Learning Objectives

Participants will be able to:

• Describe the current incidence and mortality of breast and cervical cancer in Georgia
• Understand cancer screening guidelines and current screening numbers in Georgia
• Differentiate between data sources used in the analysis of breast and cervical cancer data
• Understand which data sources are appropriate for various types of data analysis
Outline

• Current breast and cervical cancer data
  – Incidence
  – Mortality
  – Screening
  – Survival
  – Eligible population for BCCP

• Breast and cervical cancer data sources and uses
  – GA Comprehensive Cancer Registry and North American Association of Central Cancer Registries (NAACCR)
  – GA Breast and Cervical Cancer Program (BCCP) data
  – Behavioral Risk Factor Surveillance System (BRFSS)
  – Surveillance, Epidemiology, and End Results Program (SEER)
  – Small Area Health Insurance Estimates
Breast Cancer Incidence (2008-2012)

- #1 most frequently diagnosed cancer in Georgia females
- 124 cases per 100,000 females in Georgia
- White women have traditionally had higher incidence rates than black or Hispanic women
Breast Cancer Incidence (2008-2012)

- Breast cancer incidence rates lowest in women <40 years
- After age 40, incidence rises sharply, with highest rates in women age 60+
Breast Cancer Mortality (2007-2012)

- #2 most common cause of cancer death in Georgia females
- 22 deaths per 100,000 females in Georgia
- Black women have a higher mortality rate than white women, although their incidence rate is lower
Breast Cancer Mortality (2007-2012)

- Breast cancer mortality rates lowest in women <40 years
- After age 40, mortality rises steadily – but black women have higher mortality rates than white women at all age ranges
Cervical Cancer Incidence (2008-2012)

- #13 most frequently diagnosed cancer in GA females
- 8 cases per 100,000 females in Georgia
- Hispanic women have highest rates of cervical cancer; non-Hispanic white women have the lowest
Cervical Cancer Incidence (2008-2012)

- Cervical cancer incidence rates lowest in women <30 years
- Incidence rates highest in 30-39 and 40-49 age groups and then declines with age
Cervical Cancer Mortality (2007-2012)

- #11 most common cause of cancer death in Georgia females
- 3 deaths per 100,000 females in Georgia
- Black women have higher mortality rate than white women
Cervical Cancer Mortality (2007-2012)

- Cervical cancer mortality rates lowest in women <30 years
- After age 30, mortality rises steadily with age – but black women’s rates rise more sharply and maintain higher mortality rates than white women at all age ranges
Breast Cancer Screening

• *Old ACS guidelines*: Annual mammogram beginning at age 40 (for as long as in good health)

• *New ACS guidelines*: Annual mammograms between ages 45-55, every other year beginning at age 55

• *USPSTF guidelines*: Mammogram every other year for women ages 50-74
# Breast Cancer Screening*

<table>
<thead>
<tr>
<th></th>
<th>All Women 40+</th>
<th>White Women 40+</th>
<th>Black Women 40+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammogram within 1 year</td>
<td>61.3 %</td>
<td>59.6 %</td>
<td>65.0 %</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>Mammogram within 2 years</td>
<td>76.0 %</td>
<td>75.2 %</td>
<td>78.2 %</td>
</tr>
</tbody>
</table>

*Using older ACS screening guidelines  
Source: GA BRFSS 2011-2014
Cervical Cancer Screening

- **ACS/USPSTF guidelines:**
  - Pap test every three years between ages 21-29
  - Between ages 30-65 should have Pap test and HPV test every five years (co-testing), or can have Pap test every three years
  - Over age 65 – can stop screening if have had history of normal screening results
  - Women diagnosed with cervical pre-cancer should continue screening

<table>
<thead>
<tr>
<th></th>
<th>Women 21-65</th>
<th>White Women 21-65</th>
<th>Black Women 21-65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pap Test within 3 years</td>
<td>85.8 %</td>
<td>80.8 %</td>
<td>91.1 %</td>
</tr>
</tbody>
</table>

Source: GA BRFSS 2011-2014
Breast Cancer Survival*, Georgia, 2005-2011

<table>
<thead>
<tr>
<th>Stage</th>
<th>All Women</th>
<th>NH White Women</th>
<th>NH Black Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Stages</td>
<td>86.4 %</td>
<td>88.7 %</td>
<td>80.3 %</td>
</tr>
<tr>
<td>Localized</td>
<td>96.7 %</td>
<td>97.5 %</td>
<td>94.4 %</td>
</tr>
<tr>
<td>Regional</td>
<td>81.2 %</td>
<td>83.5 %</td>
<td>75.7 %</td>
</tr>
<tr>
<td>Distant</td>
<td>22.4 %</td>
<td>24.0 %</td>
<td>18.9 %</td>
</tr>
<tr>
<td>Unstaged/unknown</td>
<td>51.8 %</td>
<td>48.7 %</td>
<td>55.7 %</td>
</tr>
</tbody>
</table>

*Invasive cancer only
Five-year relative survival
Based on follow-up through Dec 2012
Cervical Cancer Survival*, Georgia, 2005-2011

<table>
<thead>
<tr>
<th>Stage</th>
<th>All Women</th>
<th>NH White Women</th>
<th>NH Black Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Stages</td>
<td>64.2 %</td>
<td>66.3 %</td>
<td>57.7 %</td>
</tr>
<tr>
<td>Localized</td>
<td>87.6 %</td>
<td>88.5 %</td>
<td>83.9 %</td>
</tr>
<tr>
<td>Regional</td>
<td>54.3 %</td>
<td>52.7 %</td>
<td>54.8 %</td>
</tr>
<tr>
<td>Distant</td>
<td>14.3 %</td>
<td>16.6 %</td>
<td>9.8 %</td>
</tr>
<tr>
<td>Unstaged/unknown</td>
<td>54.4 %</td>
<td>59.0 %</td>
<td>42.2 %</td>
</tr>
</tbody>
</table>

*Invasive cancer only
Five-year relative survival
Based on follow-up through Dec 2012

We Protect Lives.
Eligible Population for BCCP

• Georgia Breast and Cervical Cancer Program
  – Provides breast and cervical cancer screening to low income, uninsured women, diagnostic testing if needed, referrals for treatment (Women’s Health Medicaid)
  – Began screening women in 1995

• Eligibility requirements
  – Breast: Age 40-64, uninsured, income ≤ 200% FPL
  – Cervical: Age 21-64, uninsured, income ≤ 200% FPL

• GA Population eligible for breast (2013): 218,282
• GA Population eligible for cervical (2013): ~500,000
Data Sources
Data Source: GCCR

- Georgia Comprehensive Cancer Registry (GCCR)
  - Statewide, population-based cancer registry
    - Collects data on all cancers diagnosed in Georgia residents
    - Contains data back to 1995
  - Mandatory reporting of cancer cases to GCCR
  - GCCR participates in the National Program for Cancer Registries (NPCR), estab. 1992 - supports registries in 45 states and D.C. (covers 96% of US population)
  - Also a member of the North American Association of Central Cancer Registries (NAACCR), estab. 1987
  - Has been a SEER member since 2000
Data Source: GCCR

• Contains demographic data for cases
  • Name
  • SSN
  • Address
  • Race
  • Birthdate
  • Occupation
  • County of residence
  • Hispanic ethnicity

• Contains incidence data for newly diagnosed cases
  • Site
  • Age at Diagnosis
  • Histology
  • Morphology
  • Tumor Size
  • Vital Status
  • Staging
  • Node Involvement
  • Metastasis
  • First course of treatment
Data Source: GCCR

• De-identified registry file can be used to calculate:
  - Crude incidence rates
  - Age-adjusted incidence rates
  - Age-specific incidence rates
  - Site-specific incidence rates
  - Frequency tables
  - Rates by geography
  - Survival rates

• Full, identifiable registry file can be linked to other files for analysis
  - Annual linkage between BCCP diagnosed cases and cancer registry
Data Source: BCCP

• Data for clients served by BCCP for screening and/or diagnosis

• Demographic/enrollment data:
  • Name
  • Address
  • Birthdate
  • SSN
  • Race/ethnicity
  • Income/insurance status
  • Visit date
  • Clinic ID
  • Screening test results (CBE, mam, Pap)
  • Funding source for service

• Diagnosis/Treatment data:
  • Procedure(s) done
  • Dates of procedure(s)
  • Test results
  • Final diagnosis
  • Date of diagnosis
  • Treatment status
  • Treatment start date
  • Funding source
Data Source: BCCP

- BCCP data – valid for program use only
- Not population-based, not generalizable
- Year-to-year funding dictates how many women can be served across the state
- Current funding = less than 15% of eligible population can be served by BCCP
- Data is used to track program progress
- Data used to conduct CDC-required internal evaluation of provision of services (proper screening protocols, timeliness of diagnosis/treatment)
Data Source: BRFSS

• Behavioral Risk Factor Surveillance System

• Annual telephone survey of noninstitutionalized adults aged 18+

• Breast and cervical cancer screening questions asked every year in Georgia
  – Even years: Core questions
  – Odd years: Module questions

• Can compare national and state trends
Data Source: BRFSS

• Breast cancer screening questions
  – Ever had clinical breast exam
    • If yes, how long since most recent exam
  – Ever had mammogram
    • If yes, how long since most recent exam

• Cervical cancer screening questions
  – Ever had Pap test
    • If yes, how long since most recent exam
  – Ever had hysterectomy
Data Source: SEER

- Surveillance, Epidemiology, and End Results
- Population-based cancer registry representing almost 30% of US population
  - Comprised of 18 registries covering different geographic areas (sometimes cities, sometimes states)
  - Data for nine original registries dating back to 1973
  - Data for all 18 registries combined dating to 2000
- Contains data on demographics, incidence, survival, some treatment
- Atlanta: member since 1975
- All of Georgia: member since 2000
Data Source: SAHIE

- Small Area Health Insurance Estimates
- Provided by US Census
- Annual population counts for various demographic groups used to determine eligible population for NBCCEDP programs (GA BCCP)
- Can calculate by:
  - State or county
  - Sex
  - Race
  - Age group
  - Insurance status
  - Income level
Other Data Sources: Non-Cancer

• Death data: to calculate cancer mortality rates
  – Via death certificates
  – Provided by Office of Vital Records

• Rural Urban Continuum Codes: to study rural/urban differences in cancer incidence
  – Provided by Economic Research Service (USDA)
  – Nine classifications based on county
  – Metro (based on population) and nonmetro (based on population and metro adjacency)

• US Census: to produce age-adjusted cancer incidence rates
  – Age distributions to be used as weights for age standardization
Contact Information

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