Cancer Health Disparities; Challenges and solutions through NOLA (No one left Alone)

- Kashyap Patel, MD, AboiM, BCMAS
- **Recognized by the US congress as an outstanding citizen who set the Gold Standard for decades**
- CEO, Carolina Blood and Cancer Care
- Imm. past President, Community Oncology Alliance
- Imm. past Chairman, Clinical Affairs, Association of Community Cancer Centers
- Medical Director, International Oncology Network
- Medical Director, Blue Cross Blue Shields (consultant), SC
- Associate Editor in Chief, AJMC (EBO)
- Member task force, NCCN DEI initiative

Private and confidential
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

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).

**U.S. Cancer Health Disparities at a Glance**

- **11% and 39% Higher Risk**
- **20% and 38% More Likely**
- **Twice As Likely**
- **3.5X Higher**
- **<Half As Long**
- **35% Higher**
- **70% More Likely**

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

*Both sexes unless otherwise specified*


Our limited knowledge of cancer biology in racial and ethnic minorities diminishes the potential of precision medicine in these populations.
Access to cancer care is bigger than just financials.
Disparities in cancer screening

- 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.  
- 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.
- 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)
# Social Determinants of Health (SDOH)

<table>
<thead>
<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
<th>Health Care System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Housing</td>
<td>Literacy</td>
<td>Hunger</td>
<td>Social integration</td>
<td>Health coverage</td>
</tr>
<tr>
<td>Income</td>
<td>Transportation</td>
<td>Language</td>
<td>Access to healthy options</td>
<td>Support systems</td>
<td></td>
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<tr>
<td>Expenses</td>
<td>Safety</td>
<td>Early childhood education</td>
<td>Social integration</td>
<td>Community engagement</td>
<td></td>
</tr>
<tr>
<td>Debt</td>
<td>Parks</td>
<td>Vocational training</td>
<td>Support systems</td>
<td>Community engagement</td>
<td></td>
</tr>
<tr>
<td>Medical bills</td>
<td>Playgrounds</td>
<td>Higher education</td>
<td>Social integration</td>
<td>Discrimination</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>Walkability</td>
<td></td>
<td></td>
<td>Stress</td>
<td>Provider availability</td>
</tr>
<tr>
<td></td>
<td>Zip code / geography</td>
<td></td>
<td></td>
<td></td>
<td>Provider linguistic and cultural competency</td>
</tr>
</tbody>
</table>

**Health Outcomes**
- Mortality, Morbidity, Life Expectancy
- Health Care Expenditures
- Health Status
- Functional Limitations

Kaiser Family Foundation, Racial equity and Health Policy; kff.org
Summary of Factors Leading to Disparities

- Lack of Screening
- Lack of Access to trials
- Access to Care Financial Toxicities
- Payer-Related Factors
- SDoH Impact on Outcomes
- Cancer Health disparities (CHD)
- Lack of NGS and Other Testing (PM)
# No One Left Alone (NOLA)
Solving cancer health disparities through new value-based care models

<table>
<thead>
<tr>
<th>Improve SDoh data collection</th>
<th>Improve access to cancer care</th>
<th>Improve access to testing and therapies</th>
<th>Increase in clinical trial participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandate the collection and reporting of key data elements to better understand the sub-populations and their health outcomes</td>
<td>Increase access to cancer screening</td>
<td>Include appropriate biomarker testing</td>
<td>Identify community clinics, serving these patient populations</td>
</tr>
<tr>
<td>Extend clinic availability, including after hours and weekends</td>
<td>Lower financial toxicities</td>
<td>Leverage biomarker findings to select most appropriate treatment options</td>
<td>Provide customized patient materials to increase participation</td>
</tr>
<tr>
<td>Reduce financial toxicities</td>
<td></td>
<td>Lower costs through the use of generics and biosimilars</td>
<td>Leverage real world evidence studies to better understand the impact of disparities on patient outcomes</td>
</tr>
</tbody>
</table>

SDoh: Social Determinants of Health

Private and confidential
**NOLA PATIENT INTAKE FORM/Cancer screening/SDOH/Cognitive assessment needs**

**TODAY'S DATE**

**Chart No.**

**FIRST NAME**

**LAST NAME**

**DOB:**

1. What is your country of birth? USA, including Puerto Rico / Other

2. How many years have you lived in the United States?

3. **WHAT IS YOUR RACE?**

4. What is your Gender/sexual orientation: Male / Female / Transgender / Prefer not to identify

5. **Sexual orientation**: heterosexual/bisexual/LGBT/prefer not to identify

6. **EDUCATION STATUS**: Less than High school / High school / Undergraduate / Graduate / Doctorate

7. **WHAT IS YOUR MARITAL STATUS?**: Married / Living as married / Widowed / Divorced / Separated / Never married / Other

8. **ANNUAL INCOME** (household): $0-$24,999 / $25,000-$49,999 / $50,000-$74,999 / $75,000-$100,000 / $100,000-$149,999 / $150,000-$199,999 / $200,000 or more

9. **HOW OFTEN DO YOU FEEL THIS**

   - I DON'T HAVE ENOUGH MONEY TO PAY MY BILLS
   - NEVER / RARELY / SOMETIMES / OFTEN / ALWAYS

10. **EMPLOYMENT**: FULL TIME / PART TIME / UNEMPLOYED / RETIRED / SELF EMPLOYED / STUDENT

11. **IF SELF-EMPLOYED / OR EMPLOYED-FIELDS**

    - Sales / IT / Hardware Software / Transportation / Homemaker / Education / Clergy / Healthcare / Hospitality

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**Access to healthcare/Transportation**

- Do you have a doctor or clinic for your regular care? **If no where do you get your care**
- In the past year, was there a time when you needed health care but could not get
- Do you have any problems with transportation to your health care visits?

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**Language/literacy/Mental Health**

- Are you able to communicate with your doctor in your language?
- Do you have cell phone access to the internet, if yes, do you use for visit
- Do you often feel anxious, depressed, or worried? Are you experiencing any memory lapses or forgetfulness? Do you ever feel confused?
- Are you under care from a psychologist and or mental health counselor
- Are you on any medications like anti-anxiety, sleep or opioids

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**Food insecurity**

- In the past 12 months has there been a point where the food you bought just didn’t last and you didn’t have money to get more?
- Within the past 12 months, have you worried that your food would run out before you got money to buy more?

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**Family responsibilities for family members/friends/social support/community activity**

- Are you responsible for child care in your family? Do problems getting childcare make it difficult for you to work/study
- Do problems getting childcare make it difficult for you to get healthcare?
- Do you have friends or neighbors support

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**Housing: access, utility services, household density**

- Do you have any of these problems with your housing? Pest / Infestation / Mold / Lead paint or pipes / Inadequate heat / Oven or Stove not working / Water Leaks / No or non-function smoke detector / None of the above
- How many people live in your house/apartment?
- Do you exercise
- Do you drink alcohol
- Do you smoke
- Do you take any recreational drugs

**PERSONAL AND FAMILY HISTORY OF CANCER**

<table>
<thead>
<tr>
<th>12. FAMILY HISTORY OF CANCER</th>
<th>AGE/YEAR AT DIAGNOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. <strong>SELF</strong></td>
<td>Yes / No</td>
</tr>
<tr>
<td>b. <strong>Siblings</strong></td>
<td>Yes / No</td>
</tr>
<tr>
<td>c. Birth mother</td>
<td>Yes / No</td>
</tr>
<tr>
<td>d. Her Parents</td>
<td>Yes / No</td>
</tr>
<tr>
<td>e. Her Siblings</td>
<td>Yes / No</td>
</tr>
<tr>
<td>f. Father</td>
<td>Yes / No</td>
</tr>
<tr>
<td>g. His Parents</td>
<td>Yes / No</td>
</tr>
<tr>
<td>h. His Siblings</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>
Cancer Screening Assessment

Does any of your family members had colon cancer? Yes (at what age) No

Do you have a history of cancer? Yes or no? No

Have you undergone any colonoscopy? Yes or no? No

Lung Cancer Screening Assessment

Do you smoke? Yes No

How many pack-years? [Blank]

Have you undergone a lung cancer screening? Yes or no? No

Have you ever had a mammogram? Yes or no? No

Have you ever had a mammogram? Yes or no? No

Have you ever had a breast biopsy? Yes or no? No

If "Yes", what is the result? Right left

Result: Breast cancer pre-cancerous

Do you or anyone in your family have a history of breast cancer? Yes No

If yes, what is the type of mutation? [Blank]

Cervical Cancer Assessment

Have you ever had a Pap smear? Yes No Don't know

If "No", is there a reason why you have not had a Pap smear in the past 2 years? [Blank]

Further Cancer Screening

Have you ever had your PSA checked? Yes No Don't know

Have you ever had your bone density checked? Yes No Don't know

Bone Density

Do you have a living will or have you completed an advance care plan? Yes No Don't know

Advanced Care Planning

Do you want us to help you? (will not cost you) Yes No Don't know

Research: Our cancer center participates in multiple national research studies to develop understanding about cancer, how it occurs, what treatment is available, how to develop new treatments and how to bring equity, equality and better access to all socioeconomic class of individuals. All of these studies are in full compliance of regulatory agencies like Office of Human Research Protection ACT.

Would you be willing to participate in research to better understand disease progression by certain tests (blood or tissue)? Yes No If not why

Would you be willing to participate in a research that helps develop new drugs for cancer patients (including for you or future) Yes No If not why

Patient Signature: ___________________________ Date: [Blank]
Identified 700 plus patients who did not have cancer screening and arrangements being made for same

Raised close to $3 million last year for OOP cost or free drugs; Created insurance fund and already supported 20 plus patients

Pilot already in place with a large lab with purpose to identify gaps in germline tests; paper expected soon

Three large studies; reached NGS testing rate to 80% plus

Starting 3 phase III studies soon