COE Catchment Area Assessment: State of Georgia Cancer Burden & Priorities
State Population Demographics: GA

Georgia:
57900 sq mi; 78% rural
10.7M total population
2.3M reside in rural GA

Age Distribution (%): GA vs. US

Racial Distribution (%)

Distribution by Sex (%)

Data Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates
Age-Adjusted Overall Cancer Incidence: US & GA Top 10 Cancers

US, All Cancers, 2015-2019

- Female Breast: 128.1 per 100,000 people
- Prostate: 109.9 per 100,000 people
- Lung and Bronchus: 56.3
- Colon and Rectum: 37.7
- Corpus and Uterus, NOS: 27.7
- Melanomas of the Skin: 22.9
- Urinary Bladder: 19.4
- Non-Hodgkin Lymphoma: 19.0
- Kidney and Renal Pelvis: 17.3
- Leukemias: 14.1

Georgi,G All Cancers, 2015-2019

- Prostate: 132.6 per 100,000 people
- Female Breast: 129.1 per 100,000 people
- Lung and Bronchus: 59.8
- Colon and Rectum: 40.4
- Melanomas of the Skin: 26.3
- Corpus and Uterus, NOS: 24.7
- Urinary Bladder: 18.2
- Non-Hodgkin Lymphoma: 17.9
- Kidney and Renal Pelvis: 17.4
- Leukemias: 14.4

Higher rates for prostate, breast, lung, colorectal, melanoma, kidney, and leukemias

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022
<table>
<thead>
<tr>
<th></th>
<th>1973-1979 (rate %)</th>
<th>2000-2009 (rate %)</th>
<th>2010-2014 (rate %)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-64</td>
<td>43.6</td>
<td>68.4</td>
<td>74.3</td>
</tr>
<tr>
<td>65-74</td>
<td>37.5</td>
<td>60.3</td>
<td>65.7</td>
</tr>
<tr>
<td>≥75</td>
<td>26.7</td>
<td>45.4</td>
<td>51.1</td>
</tr>
<tr>
<td><strong>SEX</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>38.1</td>
<td>61.3</td>
<td>67.1</td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>62.6</td>
<td>69.6</td>
</tr>
<tr>
<td><strong>RACE/ETHNICITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>37</td>
<td>63.2</td>
<td>69.7</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>32.4</td>
<td>54.5</td>
<td>61.6</td>
</tr>
<tr>
<td>Hispanic (all races)</td>
<td>36.3</td>
<td>64.1</td>
<td>67.7</td>
</tr>
</tbody>
</table>

Survival from leukemias has improved overall across racial/ethnic, most age-groups and both sexes during the period of 1973 through 2014. **However, African-American patients and those >75 years experienced the smallest survival gains.**
Multiple Myeloma

• Obesity is an established risk factor for MM

• Obesity is more prevalent in Blacks vs Whites; ~48% of all non-Hispanic Blacks have a higher prevalence of obesity-related medical comorbidities vs 34.5% among all non-Hispanic Whites

• Blacks may be diagnosed with MGUS at higher rates or younger age due to increased medical intervention secondary to obesity & comorbidities

• Blacks may also be UNDER-diagnosed due to inadequate medical care/access

• Question of disparities due to Black race in progression of MGUS to MM needs further research

• Studies are needed that examine molecular mechanisms of clonal evolution early in the continuum of MGUS-SMM-MM stages for high-risk populations, including Blacks and populations with African ancestry

• Investigations that incorporate genomic ancestry would be important to clarify role of genomic ancestry rather than self-identification of race
Age-Adjusted Mortality - US vs GA Top 10 Cancers – All Races, both sexes

US, All Cancers, 2015-2019

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Mortality Rate per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung and Bronchus</td>
<td>36.7</td>
</tr>
<tr>
<td>Female Breast</td>
<td>15.5</td>
</tr>
<tr>
<td>Prostate</td>
<td>18.9</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>13.4</td>
</tr>
<tr>
<td>Pancreas</td>
<td>11.1</td>
</tr>
<tr>
<td>Liver and Intrahepatic Bile Duct</td>
<td>6.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>6.5</td>
</tr>
<tr>
<td>Leukemias</td>
<td>6.1</td>
</tr>
<tr>
<td>Non-Hodgkin Lymphoma</td>
<td>5.3</td>
</tr>
<tr>
<td>Corpus and Uterus, NOS</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Georgia, All Cancers, 2015-2019

**Big 4 Cancers: Excess Mortality in GA**

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Mortality Rate per 100,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung and Bronchus</td>
<td>39.0</td>
</tr>
<tr>
<td>Prostate</td>
<td>21.4</td>
</tr>
<tr>
<td>Female Breast</td>
<td>21.1</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>14.5</td>
</tr>
<tr>
<td>Pancreas</td>
<td>10.9</td>
</tr>
<tr>
<td>Ovary</td>
<td>5.5</td>
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<tr>
<td>Liver and Intrahepatic Bile Duct</td>
<td>5.5</td>
</tr>
<tr>
<td>Leukemias</td>
<td>5.8</td>
</tr>
<tr>
<td>Non-Hodgkin Lymphoma</td>
<td>5.0</td>
</tr>
<tr>
<td>Corpus and Uterus, NOS</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022
Top Cancers - **Mortality** - Males & Females

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022
### Key Cancers Representing Excess Mortality in GA Counties:

<table>
<thead>
<tr>
<th>Cancer Type &amp; GA/US Rates</th>
<th>Target Population</th>
<th>County-Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breast 27.5/27.3</strong></td>
<td>Black females</td>
<td>Meriwether 48.5; Thomas 41.0; Spalding 35.1</td>
</tr>
<tr>
<td>Colorectal 18.4/18.0</td>
<td>Blacks, both sexes</td>
<td>Peach 36; Jefferson 33.2; Hall 30.5; Bulloch 28</td>
</tr>
<tr>
<td><strong>Lung 37/40</strong></td>
<td>Blacks, both sexes</td>
<td>Warren 95; Elbert 72.6; Grady 67; Walton 65</td>
</tr>
<tr>
<td>Melanoma 2.9/2.6</td>
<td>Whites, both sexes</td>
<td>Catoosa 6.5; Gordon 6; Muscogee 4.7; Walton 4</td>
</tr>
<tr>
<td>Oral Cavity 2.8/2.5</td>
<td>Whites, both sexes</td>
<td>Whitfield 4.6; Clayton 4.6; Bartow 4.1</td>
</tr>
<tr>
<td>Cervix 2.3/2.2</td>
<td>All races, females</td>
<td>Richmond 3.9 (5.2 Blacks); Muscogee 3.8</td>
</tr>
<tr>
<td>Pancreas 11/13.2</td>
<td>All races, both sexes, all ages</td>
<td>Jefferson 23.6, Wayne 20.1, Bryan 17.9, Coffee 16.6</td>
</tr>
<tr>
<td>Pancreas (Black only), 65+</td>
<td>Blacks only, both sexes, 65+</td>
<td>Fayette 131.3, Newton 120.8, Chatham 105.3</td>
</tr>
</tbody>
</table>

Compared to the national average, GA population has less education and less income. Greater % of GA’s population is uninsured, unemployed, and lives in poverty.

Data Source: State Cancer Profile from 2015-2019 American Community Survey 5-year Estimates
Social Determinant of Health
Access to Any Broadband (including cellular), GA

The metro Atlanta area and many parts of coastal GA have a greater percentage of households with access to broadband. Counties with lower rates (<50%) of access to broadband include:
1. Telfair
2. Wheeler
3. Taliaferro
4. Warren
5. Wilkes
6. Echols
7. Clinch
8. Hancock
9. Baker
10. Miller

Note: For any broadband, including cellular, higher percentages are better. For the remaining items (no computing service, smartphone only, percent in poverty), lower percentages are better.

Data Source: AHRQ SDOH Database (Beta version), from American Community Survey 5-year files, 2014-2018.
Social Determinant of Health
Smartphone Only, No Other Device, GA

Rural areas of east and south GA have a greater % of residents owning a smartphone only, and no other computing device. Counties with a higher % rate of having a smartphone only include:
1. Webster
2. Warren
3. Jefferson
4. Atkinson
5. Stewart
6. Clay
7. Glascock
8. Evans
9. Randolph
10. Colquitt

Note: For any broadband, including cellular, higher percentages are better. For the remaining items (no computing service, smartphone only, percent in poverty), lower percentages are better.

Data Source: AHRQ SDOH Database (Beta version), from American Community Survey 5-year files, 2014-2018.
Social Determinant of Health
No Computing Device, GA

A higher percentage of households in rural GA do not own a computing device, such as smartphone, laptop, tablet, or computer compared to metropolitan areas.

Note: For any broadband, including cellular, higher percentages are better. For the remaining items (no computing service, smartphone only, percent in poverty), lower percentages are better.

Data Source: AHRQ SDOH Database (Beta version), from American Community Survey 5-year files, 2014-2018.
Social Determinant of Health
Percent in Poverty, GA

Many southern GA and eastern GA counties have higher rates of poverty.

Highest % of poverty in the following counties:
1. Clay (41.11%)
2. Clinch (39.20%)
3. Randolph (36.99%)
4. Stewart (36.99%)
5. Turner (35.26%)
6. Candler (32.80%)
7. Terrell (31.88%)
8. Ben Hill (31.59%)
9. Clarke (31.33%)
10. Crisp (30.85%)

Data Source: AHRQ SDOH Database (Beta version), from American Community Survey 5-year files, 2014-2018.
Social Determinants of Health- Food Environment

Metropolitan areas have a greater number of grocery stores compared to non-metro areas.

In 2016, there were seven counties without a grocery store within the county.
1. Crawford
2. Dooly
3. Echols
4. Glascock
5. Taliaferro
6. Twiggs
7. Wilcox

Data Source: Economic Research Service, USDA, Food Environment Atlas 2020
In 2016, four of the seven counties with no grocery store had at least one fast food restaurant within the county.
- Crawford (3)
- Dooly (6)
- Twiggs (2)
- Wilcox (1)

The number of fast-food restaurants in metropolitan counties (with >100 stores) is roughly 5x the number of grocery stores.
Georgia is a Rural State

• 78% of state qualifies as rural
• Rurality is often indicator or predictor of disparities and worse outcomes, regardless of race, ethnicity, or insurance
Rurality in Georgia (2015-2019)

2.3M Georgians reside in rural areas; 31% are age 55+ years
69% of rural GA students eligible for free/reduced lunch (56% GA; 42% US)
Rural per capita income=$25K (GA=$32K; US=$35K)
Education <HS: Rural=16.7% (GA=12.1%; US=11.5%)
Uninsured: Rural=14% (GA=13%; US=8.7%)

**Rural residents in GA** have less income, less education, and less insurance and experience higher rates of cancer incidence, mortality, obesity, current smoking with lower CRC screening rates; compared to the US and non-rural GA.
<table>
<thead>
<tr>
<th>Georgia Health Measures</th>
<th>2020 Value for GA</th>
<th>Rank in US States</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Behavioral</strong></td>
<td></td>
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</tr>
<tr>
<td>High School Graduate (% of students)</td>
<td>80.6%</td>
<td>41</td>
</tr>
<tr>
<td>Obesity (% of adults)</td>
<td>32.5%</td>
<td>30</td>
</tr>
<tr>
<td>Physical Inactivity (% of adults)</td>
<td>26.2%</td>
<td>37</td>
</tr>
<tr>
<td>Smoking (% of adults)</td>
<td>16.1%</td>
<td>25</td>
</tr>
<tr>
<td>Behaviors (all behavior measures)</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td><strong>Clinical Care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low birthrate (% of live births)</td>
<td>9.9%</td>
<td>47</td>
</tr>
<tr>
<td>Mental health providers (#/100,000)</td>
<td>137.3</td>
<td>46</td>
</tr>
<tr>
<td>Primary Care Physicians (#/100,000)</td>
<td>123.9</td>
<td>41</td>
</tr>
<tr>
<td>Clinical Care (all clinical care measures)</td>
<td></td>
<td>45</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer deaths (per 100,000)</td>
<td>194.8</td>
<td>30</td>
</tr>
<tr>
<td>Disparity in health status (% point difference)</td>
<td>26.8%</td>
<td>30</td>
</tr>
<tr>
<td>Premature deaths (yrs lost &lt;age 75/100,000)</td>
<td>8243</td>
<td>34</td>
</tr>
<tr>
<td>All Outcome Measures</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>Overall Health Ranking in GEORGIA</td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>
Obesity in US & GA, By Race & Ethnicity, 2020

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022
Screening & Risk Factors: US, GA, By Sex, By Race

Target: White, Males, Black Males
Target: Blacks, Females, Black Females
Target: Blacks, Black Males, Females
Target: Blacks, Males, Black Males

- Smoking Curr
- No leisure PhyActiv
- BMI Obese>20y
- CRC Screening %Endo
Elevated rates of risk factor associated cancers in GA, including obesity, tobacco, physical inactivity for Blacks, Males, Females

Data Source: U.S. Cancer Statistics Data Visualization Tool, June 2022

- Of the 36,528 new HIV diagnoses in the US (2019), 52% were in the South.
- In GA, PLWH are 76% male, 68% Black, 54% aged >45 years
- NEW dx of HIV: 72% Black, 10% Hispanic

In Georgia:
Rate of Black males living with HIV dx is 6x that of White males.
Rate of Hispanic males living with HIV dx is 2.5x that of White males.
Rate of Black females living with HIV dx is 12x that of White females.
Rate of Hispanic females living with HIV dx is 3.9x that of White females.

PLWH are at increased risk for non-AIDS defining cancers & at increased risk for dying from cancer. Cancer is the #1 cause of mortality among PLWH.
19x ↑ risk of anal ca; 3x ↑ risk of liver ca; 2x ↑ risk of lung & oral cancers; 8x ↑ risk for Hodgkin lymphoma

Data Source: CDC, NCHHSTP AtlasPlus, 2019
Summary: Winship Catchment Area Assessment – Cancer Burden

• **Cancer Burden**: Age-adjusted overall **cancer incidence**: Top 10 cancers in GA same as in US, with excess incidence only for prostate, breast, lung, colorectal, melanoma, kidney, and leukemia.
  - **Blacks** have higher incidence of breast, prostate, uterine, myeloma & pancreatic ca in GA
  - **Whites** have higher incidence of lung ca in GA

• **Cancer Burden**: Age-adjusted overall **cancer mortality**: Excess mortality in GA for Big 4 Cancers vs US (lung, breast, prostate, CRC). Specific examples include:
  - **GA Black women** experience **36% increase** in **breast ca mortality** vs overall US rate
  - **Black men in GA** experience **>2x** the mortality rate from **prostate cancer** compared to US prostate ca rates
  - **Blacks in GA** have a **24% increase** in mortality for both **pancreatic** and **colorectal** cancers compared to the US mortality rates overall for these cancers
  - **Blacks in Warren County** are reported to have **lung cancer mortality** rates that are **2.33x** the US overall lung ca mortality rates
  - **Blacks in Fayette County** have **1.77x greater mortality** from **pancreatic cancer** vs Blacks in rest of GA and **11.9x mortality rate** vs all others in GA who die from pancreatic cancer
Summary: Winship Catchment Area Assessment – Social Determinants of Health (SDOH)

- Georgia residents have less income, education, insurance, access to healthcare, & employment vs US
- Elevated rates of risk factor-associated cancers in GA, including obesity, tobacco, physical inactivity for Blacks, Males, Females
- For Health Measures, GA ranks #31 for all behaviors, #45 for all clinical care, #38 for all outcomes, and #40 in US for overall health ranking
Catchment Area-Relevant Research – High Priority Research Targets

• **Cancers**: Breast, prostate, lung, colorectal; pancreatic especially among Blacks; myeloma, leukemias

• **Role of Risk Factors in Tumorigenesis, Recurrence, Outcomes**: Smoking, obesity, physical activity, mechanistic pathways driven by stress, oxidation, methylation, gene expression profiles

• **Special Populations**: Rural (possible exposures), HIV+ malignancies
Data Resources for Catchment Area Assessment

- **State Cancer Profiles** (CDC, NCI) – incidence, mortality, demographics, risk factors by tables, maps [https://statecancerprofiles.cancer.gov/](https://statecancerprofiles.cancer.gov/)
- Also includes 2020 BRFSS screening & risk factor survey
- 2019 American Community Survey Data
- Screening and risk factor data
- Smoking statistics
Data Resources for Catchment Area Assessment

- **US Cancer Statistics – Data Visualizations (CDC)**
  https://gis.cdc.gov/Cancer/USCS/#/AtAGlance/
- Specific cancers, incidence, mortality, by sex, race, ethnicity (2015-2019 data)
- Stage at diagnosis, screening & risk factors, prevalence, trends
- CDC - Chronic Disease Indicators - https://www.cdc.gov/cdi/
- State level data for chronic diseases, including cancer, and risk factors
- Includes screening data (mammography, Pap test, colorectal screening)
Additional Data Sources Relevant to Catchment Area Assessment

• Behavioral Risk Factor Surveillance System (BRFSS)
• 2020 data: https://www.cdc.gov/brfss/
• Includes phone survey data for states related to risk behaviors, e.g., fruit and vegetable consumption, physical activity, use of screening and prevention services
• Report physical activity levels in each of Georgia’s 159 counties and estimate the overall burden of inactive and irregularly active lifestyles on deaths, hospitalizations, and hospital charges for related health conditions.
Additional Data Resource for Catchment Area Assessment

- American Community Survey 5-year files, 2014-2018
- County level data for percent in poverty, any broadband, smartphone, and computing device
- Access to food, food insecurity, and community characteristics
Additional Data Sources Relevant to Catchment Area Assessment

- CDC, National Center for HIV, Viral Hepatitis, STD, and TB Prevention
- 2019 data: https://www.cdc.gov/nchhstp/atlas/index.htm
- National, regional, state and county level data
- HIV diagnosis by age, sex, race/ethnicity
- HIV prevalence by age, sex, race/ethnicity
Georgia Department of Health

- Georgia Cancer Data Report (2016)
- Georgia Childhood Cancer Report (2016)
- Cancer Program and Data Summary (2013)
- Reports of specific cancers (breast, cervical, ovarian, colorectal, prostate)
- Georgia Tobacco-Related Cancers Report
- HPV Report in Georgia
- https://dph.georgia.gov/cancer-reports
Georgia Dept of Health- Georgia Cancer Plan

• Most recent publicly available is 2014-2019
• Includes sections on Tobacco and Obesity
• HPV Vaccination
• Breast, Cervical Cancer Screening
• Screening for lung, colorectal cancers
• Palliative care
• Overview of Cancer Health Disparities in GA (2018)
• Georgia Cancer Plan logic model (2017)
For additional data, resources, or help in catchment area assessment:

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