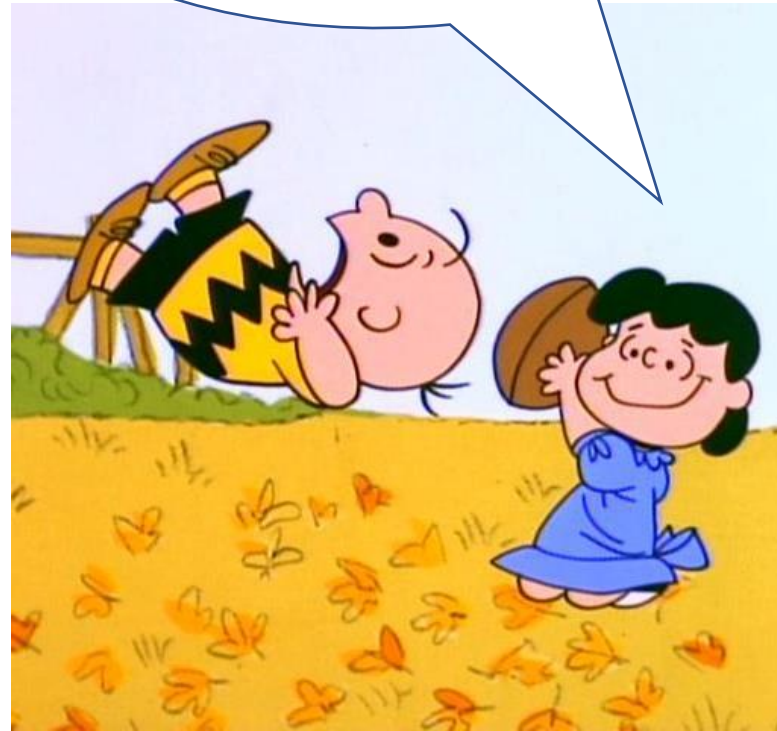
This isn't working at all... I should warn others not to put their cart before the horse.



We need you to participate in our research so we can provide you with better care. PLEASE!

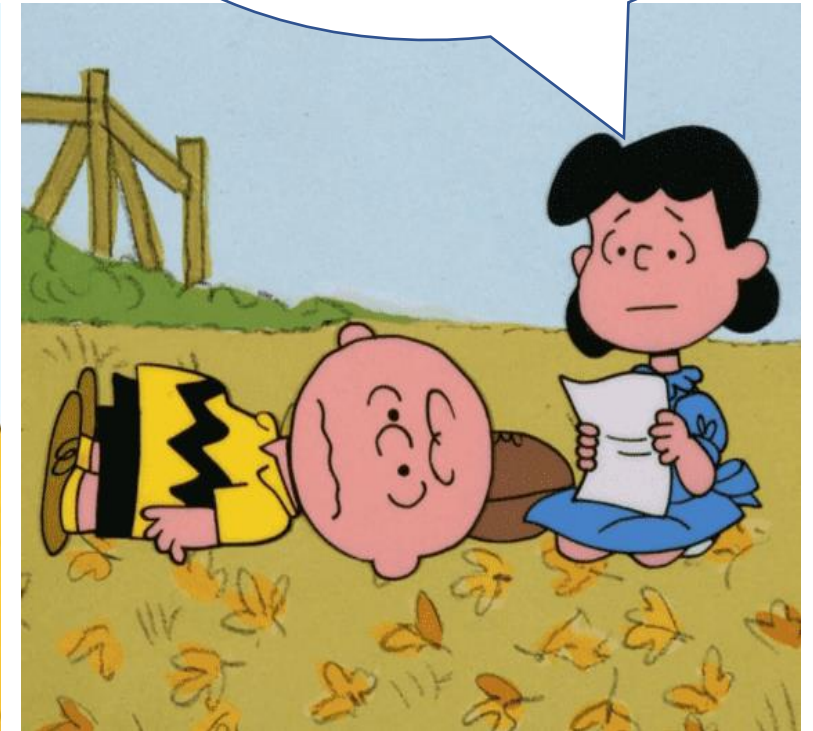


Thanks for participating.
We learned so much from you.
Have a nice day.



Why are 'these people'
so hesitant and
resistant to seek care
and enroll in trials?

I KNOW!
LET'S STUDY IT!





55 y/o white male (he/him/his)

New hepatocellular carcinoma
PMH HCV treated 2018, Child-Pugh A

SH: Lost job and insurance during COVID

08/2020: ER for RUQ pain – CT Mass, AFP+, Biopsy+, steroids, D/C w/referral

09/2020: Establish Care, Enroll in Nashville Indigent (NI) Program

10/2020: Additional workup of LLQ masses – splenic remnants not cancer

11/2020: Internal Tumor Board – unresectable due to asplenia and mild portal HTN

12/2020: External Tumor Board – resectable at their high-risk program

01/2021: TACE while getting NI approval

02/2021: TACE while patient enrolls in TennCare

03/2021: Original Institution resects HCC





64 y/o Latina female (she/her/hers)

Relapsed/Refractory HPV+ Anal SCC (4th line)

PMH: ECOG1, oral controlled T2DM

SH: Nashville Indigent Program

ESL, low health literacy, children help

Food Insecure – Food Pharmacy Beneficiary

03/2020: Obtained external expert advice on possible 4th line therapies

04/2020: Collaborated on possible Phase 1 HPV+ cancer trial

06/2020: Progressed and arranged for OSH Research to contact patient

08/2020: Patient not yet linked with OSH Research

09/2020: Patient fails screening due to elevated bilirubin

OSH not able to provide off-study medical care

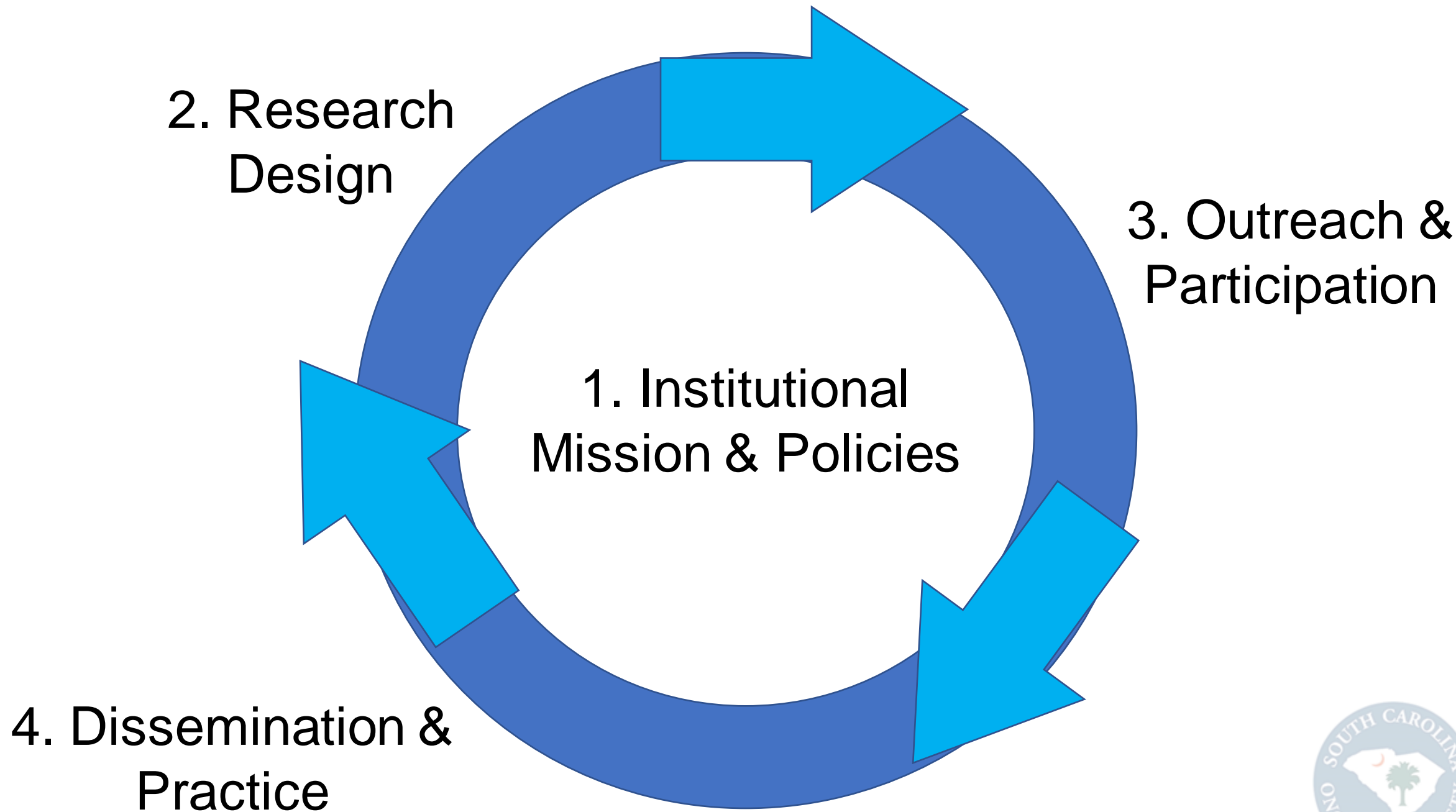
10/2020: Bilirubin unrelated to malignancy, had stone and stricture

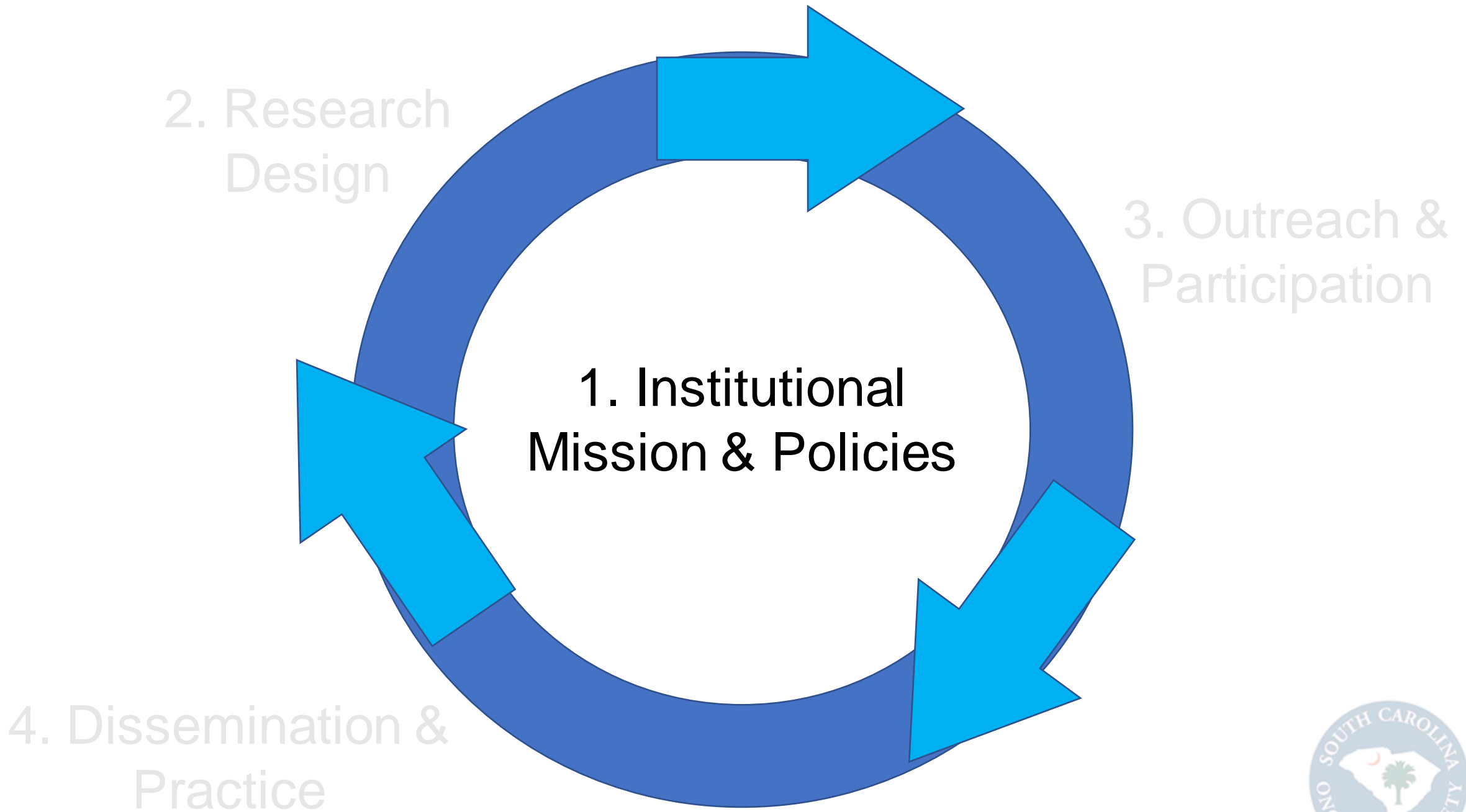
11/2020: Sent back to OSH for ERCP and stenting

12/2020: Progressed, PS declining, transitioned to hospice



**Without equitable *clinical care*,
how can we conduct equitable *research*?**





MISSION

Human Focused

Patient Partnered

Seek Non-Medical Expertise

Values/Fosters Diversity

Deliberative and Reflective

Accountable

POLICY

Personalized Care Experience

Implementation Prioritizes Patient

Non-Medical Partners, Advisory Council

Hiring, Leadership, Promotion

Plan of Action, Committee, Analysis

Accepting of Failure as Opportunity



EXAMPLE FRAMEWORK:

American Cancer Society
Health Equity Principles
April 2020 Report



Research Portfolio Assessment

1) Categorize Current Trials

- Population, Prevention, Cancer Treatment, Supportive

2) What percent have an equity focus or endpoint(s)?

3) Is enrollment equitable (Adjusted For Catchment Area Population)?

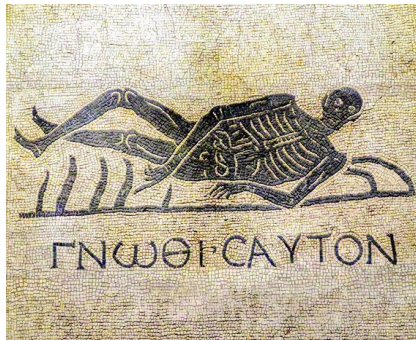
4) Are our research activities helping or hindering Minority-Serving Institutions?



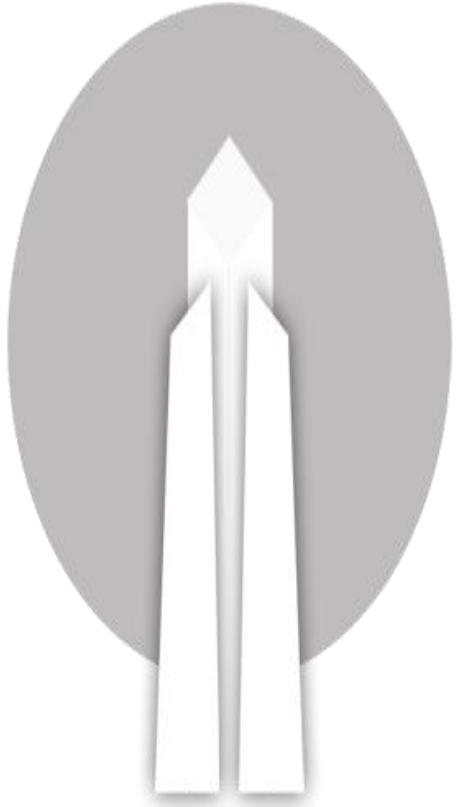
Solution is not one size fits all

	Institution #1	Institution #2	Institution #3
Infrastructure	+++	-	+++
Funding	+++	+	++
Patient Demographics	-	+++	++
Equity Research Focus	+	+++	-

Institutional Needs Assessment



INSTITUTION A



**Has skilled researchers,
grant funding, resources**

**Needs to improve access to
vulnerable populations**



**Needs infrastructure
support for high
quality clinical care
and research**

**Has diverse staff and
patients with interest
in equity research**



INSTITUTION B

2. Research Design

3. Outreach & Participation

1. Institutional Mission & Policies

4. Dissemination & Practice



PROBLEM:

Genetic Counseling Services Not Available

OSH Referral not covered by NI or TennCare
Patients receive anticipatory letter of OOP costs
Few patients follow through with referral



SOLUTION:

Provide Genetic Counseling Through “Patient Centered” Research

Provider recommends patient.

Patient receives and navigates email.

Patient fills out and navigates questionnaire.

Patient watches series of videos.

Patient completes a test and receives score.

Patient tracks online progress.

Patient receives notice of referral.



Research CANNOT be a substitute for standard of care

Ethical Hypothesis Considerations

Standard Medical Research

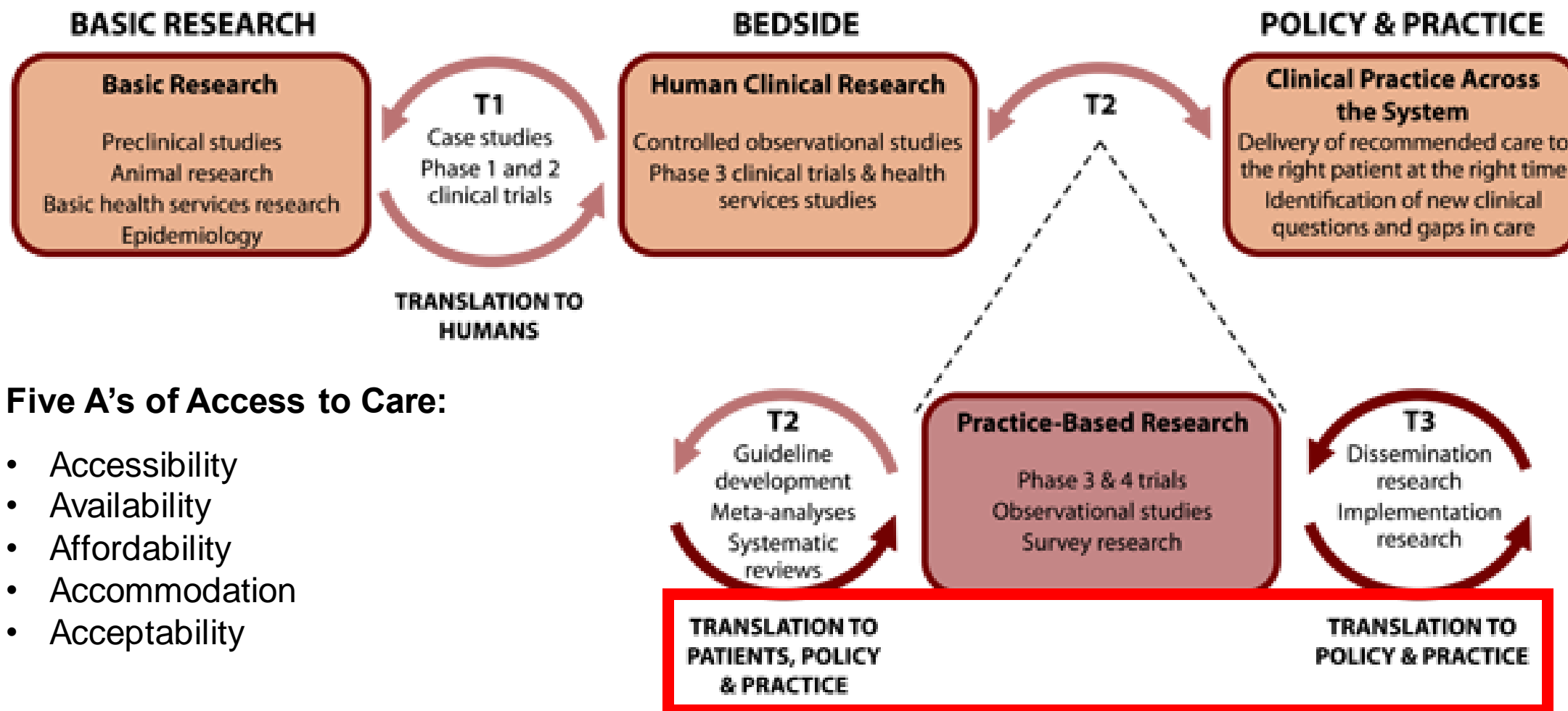
- Status quo is the current best
- Design Requires High Threshold to Change
- Focus Forward (Applied Knowledge): biochem, cellular, animal, human

Health Equity Research

- Status quo is inequity
- Design Must Be Change Oriented
- Focus Backward (Root Causes)



~17 years*

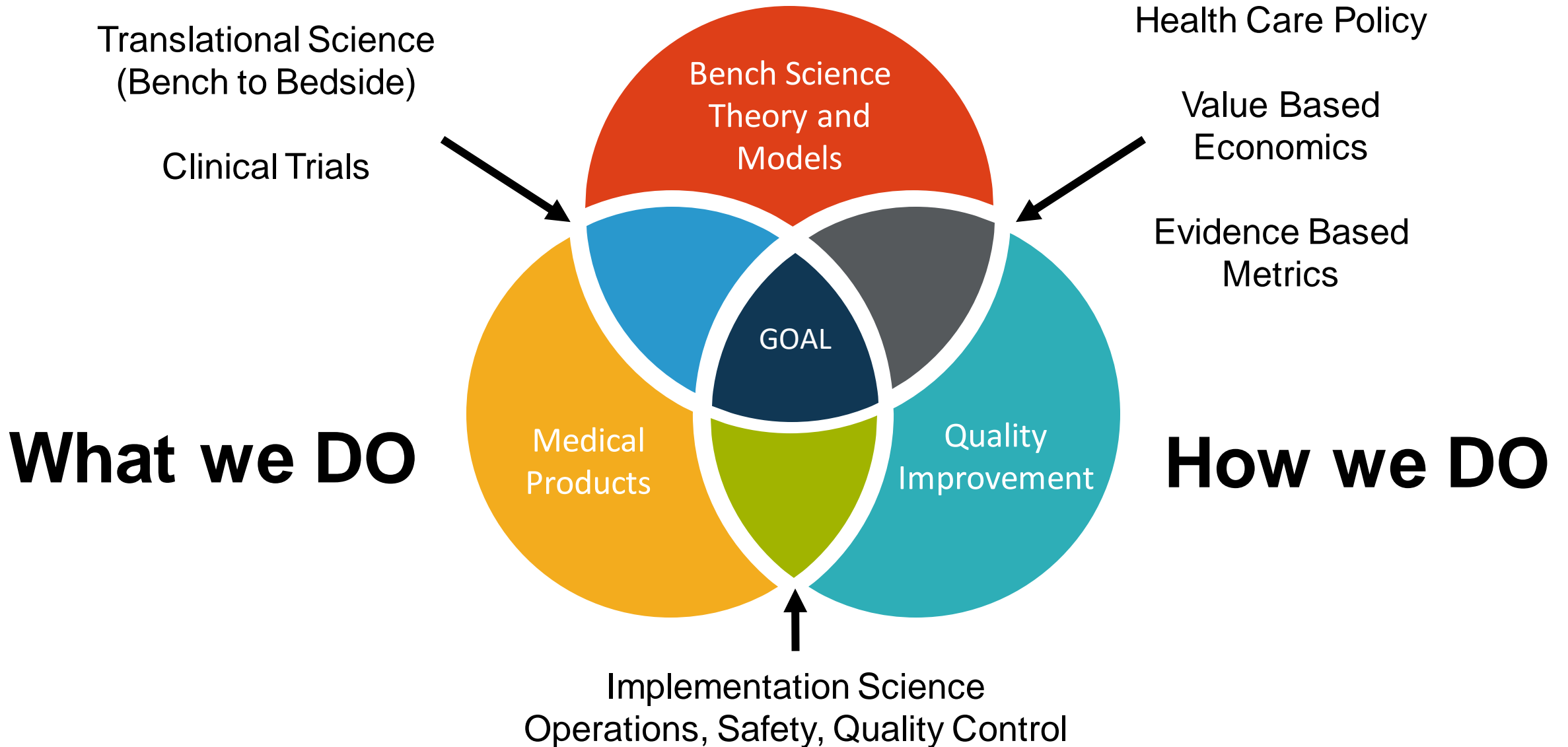


*Morris, Wooding, and Grant. *J R Soc. Med.* 2011

Westfall et al. Practice-based research – “blue Highways” on NIH roadmap. *JAMA.* 2007; 297(4): 403–406 (adaptation).

NSW Health and Medical Research Strategic Review 2012. NSW Ministry of Health. Page 4 (adaptation).

What we KNOW



Organizations

**Pharmaceutical
Company**

**Health Data
Company**

**Clinical
Practice**

**Diagnostic
Company**

**Insurance
Company**

Organizations



**GILDA'S
CLUB
MIDDLE
TENNESSEE**

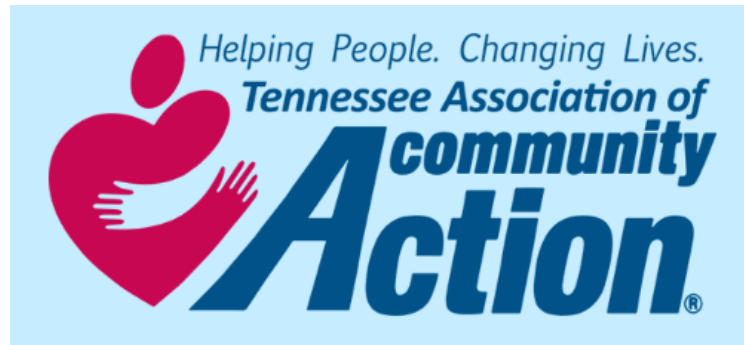
An Affiliate of the
CANCER SUPPORT COMMUNITY

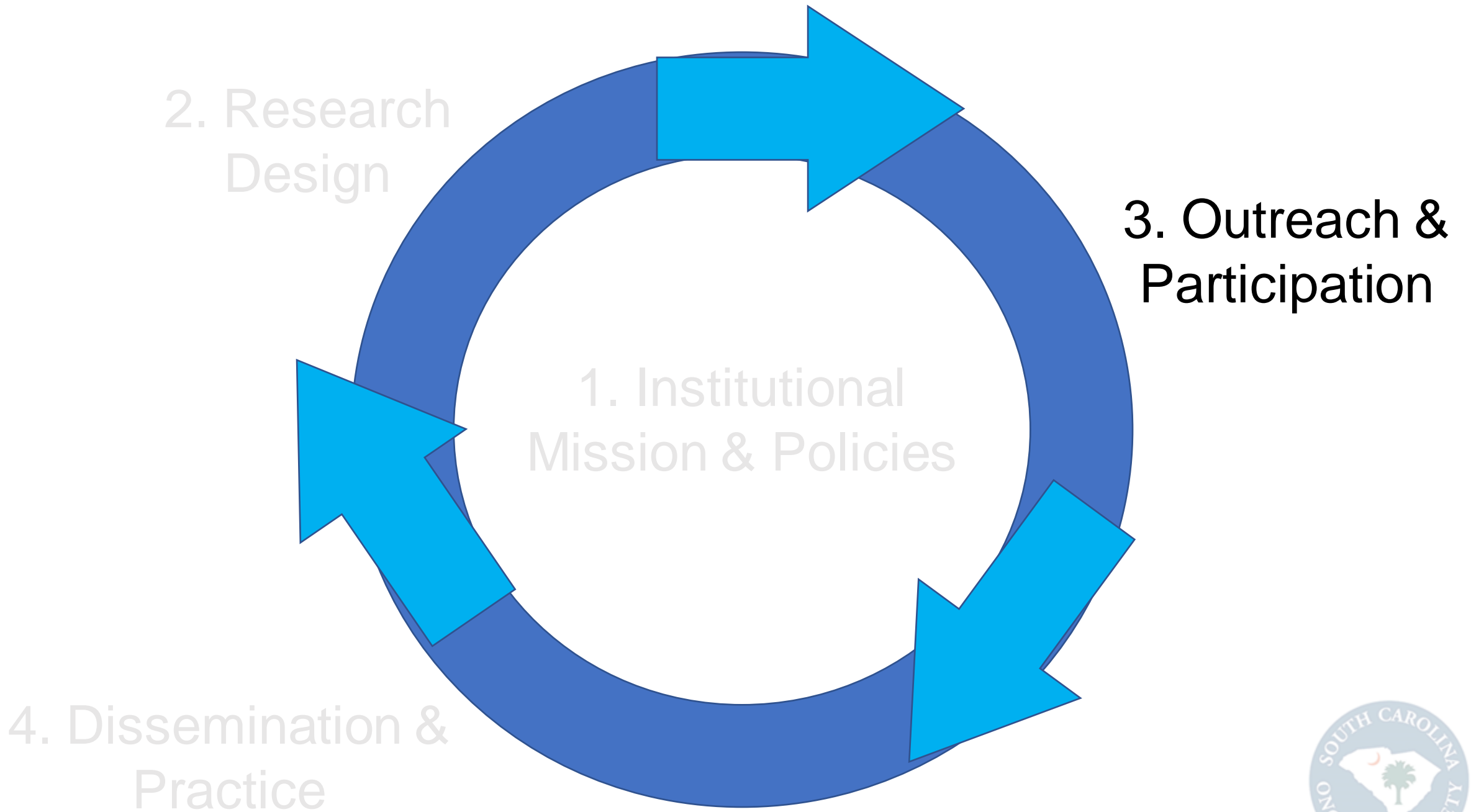


AL-MAHDI ISLAMIC CENTER

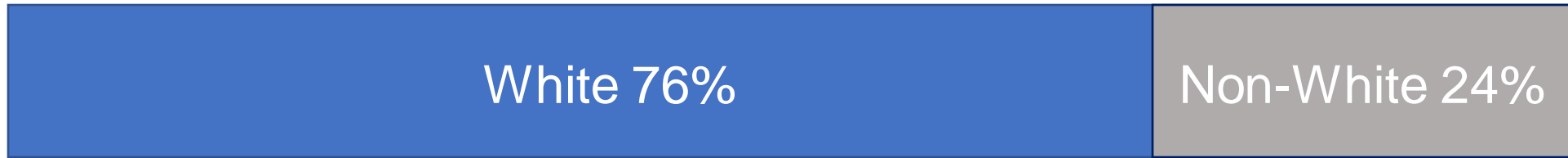


conexión
a m é r i c a s





Relative Cancer Prevalence (US 2013)



Proportion Enrolling in Trials (US 2003 - 2016)



Trial Enrollment 8%

92% Excluded !!!

- Non-Racial Vulnerable Groups
- Social Determinants of Health

White 83%

Non-White 17%



Davidson County Racial Demographics



N = Required to Power Hypothesis

Current Enrollment



Proportional Enrollment (Equality)



Scientifically Meaningful Enrollment (Equity)



Trial Matching Services

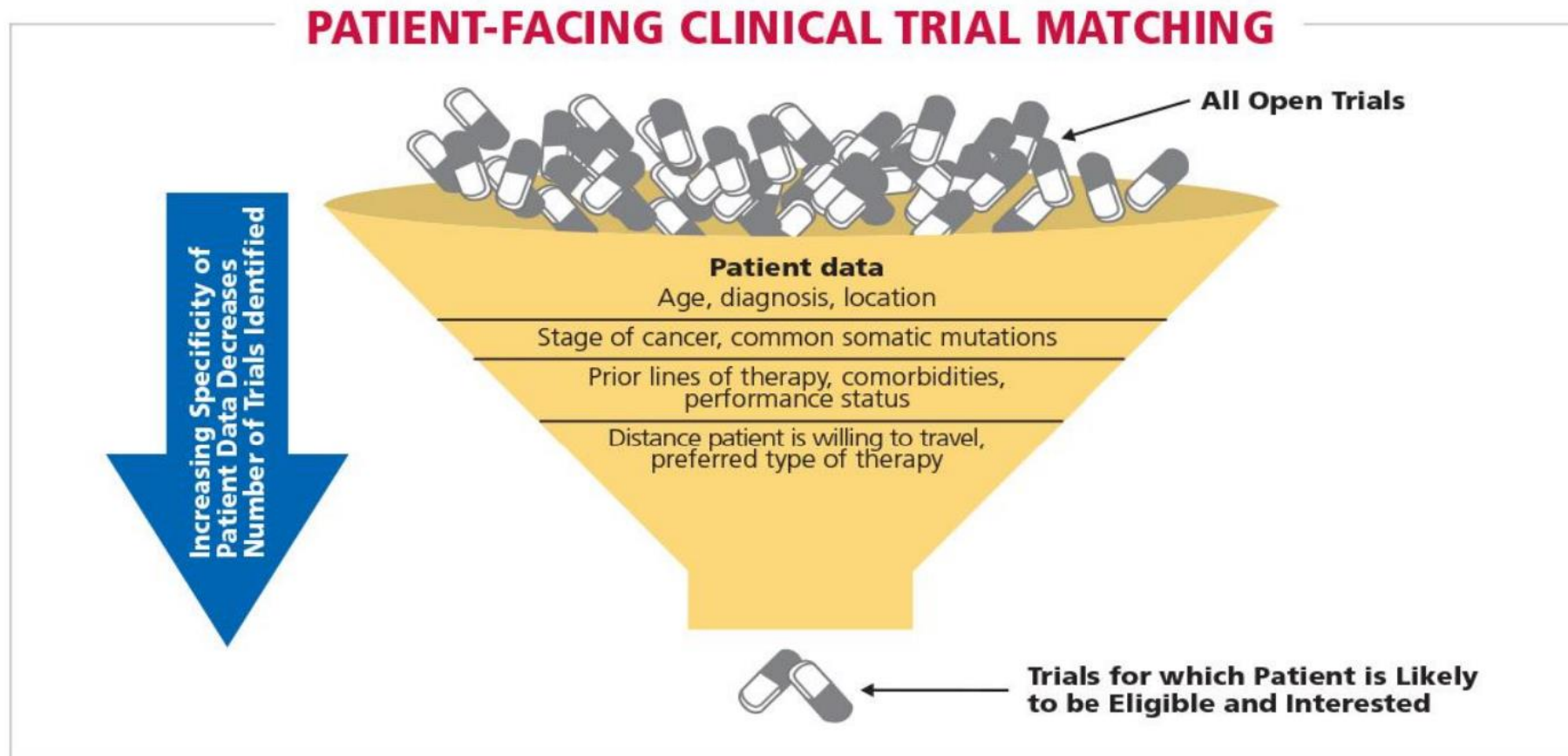
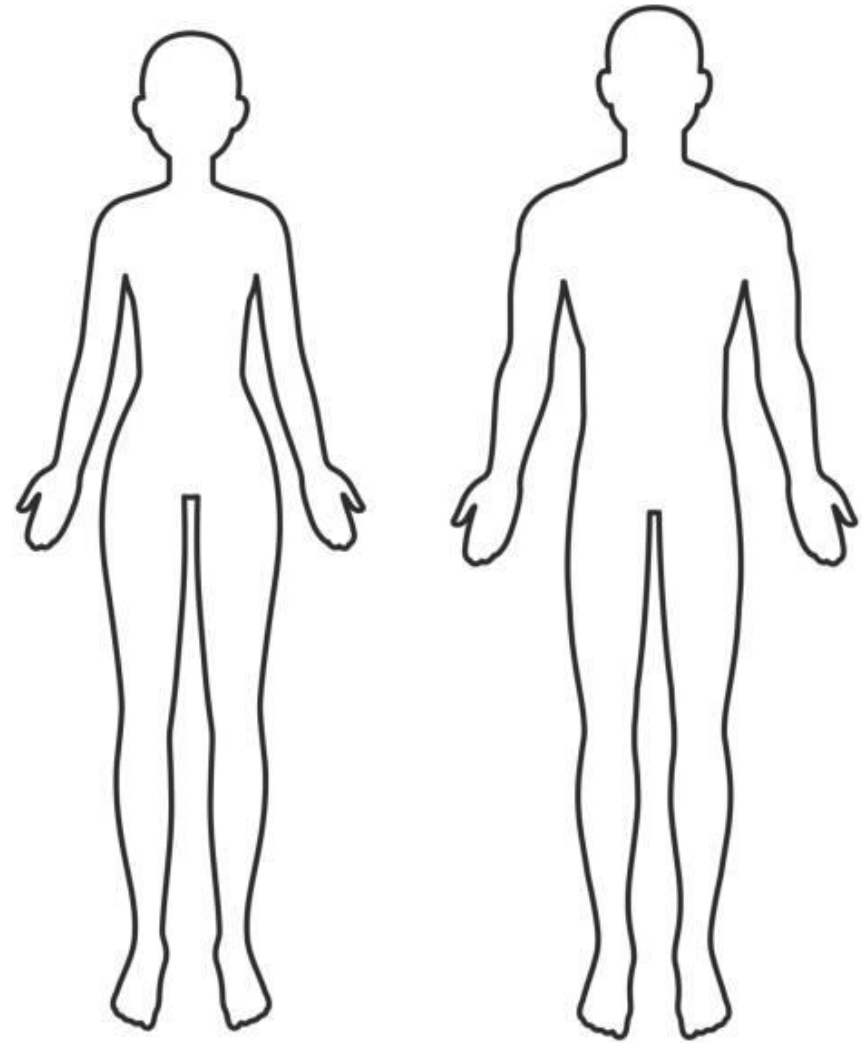
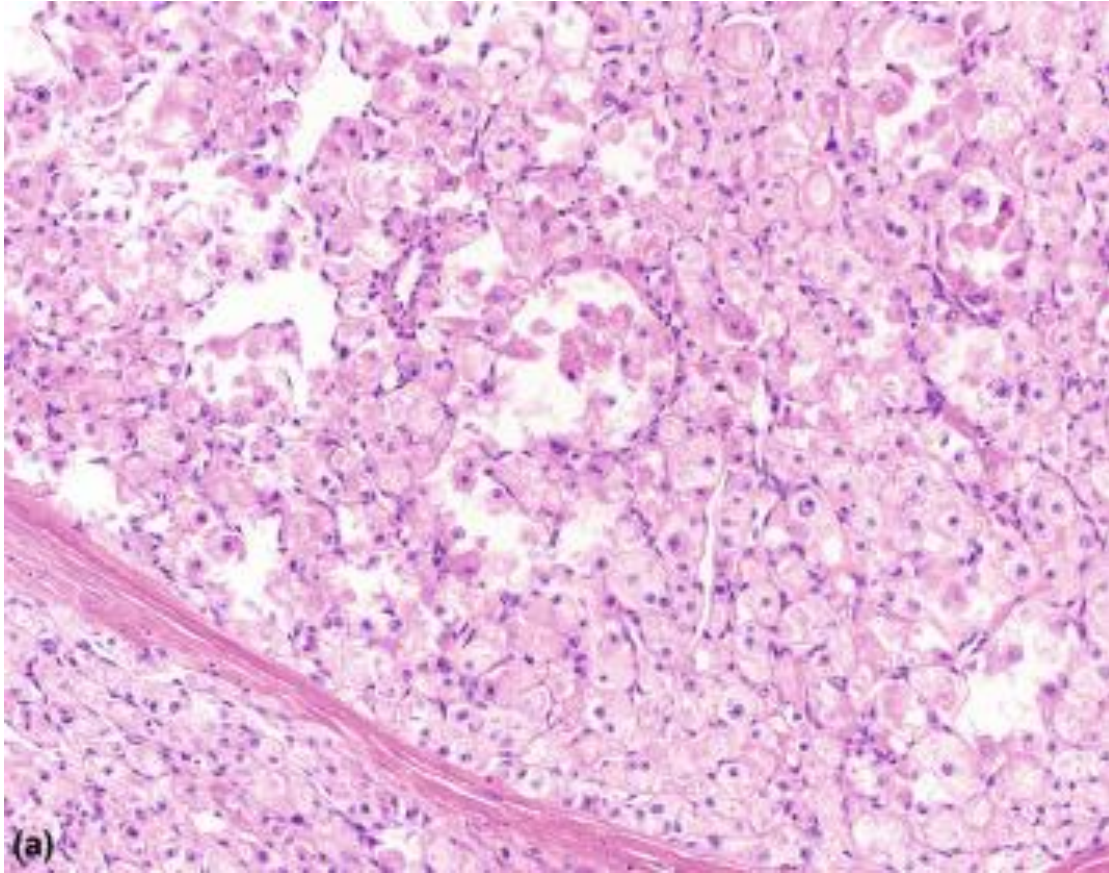


Figure 1: Consideration of additional patient data further refines the clinical trials considered for a patient and makes a match more accurate. Data may include clinical characteristics like genetic mutations, but may also include patient preference data such as location of the trial or type of therapy.

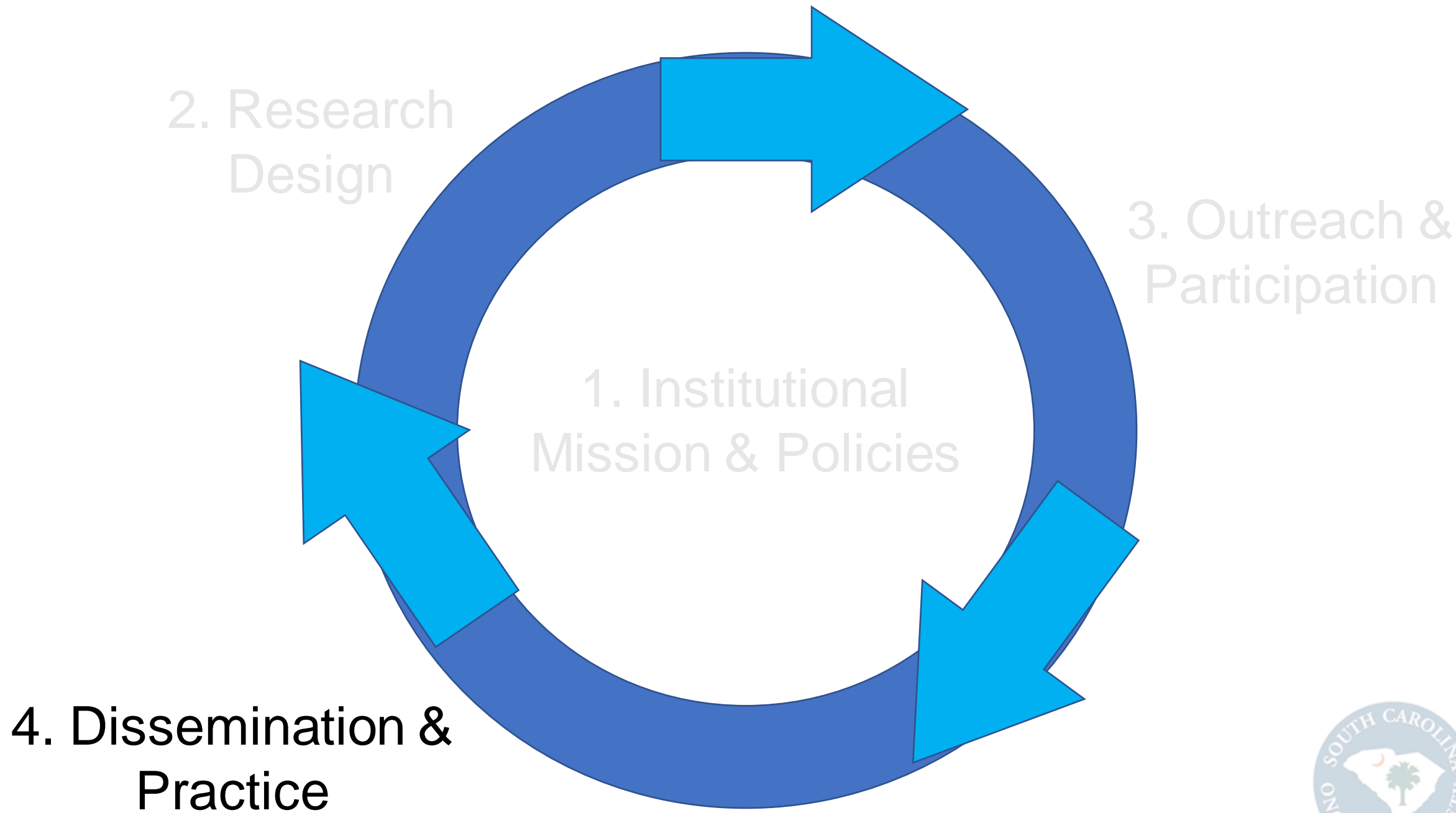




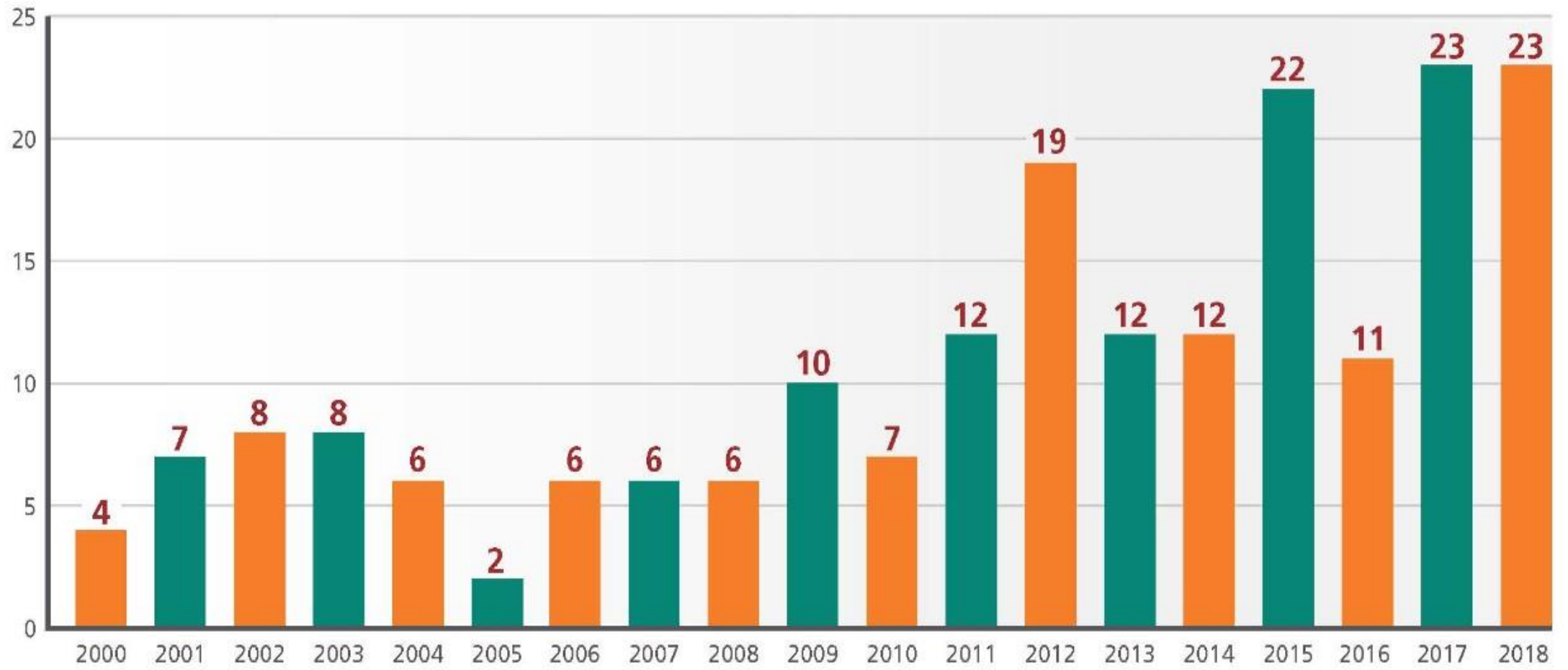
Learning Objectives

- What is Equity? Why does it matter? How might this impact trust?
- What has changed? Are we prepared to change?
- Share lessons on building equity into clinical oncology research.
- **Can equity in research translate to equity in practice?**





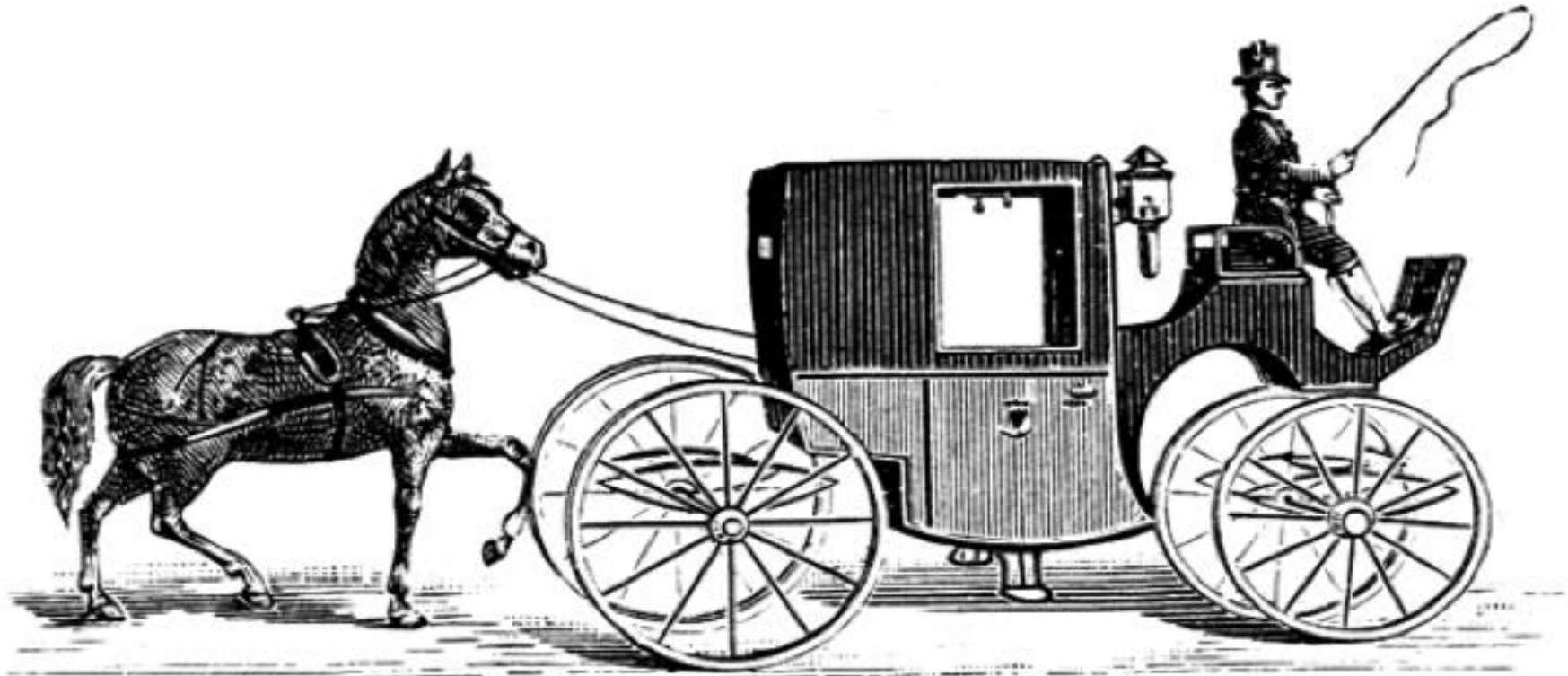
ONCOLOGY DRUG APPROVALS BY YEAR



Source: CenterWatch. FDA Approved Drugs for oncology

LET'S FIND OUR DISPARITIES !!!

This isn't working at all... I should warn others not to put their cart before the horse.





Take Aways

- Comprehensive Equity Focus (Beyond Research)
 - Intra and Inter-Institutional Needs Assessment
 - Sustain Non-Medical Community Partnerships
 - Learn to Listen, Then Engage, Then Recruit
-
- Increase Funding Incentives to Build & Train Outreach Capacity
 - Require Equity and Dissemination Plans in Grants
 - Invest in Human-Based Trial Identification, Matching, Opening
 - Commit Same Energy in Unique People as Unique Tumors

WE DID IT !



SINCERE THANKS TO YOU ALL 😊

References (Pathology Photos)¹

Lung:

Rosen, Y. Squamous cell bronchogenic carcinoma (gross pathology). Case study, Radiopaedia.org. (accessed on 02 May 2022) <https://doi.org/10.53347/rID-9258>

Kidney:

Gaillard, F. Renal cell carcinoma (gross pathology). Case study, Radiopaedia.org. (accessed on 02 May 2022) <https://doi.org/10.53347/rID-9888>

Pancreas:

Hruban, R., Fukushima, N. Pancreatic adenocarcinoma: update on the surgical pathology of carcinomas of ductal origin and PanINs. *Mod Pathol* **20**, S61–S70 (2007). <https://doi.org/10.1038/modpathol.3800685>

Breast:

File is from Wikimedia Commons and may be used by other projects.

Spleen:

Uthman, E. Splenic lymphoma (gross pathology). Case study, Radiopaedia.org. (accessed on 02 May 2022) <https://doi.org/10.53347/rID-77581>