CAGT
CENTER FOR
CELL AND GENE THERAPY

Baylor College of Medicine

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Texas Children's Hospital

Houston Methodist
LEADING MEDICINE

INSTITUTIONAL
DIVERSITY
& INCLUSION

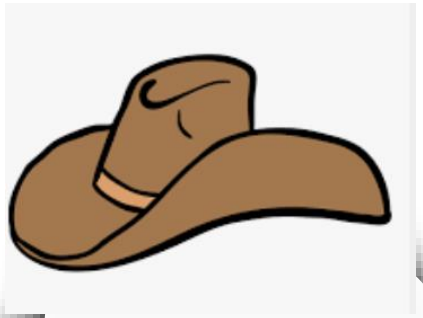
Ethnic Minority Engagement: Healthcare & Drug Development

Rayne H. Rouce, MD

Objectives

- **Explore historical barriers to investigational clinical trial participation in underrepresented minorities (URMs)**
- **Describe existing gaps in ethnic minority engagement in healthcare & drug development**
- **Examine strategies researchers and providers can utilize to improve representation & thus outcomes**

About Me



Physician Scientist leading investigator-initiated Cell & Gene Therapy Trials

IRB Member
Lead Diversity in Clinical Trials Task Force at DLDCCC

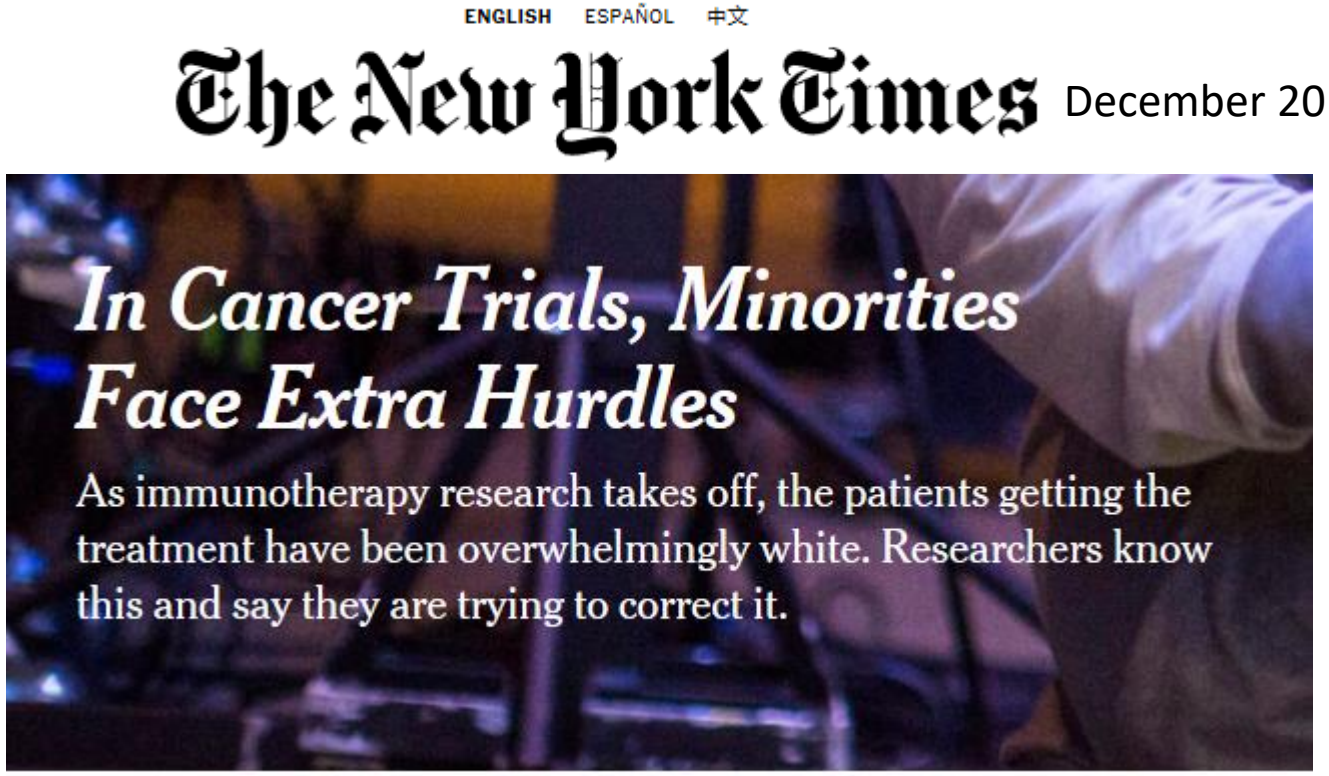
Translational Researcher with a lab presence

Pediatric Hematologist-Oncologist
taking care of patients

ASH DEI/MRI Committees
ASTCT DEI Chair
ASGCT DEI Chair
ASTCT/NMDP Access Group

Director of Community Outreach & STEM-related Diversity Initiatives at BCM
Race in Medicine Task Force

The evidence is undeniable



In the first study, of 582 patients with lung cancer, 92% were white, **3% black, 3% Asian & 3% listed as "other."** In the second study, of 821 people with kidney cancer, 88% white, **9% Asian and only 1% black**.

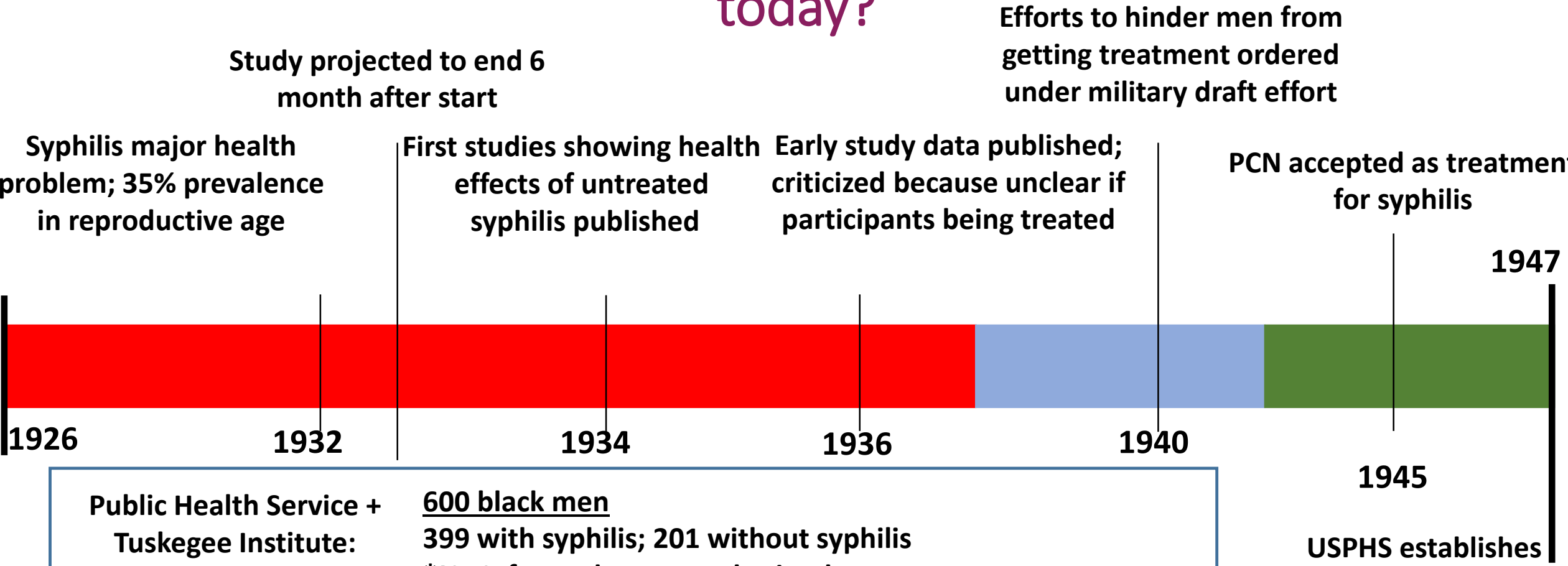
- **Data (where presented) on minority enrollment in early phase trials shows widespread underrepresentation of minority populations…regardless of disease studied**

The reality is: Participation of Black and Latino patients in clinical trials (of all types) is far less than White counterparts.

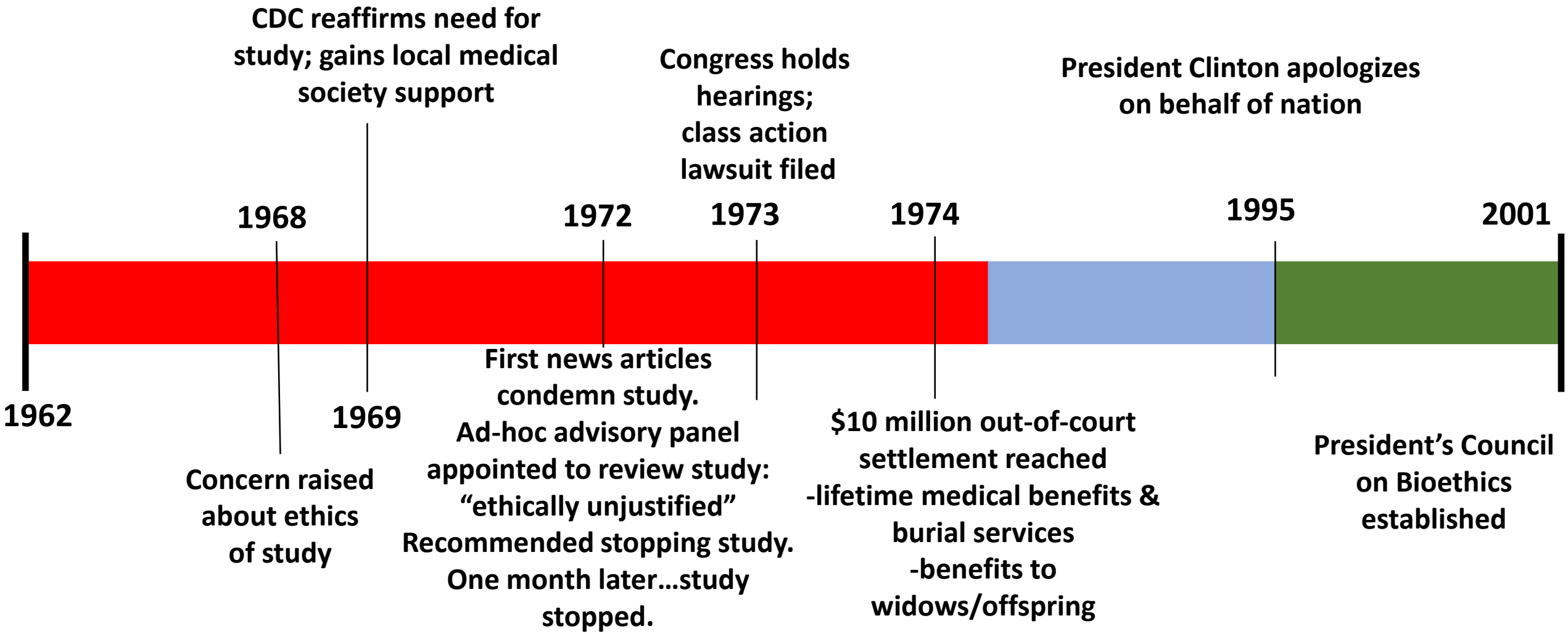
The question is: WHY?

Many have cited historical events. Few understand the specifics behind *why* it is so difficult for some to move beyond these historical events.

Why are historical events that happened so long ago still relevant today?



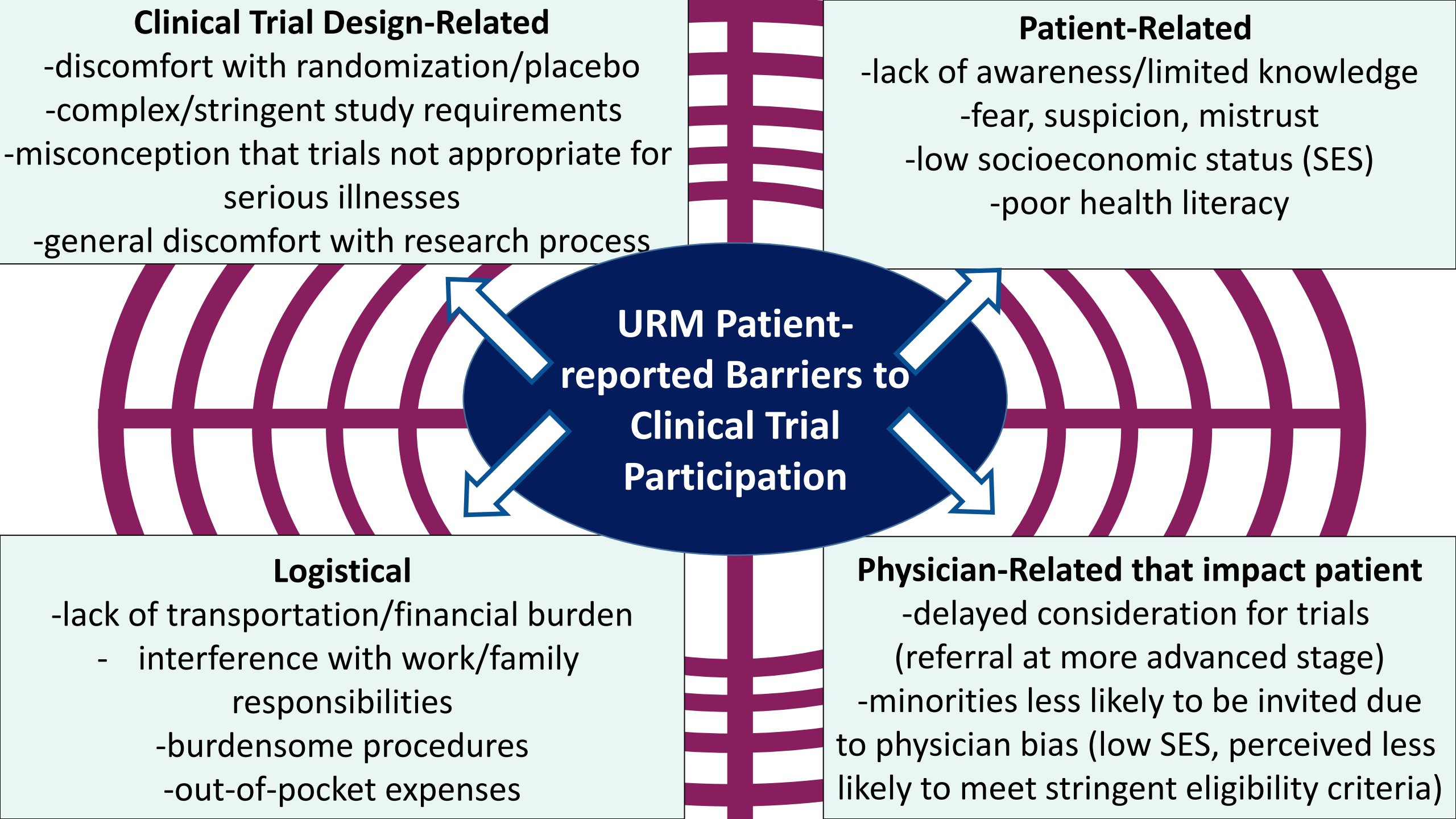
Why are historical events that happened so long ago still relevant today?

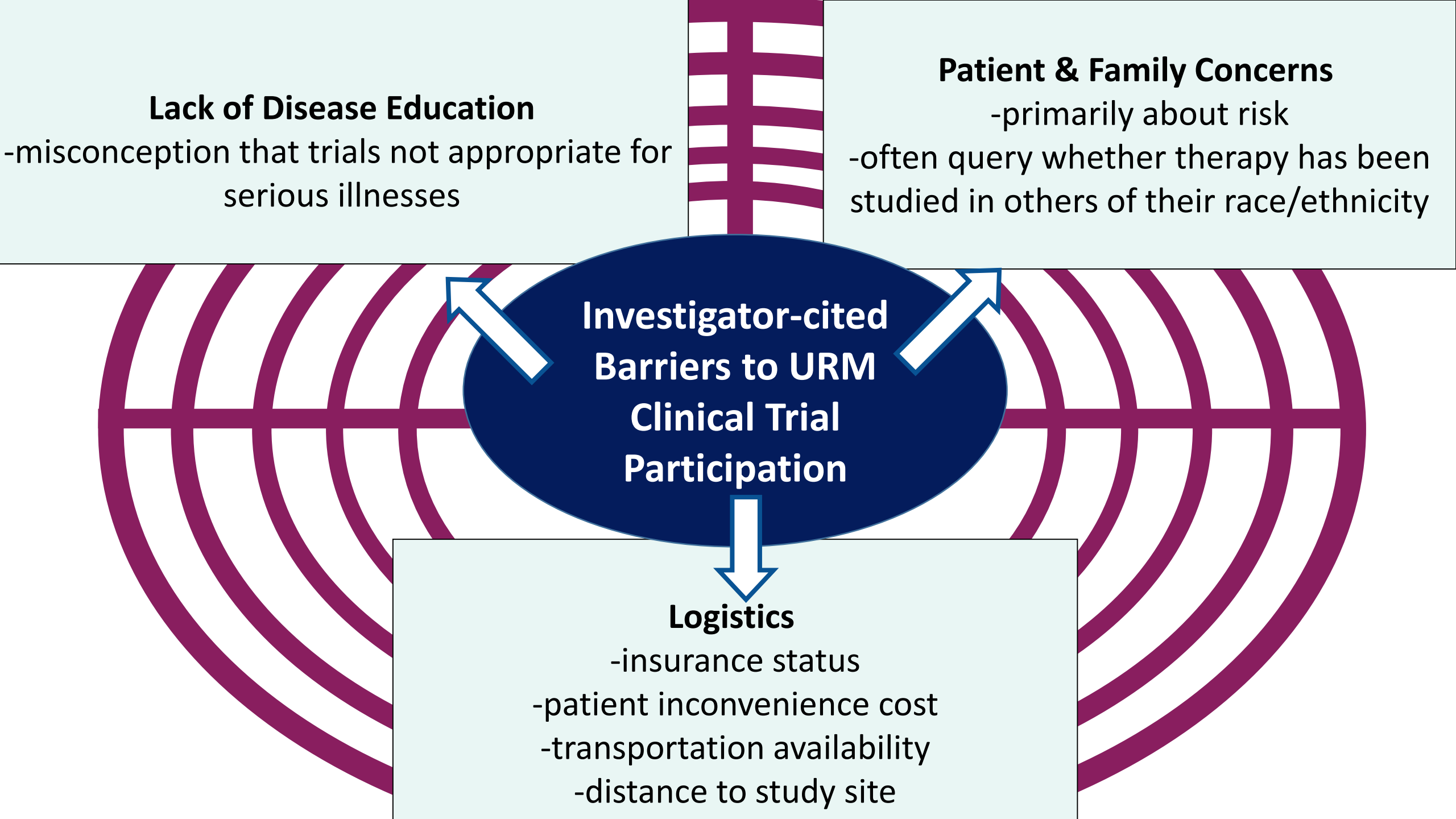


So…is it possible that ”NIH” or “government funded” may have different meanings to different people?

- **This was a government-sanctioned study**
  - mistrust is multifactorial considering government and legislative-sanctioned discrimination was often based on accepted medical or scientific “facts”

- **But…this study was directly responsible for many of the government mandated research safeguards we have today**
  - **1974: National Research Act signed into law**
    - National Commission for Protection of Human Subjects of Biomedical and Behavioral Research was created
    - informed consent required for studies of Dpt of Health, Education and Welfare
  - **1995: National Bioethics Advisory Commission (HHS)**

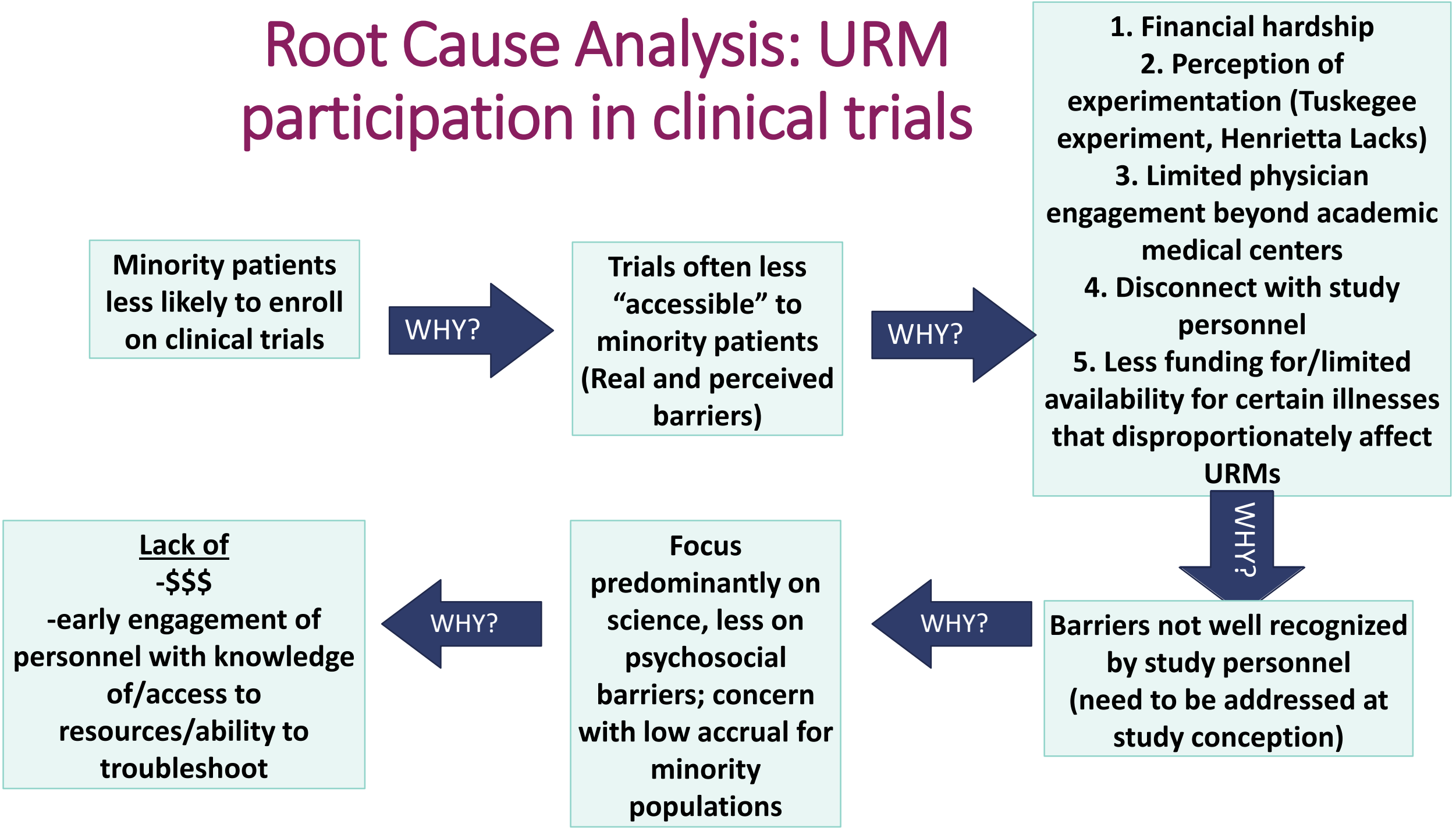

Clinical Trial Design-Related
-discomfort with randomization/placebo
-complex/stringent study requirements
-misconception that trials not appropriate for serious illnesses
-general discomfort with research process
Patient-Related
-lack of awareness/limited knowledge
-fear, suspicion, mistrust
-low socioeconomic status (SES)
-poor health literacy
URM Patient-reported Barriers to Clinical Trial Participation
Logistical
-lack of transportation/financial burden
- interference with work/family responsibilities
-burdensome procedures
-out-of-pocket expenses
Physician-Related that impact patient
-delayed consideration for trials (referral at more advanced stage)
-minorities less likely to be invited due to physician bias (low SES, perceived less likely to meet stringent eligibility criteria)


Lack of Disease Education
-misconception that trials not appropriate for serious illnesses
Patient & Family Concerns
-primarily about risk
-often query whether therapy has been studied in others of their race/ethnicity
Investigator-cited Barriers to URM Clinical Trial Participation
Logistics
-insurance status
-patient inconvenience cost
-transportation availability
-distance to study site

"Access, not willingness, is where the difficulty lies in recruiting and maintaining minority research participants."

- Comis, et al. *Public attitudes toward participation in cancer clinical trials*. JCO, 2003
- Holcolmbe, et al. *Inclusion of black Americans in oncology clinical trials: the Louisiana State University Medical Center experience*. Am J Clin Oncol, 1999.
- Linden, et al. *Attitudes toward participation in breast cancer randomized clinical trials in the African American community: a focus group study*. Cancer Nursing, 2007.

Root Cause Analysis: URM participation in clinical trials



Why does this matter?

- **Skewed enrollment limits generalizability of results**
  - Biological differences within cancers linked to germline genetic variants on molecular level with respect to race and/or ethnicity
  - Genomic differences may represent actionable targets or account for survival differences (Polite, Cancer 2017)
- **The stakes are high and timely enrollment is of the essence**
  - Black patients more likely than whites to be diagnosed with advanced cancer…more likely to die of their cancer
  - Hispanics, Asians, Pacific Islanders more likely to present at later stage
- **“Boilerplate” inclusion criteria often exclude comorbidities more common in minority populations...without scientific basis**

Fact: there is lack of representation in genomic databases

- **Majority of genomic databases are based on populations of European ancestry**
  - provides reasonable genetic representation of individuals of European descent, poor representation of other ethnic populations
- **GWAS study catalog & databases of genotypes/phenotypes**
  - fewer studies of African, Latin American and Asian ancestral populations
- **Results in a barrier to translating precision medicine research into practice**
- **Important implications for our genomic-based studies**
  - will the URM patients have a genetic change that matches one of the targeted genes being tested?

Haga, Nature 2010; Landry, Precision Medicine 2017

Attitudes toward genomic testing: Black populations

- **Questionnaire on attitudes/experiences with genetic research in 272 persons of African descent**
  - 87% of patients willing to participate in genetic study specifically for ***detection*** of cancer
- **Participants who disagreed that "results from genetic research can explain why some diseases are found more often in some ethnic groups than others" less willing to participate in research studies related to cancer**
- **Despite limited experiences, *majority expressed willingness to participate* (despite concerns about genetic discrimination, stigma and/or poor prognosis)**

Scott, J Community Genet 2020

Attitudes toward genomic testing: Black & Hispanic Populations

- **Structured interviews with 205 patients at inner-city "academic" clinic**
  - 48% Black/AA
  - 29% Hispanic
  - 10% White
- **Participants more likely to report that they would participate in genomics research if personal results were offered than if they were not (89% vs. 62% respectively, $p<0.001$)**
- **Other reasons for willingness fell into four themes:**
  - altruism, benefit to family members, personal health benefit, personal curiosity and improving understanding

Sanderson, J Community Genet 2013

Attitudes toward tissue and biobanking studies

- **Fact: racial/ethnic minorities are underrepresented in biospecimen collection & tissue banks**
- **Mar 2012: report of The Cancer Genome Atlas (biobanking program supported by NCI/NHGRI)**
  - only 9.94% of the 4959 cases were ethnic minorities
- **Research examining "the why" is largely based on focus groups/telephone surveys including healthcare providers, oncology patients, and faith/community leaders**

Hagiwara, J Cancer Educ 2014; Davis, Front Cell Biol 2019

Attitudes toward biobanking studies

- **Facilitators**
  - altruism
  - high interest in medical research, especially if potentially beneficial to families
  - plain language
  - culturally appropriate information
  - convenient access
  - input of a trusted provider
- **Barriers**
  - fear of research exploitation
- **Transparency was most important, and could outweigh mistrust**

Hagiwara, J Cancer Educ 2014; Heredia, Public Health Genomics 2017

We've discussed barriers and the impact on representation of underrepresented minorities in clinical and translational research…now, what can we do?

BE INTENTIONAL ABOUT DIVERSITY…AT THE BENCH, AT THE BEDSIDE, IN THE C-SUITE

Countermeasure	Impact on Target
Ensure race/ethnicity data on study accrual including biobanks exists	Allows early barrier assessment & resource allocation
Careful consideration of specific barriers to minority/low SES populations upfront	Budget planning (offset travel, social work engagement, site locations)
Ensure study staff representative of population; cultural competency programs; engage referring physicians	Ability to proactively address common misconceptions, communication barriers
Equity considerations for immigrant & mixed documentation status families	Fosters trust, early intervention, & feasible risk mitigation
Non-traditional recruitment methods: "Recruitment Triangle", video education, advertisements, community engagement (churches/community centers)	Allows early discussion of trials *prior* to consent process with trusted members; "normalizes" research process

Where do we go from here?

- **When presenting opportunities to participate in research**
  - remember that lack of interest may be due to lack of ***adequate*** awareness
  - address historical events that are tough to talk about
  - address common misconceptions or mistrust concerns that may be specific to certain groups
  - recognize implicit bias that may predispose to assumptions about willingness to participate
  - recognize that speaking the language is not necessarily a surrogate for cultural competency
  - remember that prayer and spirituality can co-exist with interventional research

Access, Access, Access is the primary cited barrier!!!

Taskforce for Promoting Accrual and Diversity in Clinical Trials
Dan L Duncan Comprehensive Cancer Center

Chairs:

Dr Rayne Rouce, BCM Director Outreach and CTCLA

Dr. Maria Jibaja-Weiss COE program

Membership:

Dr Courtney Miller-Chism, Ben Taub Hospital

Dr LaQuisa Hill, CCGT

Dr Valentina Hoyos, Harris Health Breast Clinic

Dr Gustavo Rivero, VA and DLDCCC McNair Clinic

Dr. Betsy Escobar, COE program

Dr. Helen Heslop, Interim DLDCCC Director

Dr. Martha Mims, AD for Clinical Research

Initiatives:

- Educational materials /videos to familiarize patients with trials and team-based approach to clinical research.
- Collaboration with the COE program regarding outreach activities
- Education of clinical trials personnel regarding potential barriers and how to address them
- Partnerships with predominantly minority-serving universities and community-based organizations

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Catchment Area and Accrual

	Catchment Area Demographics 2017[a]	Cancer Cases in Catchment Area 2013-2105[b]	DLDCCC Accruals
Hispanic	**37%**	**17%**	**29%**
Non-Hispanic	63%	83%	71%
White	66%	75%	76%
Black/AA	**17%**	**18%**	**13%**
Asian	8%	5%	6%
AIAN[d]	<1%	0%	3%
NHOPI[d]	<1%	0%	<1%
Multiple[d]	2%	0 0%	4%
Other/Unknown	6%	2%	3%

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Clinical Research Staff

Science benefits from diversity

- **Scientific progress relies on problem solving and innovation**
- **Research shows that scientific groups composed of diverse experiences/expertise are more creative and innovative**
  - innovation is the heart of research
  - ensuring diversity **improves outcomes**
  - different perspectives and backgrounds leads to enhanced knowledge sharing

Science benefits from diversity, Nature 2018

DLDCCC Diversity Council:

clinicians, bench scientists, trainees, nurses, coordinators, program leadership, community members

Practice makes perfect!
Case-based approach: (“JJ”)

- **JJ is a 12y/o male with refractory metastatic soft tissue sarcoma who has disease progression after chemo and radiation. He lives here in Houston with his mom, grandparents and two siblings. His family self-identifies as African American.**

- **JJ’s oncologist begins to discuss treatment options with the family. He reveals that since JJ’s family declined enrolling on an investigational study at diagnosis 3 years ago that allowed sequencing of his tumor, some options may not be available to him.**

- **JJ’s oncologist offers enrollment on a trial now that will allow sequencing of his tumor, with the possibility of later enrolling on a separate trial of a targeted therapy if his tumor harbors an NTRK fusion.**

Practice makes perfect!
Case: ("JJ")

- **At your weekly research group meeting (attended by clinicians, translational researchers, bench scientists, and study staff), JJ's oncologist presents his case along with several questions/concerns from JJ's family. The study team also gives an update on trial accrual thus far.**
  - The PI and research coordinator reveal that there are only 3 spots left on this Phase 1 trial
  - 18 patients have been enrolled to date
    - 14 white, 2 Hispanic, 2 Asian
  - The drug is well-tolerated and there is a signal of benefit
  - There is an interim review with the funding agency planned for 6 weeks from now, as they prepare for an extension study, that is expected to be approved

Practice makes perfect!
Case: ("JJ")

- **Mom wonders why she wasn't aware at diagnosis 3 years ago that JJ enrolling on the study to sequence his tumor could actually benefit *him*. She was under the impression it was just to "store his tumor to study in the future."**

- **Questions/concerns JJ's oncologist relays from his family:**
  - "What if we agree to tumor biopsy now and he doesn't have the mutation? Can he still potentially benefit from enrollment? What do you recommend?"
  - "Does this mutation even occur in black people?"
  - "Has this medication been tested in black people? Is it safe in black people?"
  - "Will the results of this research be shared with the government? I see there are options to give blood also for testing? Could that affect him in the future?"
  - "If we agree to this now and change our minds later, can we stop treatment?"

Case-based approach

- **What are your thoughts about enrollment to date?**
  - Is this a problem? If so, what are some strategies to improve enrollment of certain groups with the expansion cohort?
- **For JJ specifically, what are some barriers to enrollment on the trial & treatment with the targeted agent?**
  - What are strategies to address these barriers especially given the upcoming expansion cohort?
- **How would you address some of JJ's family's concerns?**

Feel free to address this case from the perspective of your actual role if applicable!

Thank you!

All TXCH Researchers & Leadership: Clinical, Translational and Basic

DLDCCC Diversity Task Force and COE

Office of Institutional Diversity, Equity & Inclusion

Dr. Pavan Reddy, Helen Heslop, Martha Mims & CAGT/DLDCCC Leadership

TSU CBMHR & COE

Dr. Veronica Ajewole; Dr. Omonike Olaleye

Dr. Suzanne Tomlinson

All Clinical Teams, Research Participants, and Families

CENTER FOR CELL & GENE THERAPY

Leukemia & Lymphoma Society

NIH Lymphoma SPORE

Leukemia Texas

Amy Strelzer Manasevit/Be The Match

Questions

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