

Cancer Health Disparities; Challenges and solutions

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AACR Cancer Disparities Progress Report 2020

34% of cancer deaths among all U.S. adults ages 25 to 74 could be **prevented if socioeconomic disparities were eliminated** (45).

Eliminating health disparities for racial and ethnic minorities from 2003 to 2006 would have reduced

Direct medical costs by:
\$230 BILLION

Indirect costs associated with illness and premature death by:
>\$1 TRILLION



U.S. Cancer Health Disparities at a Glance

Adverse differences in numerous measures of cancer burden exist among certain population groups in the United States. Examples of such disparities include:

111% and 39% HIGHER RISK	African American men and women have a 111 percent and 39 percent higher risk of dying from prostate cancer and breast cancer , respectively, compared with their white counterparts (4).
20% and 38% MORE LIKELY	Hispanic children and adolescents are 20 percent and 38 percent more likely to develop leukemia than non-Hispanic white children and adolescents, respectively (5).
TWICE AS LIKELY	Asian/Pacific Islander adults are twice as likely to die from stomach cancer as white adults (6).
TWICE AS LIKELY	American Indian/Alaska Native adults are twice as likely to develop liver and bile duct cancer as white adults (6).
3.5X HIGHER	Men living in Kentucky have lung cancer incidence and death rates that are about 3.5 times higher than those for men living in Utah (7).
<HALF AS LONG	Patients with localized hepatocellular carcinoma, the most common type of liver cancer, who have no health insurance have overall survival that is less than half as long as those who have private health insurance (8 months versus 18 months) (8).
35% HIGHER	Men living in the poorest counties in the United States have a colorectal cancer death rate that is 35 percent higher than that for men living in the most affluent counties (6).
70% MORE LIKELY	Bisexual women are 70 percent more likely to be diagnosed with cancer than heterosexual women (9).

As of 2018, nearly **80 percent** of individuals included in genome-wide association studies—the most common type of research that detects genetic alterations that are associated with disease risk—**were of European descent; 10% were Asian, 2% African, 1% Hispanic, and less than 1% other population groups** (92).

DEATH RATES*

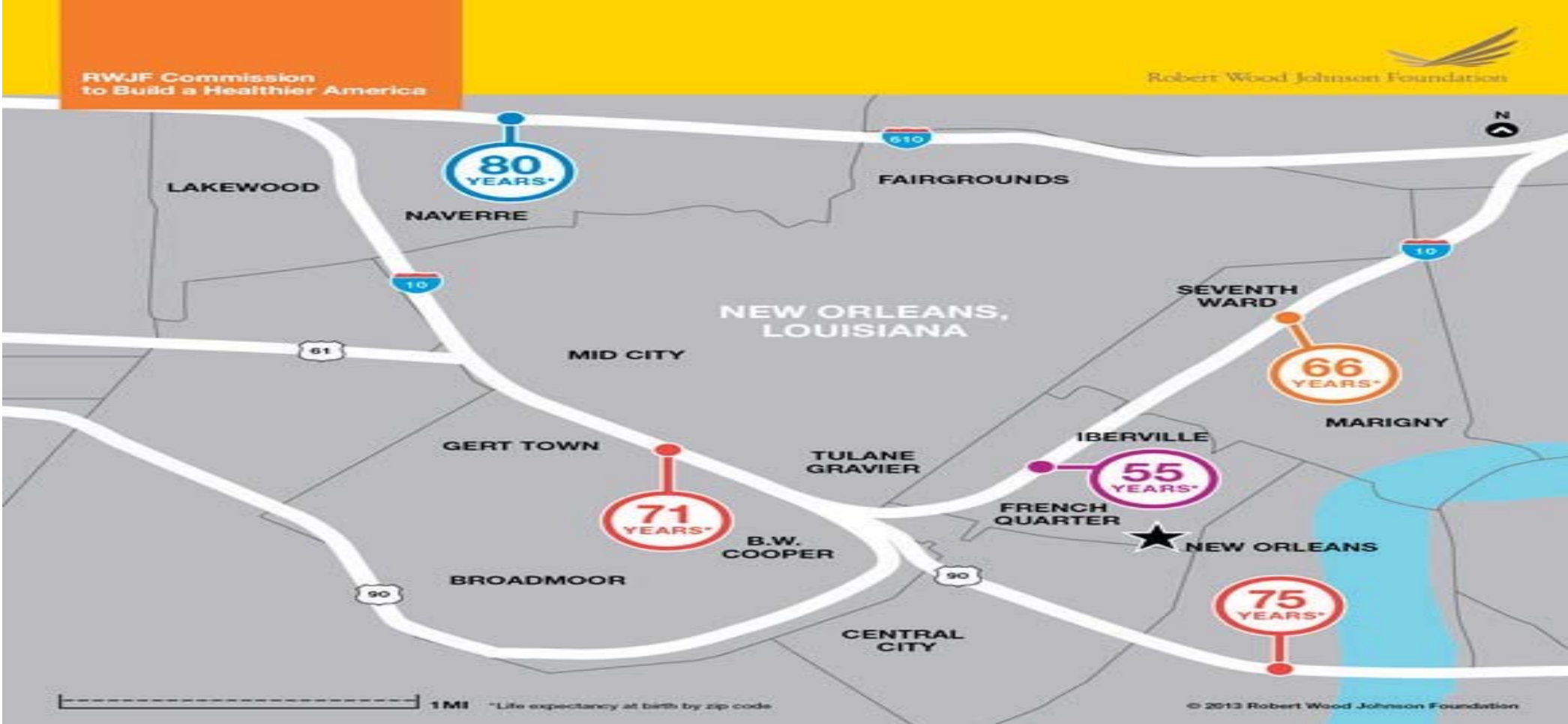
Cancer Type	African Americans	Whites	Rate Ratio
Prostate, males	38.4	18.2	2.11
Stomach	5.3	2.6	2.04
Multiple myeloma	6.0	3.0	2.00
Cervix uteri, females	3.1	2.2	1.41
Breast, females	27.3	19.6	1.39
Colorectal	18.3	13.4	1.37
Liver and intrahepatic bile duct	8.5	6.3	1.35
Pancreas	13.3	11.0	1.21
Lung and bronchus	40.2	39.3	1.02
Kidney and renal pelvis	3.4	3.7	0.92

*Both sexes unless otherwise specified

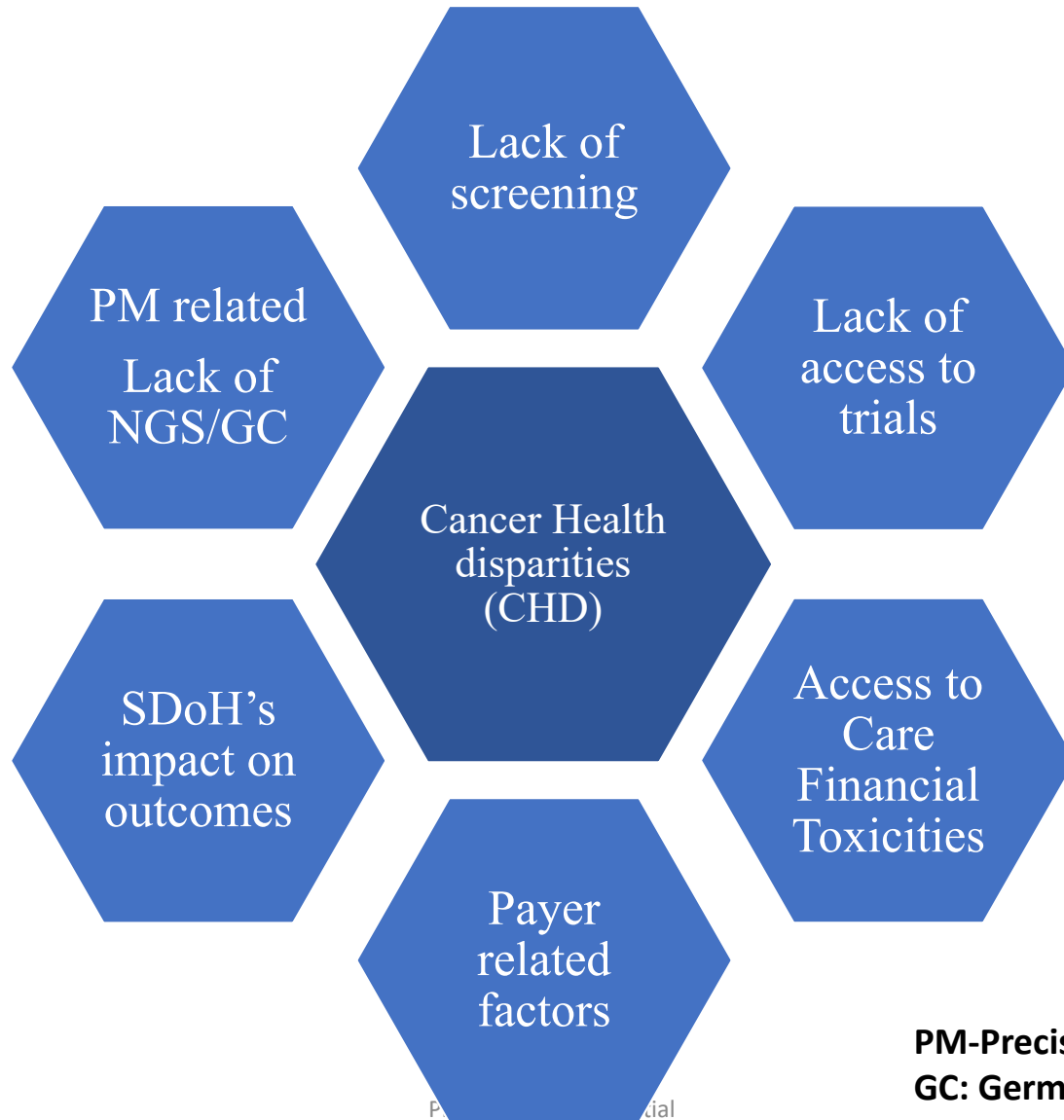
Data from: SEER Cancer Statistics Review 1975-2016 (Howlander N, Noone AM, Krapcho M, Miller D, Brest A, Yu M, Ruhl J, Tatalovich Z, Mariotto A, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds). SEER Cancer Statistics Review, 1975-2016, National Cancer Institute. Bethesda, MD, https://seer.cancer.gov/csr/1975_2016/, based on November 2018 SEER data submission, posted to the SEER website, April 2019.

Our limited knowledge of cancer biology in racial and ethnic minorities diminishes the potential of precision medicine in these populations.

Map of life expectancy: disparities in New Orleans, Louisiana. NOTE: The average life expectancy gap for babies born to mothers in New Orleans can reach up to 25 years. SOURCE: RWJF, 2013b.



Summary of factors leading to disparities



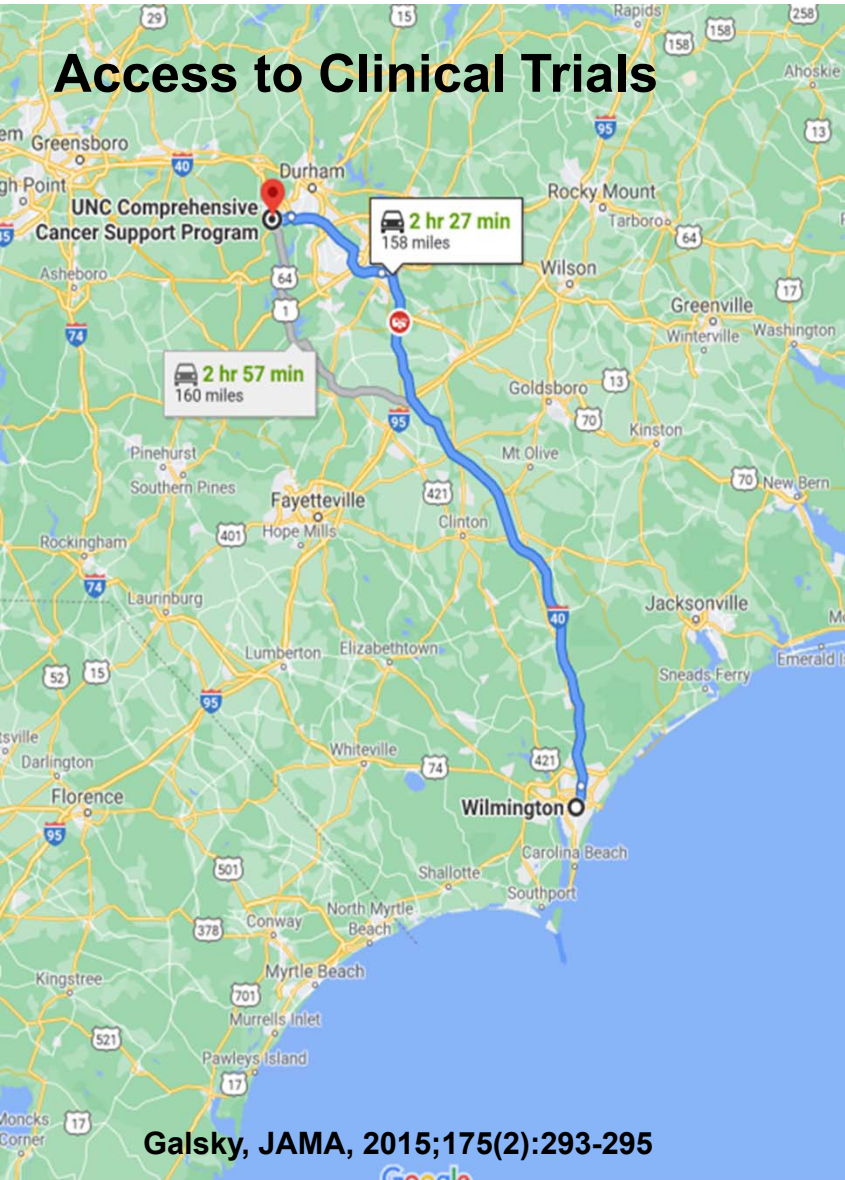
PM-Precision Medicine
GC: Germline testing

Negative
Impact of
unmet needs;
not addressed
anywhere

Factor	Magnitude of problem	Impact
Cancer Health Disparities	34% preventable deaths	\$230 Billion over 3 years Additional \$1 trillion in direct cost
Cancer screening	86% eligible patients did not receive lung cancer screening	Adverse outcomes Additional spending
Lack of access to trials	Adverse outcomes	Yes
Precision Medicine (biomarker testing)	Worsened CHD, extra spending and worse outcomes	Both financial and worse outcomes
Germline testing	Very inadequate	Worse outcomes; extra spending
Social Determinants of Health	Contributes to CHD and worse outcomes	Results in extra spending
Part B Drug Prices	Current trend in drug prices is unsustainable	Access and financial toxicities
Payer related factors	National issues; multi state AG investigations; legislations, LBM	Delayed care; excess spending

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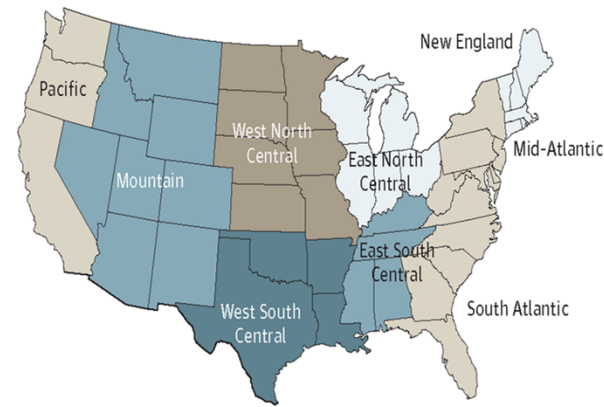
Access to Clinical Trials



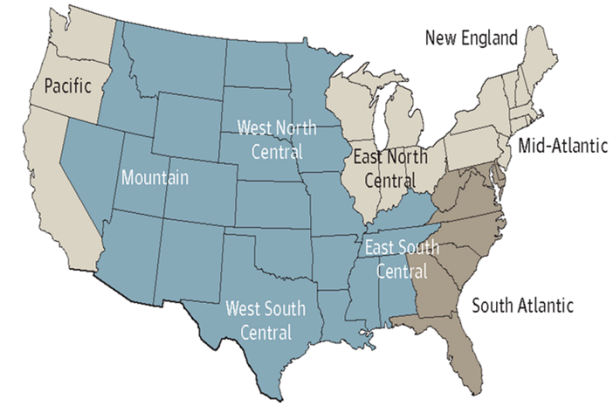
Some clinical trials are only available in major cities and require substantial *travel* for patients; 40% of patients drive more than 60 minutes one way



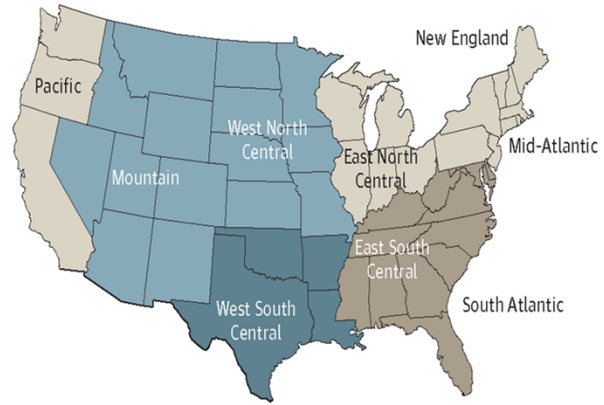
A Metastatic breast cancer



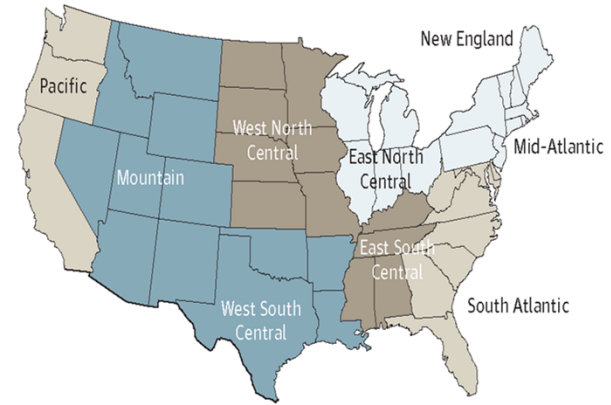
B Prostate cancer



C Colorectal cancer



D Non-small cell lung cancer



Disparities in cancer screening

Rates of breast and CRC screening in uninsured age-eligible adults are

50%

lower than those in insured age-eligible adults.²

6/10

Women eligible for breast, cervical, and CRC screenings are not up-to-date with these screenings. The proportion is even higher among women with a high school degree or less.³

Rates of CRC screening among men in low-income counties are

35%

lower than in high-income counties.⁴



Individuals in non-Medicaid expansion states are least likely to be up-to-date with CRC screening compared to those in expansion states.⁵

Racial and ethnic disparities persist in access to timely cancer screening and detection.¹

How do health outcomes compare across groups?

- ❖ individuals have the highest incidence and mortality rates for CRC. About half of the racial disparity in CRC mortality rates is attributed to a combination of less screening and lower state-specific survival among Black individuals.⁴
- ❖ Cervical cancer incidence and mortality rates are highest among non-Hispanic Black, American Indian, Alaska Native, and Hispanic individuals, largely reflecting socioeconomic disparities and a lack of access to care, including cervical cancer screenings.⁴

Black individuals with cancer are more likely than white individuals to be diagnosed at later stages for breast, CRC, and cervical cancers, partly due to lower screening rates and timely follow-up for abnormal results (Source: ACS)

Lung Cancer Screening Rates for Eligible Patients with Coverage Through Medicaid or Medicare

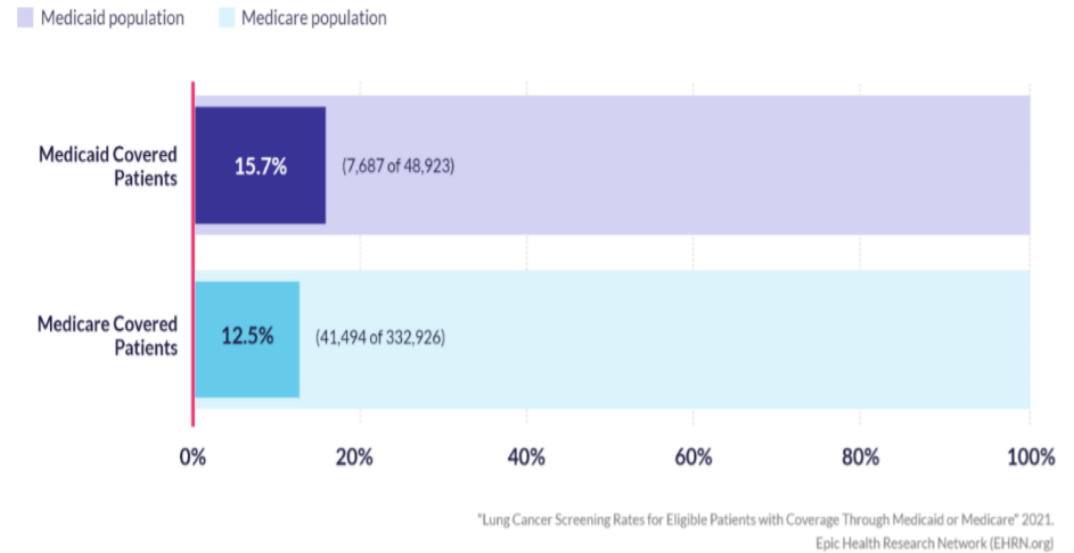


Figure 1. The percentage of patients whose Medicaid or Medicare coverage includes lung screening exams who received a lung cancer screening exam, had a documented pack-year value of at least 30, and had at least one office visit or telemedicine encounter in 2019 and 2020.

Biomarker (CGP) and Germline testing

- NCI and the National Human Genome Research Institute, sequenced the genome of close **to 1,100 lung cancer patients (with only 7% AA population).**
- There are socio-economic inequalities in predictive biomarker tests and biological and precision therapy utilization
- **Only 1 in 4 Black patients with advanced or metastatic NSCLCA underwent NGS before first-line therapy compared with one in three white patients, according to results of a retrospective study (ASCO 2021)**
- Germline testing (INTERCEPT)
 - A cohort study of 2,984 unselected patients with cancer, universal germline genetic testing found that **13.3% harbored a pathogenic germline variant (PGV) — and 48% of those PGVs would not have been detected using standard guidelines**
 - **30% of patients with a high-penetrance PGV** received modifications to their treatment based on the finding
 - Study Finds Universal Genetic Testing Uncovers More Inherited Mutations vs Guideline-Based Genetic Testing

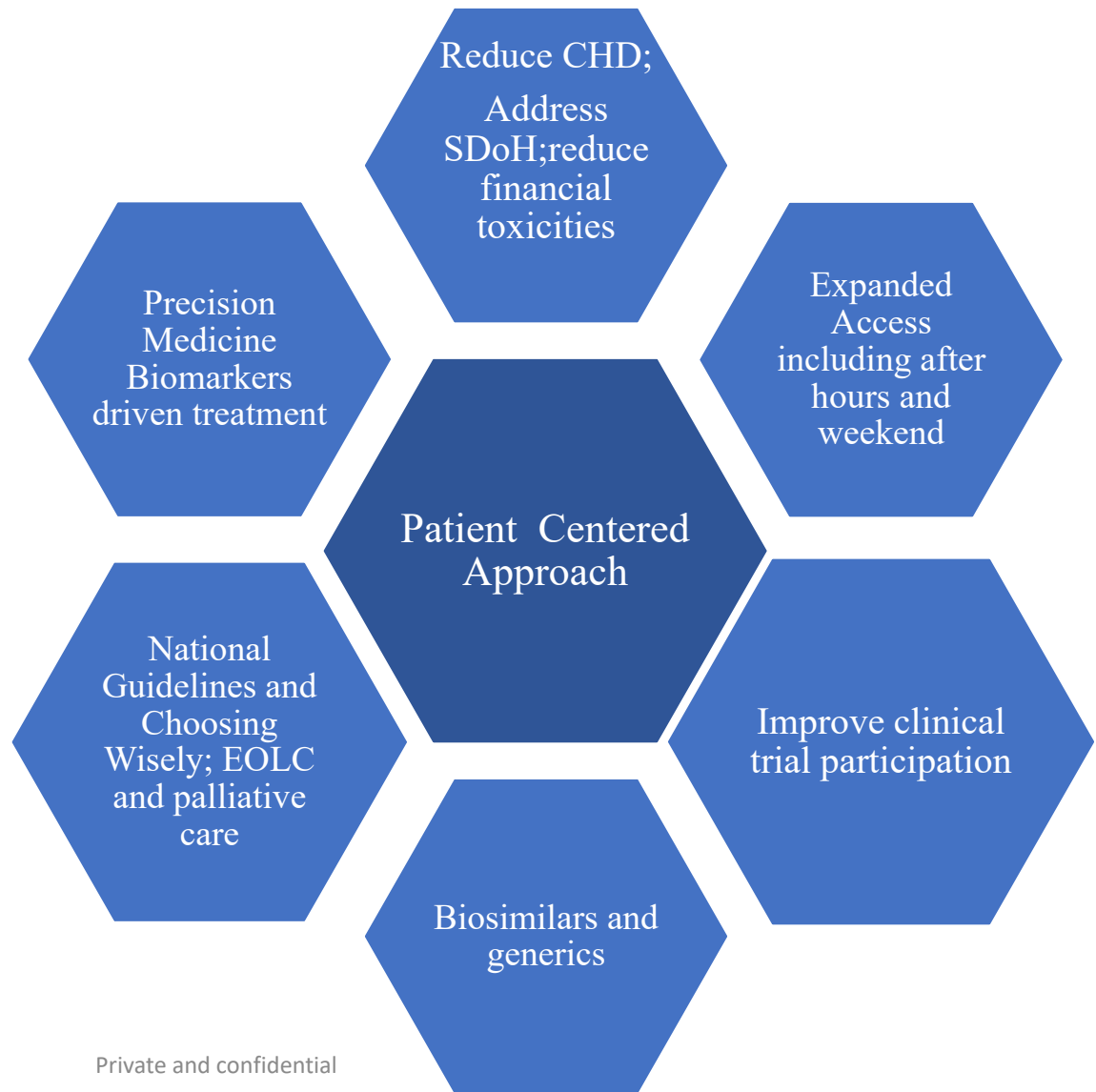
Lack of Screening and impact on individual and population health

- Cancer screening saves lives and reduces total cost of care during lifetime of beneficiaries
- **87% of Eligible Seniors Do Not Receive Lung Cancer Screenings; Lung cancer screenings were higher among Medicaid beneficiaries in states that covered the preventive service.**
- Over 7,600 Medicaid beneficiaries—or **15.7 percent**—received a screening, leaving approximately 84 percent that did not. Nearly 41,500—or **12.5 percent**—of the Medicare beneficiaries received the screening. Over 292,400 Medicare beneficiaries who were eligible for a lung cancer screening—or 87.1 percent of eligible patients—did not get screened.
- Breast cancer is the most common cancer worldwide and the most common cancer diagnosed in American women. It is second leading cause of cancer death in American women.
- Even though curable when caught earlier (close to 99%), close to 30% women did not get mammography for breast cancer between 2017-2019

The impact of high cost of cancer care on patients, limiting access to care

- A 2018 payer survey of US health plans representing 105 million medical pharmacy lives shows that 51% of commercial payers require a coinsurance for specialty drugs covered under medical benefit
- Coinsurance ranges from 23-26% (according to Serono survey representing 76 million lives);
- With increased cost-sharing, patients are less likely to initiate therapy and more likely to discontinue existing therapy
- 19% or 6 million Medicare FFS beneficiaries do not have supplemental coverage
- Annual OOP costs may reach up to approximately 58% of the median per capita income of Medicare beneficiaries in the United States;
- These prices may impact 300k patients annually
- Annual OOP cost varies between \$2500 to \$15K

Core components To Solve CHD through AAPM



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How this model differs from current OCM or even projected OCF

Factor	OCM	OCF	Palmetto AAPM
Cancer Health Disparities	No	NO	Addresses to the core
Cancer screening	No	No	Address to the core; mandatory
Lack of access to trials	Encourage	?	Encourages participation of ethnic minorities
Precision Medicine (biomarker testing)	No	No	Mandatory
Germline testing	No	No	Mandatory when indicated
SDoH	No	No	Mandatory data collection
Palliative and EOLC	Yes; still only 3 days hospice stay	Yes	More aggressive approach

OCF information based on public hearing Nov 2019 at HHS/CMMI

Phase I: York, Lancaster, Chester, Cherokee, Ft Lawn, Kershaw; up and running

No one Left Alone (NOLA) Initiative
Sponsored by Carolina Blood and Cancer;
started April 2021

If successful expand project
to nationwide

Phase II (Likely Spring 2022); other
SC practices (willing); GA practices

Uninsured patients, under
insured patients, patients
in need for ride,
transportation and child-
care, utility

Focus areas:

Access to care: Onboarded

Access to testing: On boarded

Access to Trials: On boarded

SDoH: Phase IB;

Access to screening: Phase IC

Funding

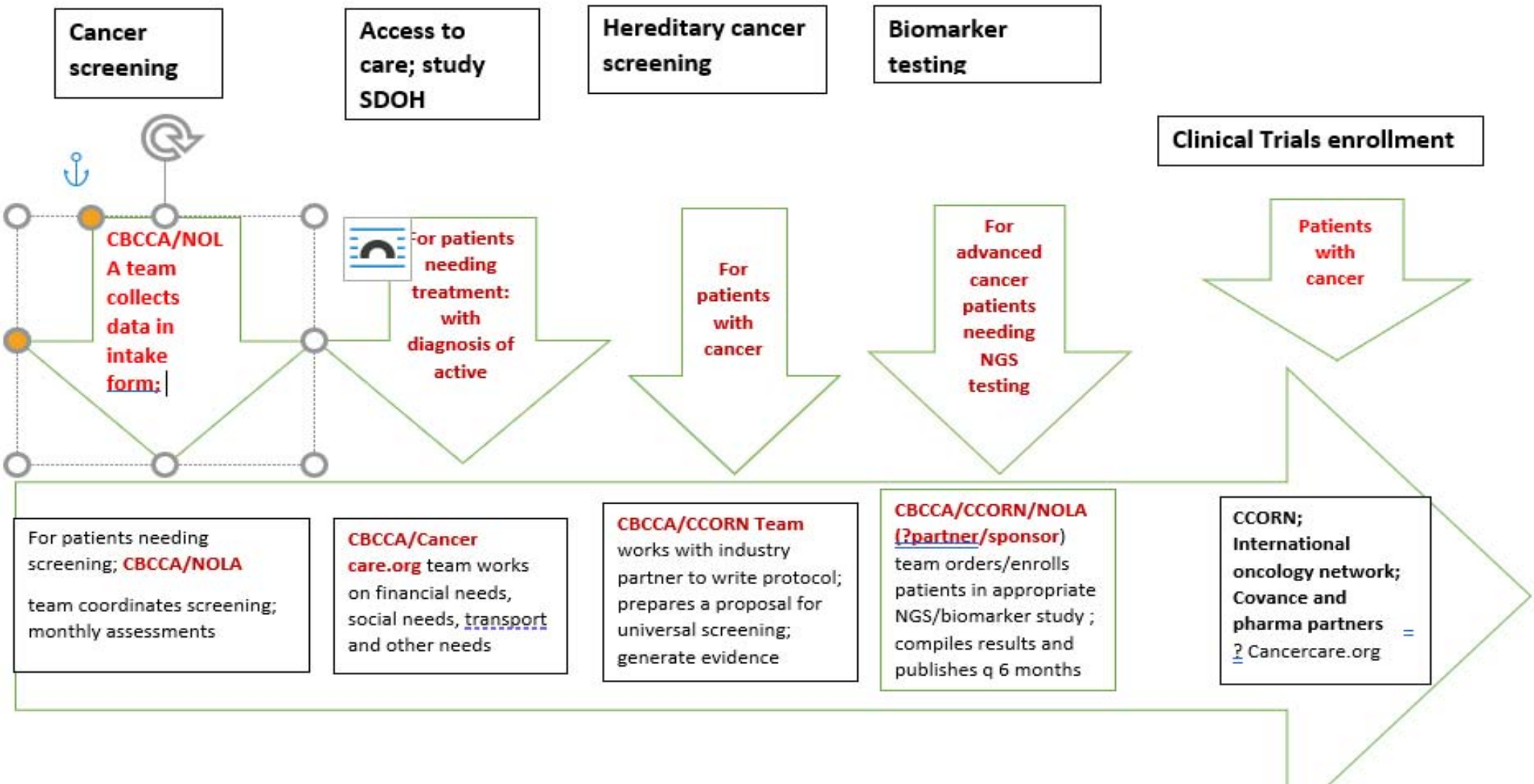
CBCCA: \$150k; Congressman
(personel); local foundations; Pharma
grant; RWE studies (**Labcorp; SEMA4**)
Federal, state and county resources 1115
Waivers, CARES II; GPO, Research

Roles and responsibility:

**CBCCA: Write grants, identify foundations.
raise funds and operationalize**

A team : Community outreach; local
lawmakers and government resources

Beneficiaries: Patients, independent
practices, GPO, Labs, CROs and Pharma;
(higher number of covered lives); we
anticipate added rev of 7-11%



Carolina Blood and Cancer care; No one Left Alone (NOLA) Initiative 2021

Issue: Access to Care

25% Medicare only; 76% Commercially insured high OOP Cost

- Onboarded 154 patients; raised \$127,908 for direct assistance,
- \$1,272,171.21 for indirect drug assistance (free drug program)
- \$340,891.74 for oral prescriptions (transactions 1691/ assistance was needed in 487)
- Total assistance \$1,613,062.95; Next Phase will collect SDoH on over 1000 patients to link access to care issues

Issue: CGP/Biomarker/Germine testing

Only 25% eligible patients get tested for CGP; rate in lower in minorities

- Solutions: Increased biomarker testing/HRD testing to almost 85% of eligible patients with cancer
- PREFER Registry: Started in partnership with Labcorp for increasing biomarker testing; SDoH
- PROSPECTIVE Registry (SEMA4); SDoH
- Germline Cancer Testing (in conversations with national lab)

Cancer Screening/Clinical Trials

Only 15% patients eligible (USPSTF) for lung cancer get screened

- Will start lung cancer screening in next month or so; will coordinate with local resources for additional screening needs; started blood based screening Galleri (GRAIL)
- CCORN (community clinical oncology research network) have started collaborating with CROs and multiple sites to provide resources for RWE studies and hopefully get phase III studies (subject to funding)