CANCER INCIDENCE AND MORTALITY
DELAWARE, 2010-2014

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Chronic Disease Epidemiologist
Division of Public Health
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Overview

• All-site cancer rates
• 23 site-specific cancers
• Special section on cancer incidence and mortality in children and adolescents
• Census tract analyses
  o All-site cancer incidence rates for Delaware’s 214 census tracts
  o 16 census tracts with all-site cancer incidence rates that were statistically significantly higher than the statewide all-site cancer incidence rates
  o Analysis and findings published in a separate report (available on the DPH website)
ALL-SITE CANCER INCIDENCE
2010-2014 Incidence Facts

• Total of 27,861 cases (5,572 per year)
• By sex
  o Male – 52%
  o Female – 48%
• By race/ethnicity
  o Non-Hispanic Caucasian – 79%
  o Non-Hispanic African American – 16%
  o Hispanic – 2%
• By county
  o New Castle County – 53%
  o Kent County – 18%
  o Sussex County – 29%
All-Site Cancer Incidence; Delaware vs. U.S., 2010-2014

• Delaware remained ranked 2\textsuperscript{nd} highest nationally for cancer incidence (statistically significantly higher than the U.S. incidence rate)
  - Delaware: 506.4 per 100,000
  - U.S.: 442.7 per 100,000

• Delaware males ranked 3\textsuperscript{rd} highest for cancer incidence (statistically significantly higher than the male U.S. incidence rate)
  - Delaware males: 573.2 per 100,000
  - U.S. males: 492.4 per 100,000

• Delaware females ranked 6\textsuperscript{th} highest for cancer incidence (statistically significantly higher than the female U.S. incidence rate)
  - Delaware females: 458.0 per 100,000
  - U.S. females: 408.7 per 100,000
Most Commonly Diagnosed Cancers in Delaware, 2010-2014

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prostate</td>
<td>3,854</td>
<td>27%</td>
</tr>
<tr>
<td>2. Lung</td>
<td>2,027</td>
<td>14%</td>
</tr>
<tr>
<td>3. Colorectal</td>
<td>1,072</td>
<td>7%</td>
</tr>
<tr>
<td>4. Urinary bladder</td>
<td>1,020</td>
<td>7%</td>
</tr>
<tr>
<td>5. Melanoma</td>
<td>969</td>
<td>7%</td>
</tr>
<tr>
<td>6. Kidney</td>
<td>621</td>
<td>4%</td>
</tr>
<tr>
<td>7. NHL</td>
<td>613</td>
<td>4%</td>
</tr>
<tr>
<td>8. Oral</td>
<td>506</td>
<td>4%</td>
</tr>
<tr>
<td>9. Leukemia</td>
<td>460</td>
<td>3%</td>
</tr>
<tr>
<td>10. Pancreas</td>
<td>405</td>
<td>3%</td>
</tr>
</tbody>
</table>
Five-Year Average Age-Adjusted All-Site Cancer Incidence Rates by Sex; U.S. and Delaware, 1980-2014

- DE Male – 5% decrease
- DE Female – 5% increase
- US Male – 13% decrease
- US Female – 3% decrease
Five-Year Average Age-Adjusted All-Site Cancer Incidence Rates by Sex and Race/Ethnicity; Delaware, 2000-2014
ALL-SITE CANCER MORTALITY
2010-2014 Mortality Facts

- Total of 9,602 deaths from cancer (1,920 per year)
- By sex
  - Male – 52%
  - Female – 48%
- By race/ethnicity
  - Non-Hispanic Caucasian – 80%
  - Non-Hispanic African American – 17%
  - Hispanic – 2%
- By county
  - New Castle County – 53%
  - Kent County – 18%
  - Sussex County – 28%
All-Site Cancer Mortality; Delaware vs. U.S., 2010-2014

• DE ranked 16th highest nationally for cancer mortality (statistically significantly higher than the U.S. mortality rate)
  - Delaware: 178.2 per 100,000
  - U.S.: 166.1 per 100,000

• DE males ranked 21st highest for cancer mortality (statistically significantly higher than the male U.S. mortality rate)
  - Delaware males: 212.2 per 100,000
  - U.S. males: 200.5 per 100,000

• DE females ranked 13th highest for cancer mortality (statistically significantly higher than the female U.S. mortality rate)
  - Delaware females: 153.9 per 100,000
  - U.S. females: 141.5 per 100,000

• Non-Hispanic Caucasians in DE had a statistically significantly higher mortality rate than non-Hispanic Caucasians in the U.S.
Five-Year Average Age-Adjusted All-Site Cancer Mortality Rates by Sex; U.S. and Delaware, 1980-2014

DE Male – 15% decrease
DE Female – 9% decrease
US Male – 16% decrease
US Female – 13% decrease
Five-Year Average Age-Adjusted All-Site Cancer Mortality Rates by Sex and Race/Ethnicity; Delaware, 2000-2014
NOTABLE SITE-SPECIFIC CANCER DETAILS
## Cancers Sites with Statistically Significant Differences from the U.S.

<table>
<thead>
<tr>
<th>Delaware Incidence Rate Statistically Significantly Higher than U.S.</th>
<th>Delaware Incidence Rate Statistically Significantly Lower than U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-site</td>
<td>Multiple myeloma</td>
</tr>
<tr>
<td>Breast</td>
<td>Oral</td>
</tr>
<tr>
<td>Hodgkin lymphoma</td>
<td>Pancreas</td>
</tr>
<tr>
<td>Kidney</td>
<td>Prostate</td>
</tr>
<tr>
<td>Laryngeal</td>
<td>Thyroid</td>
</tr>
<tr>
<td>Lung</td>
<td>Urinary bladder</td>
</tr>
<tr>
<td>Melanoma</td>
<td>Uterine</td>
</tr>
<tr>
<td>Colorectal</td>
<td></td>
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</tbody>
</table>
# Cancer Sites with Dramatic Increases in Incidence from 2000-2004 to 2010-2014

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Leukemia</td>
<td>+38%</td>
<td>+1%</td>
</tr>
<tr>
<td>Liver</td>
<td>+89%</td>
<td>+62%</td>
</tr>
<tr>
<td>Melanoma</td>
<td>+63%</td>
<td>+14%</td>
</tr>
<tr>
<td>Multiple myeloma</td>
<td>+57%</td>
<td>+12%</td>
</tr>
<tr>
<td>Pancreas</td>
<td>+34%</td>
<td>+8%</td>
</tr>
<tr>
<td>Thyroid</td>
<td>+51%</td>
<td>+60%</td>
</tr>
</tbody>
</table>
### Cancer Sites with Dramatic Decreases in Incidence from 2000-2004 to 2010-2014

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Colorectal</td>
<td>-31%</td>
<td>-23%</td>
</tr>
<tr>
<td>Esophagus</td>
<td>-20%</td>
<td>-13%</td>
</tr>
<tr>
<td>Ovary</td>
<td>-24%</td>
<td>-16%</td>
</tr>
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Cancer Sites with Dramatic Increases in Mortality from 2000-2004 to 2010-2014

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<tbody>
<tr>
<td>Liver</td>
<td>+63%</td>
<td>+29%</td>
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<tr>
<td>Oral</td>
<td>+21%</td>
<td>-7%</td>
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Cancer Sites with Dramatic Decreases in Mortality from 2000-2004 to 2010-2014

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<td>-29%</td>
<td>-24%</td>
</tr>
<tr>
<td>Larynx</td>
<td>-25%</td>
<td>-23%</td>
</tr>
<tr>
<td>Non-Hodgkin lymphoma</td>
<td>-24%</td>
<td>-22%</td>
</tr>
<tr>
<td>Prostate</td>
<td>-31%</td>
<td>-29%</td>
</tr>
</tbody>
</table>
Lung Cancer in Delaware

• The most frequently diagnosed cancer in Delaware in 2010-2014 – 14% of all new cancer cases

• Most lung cancers are diagnosed at distant stage (53%)
  o This is an increase from 45% in 1980-1984

• The most common cause of cancer death in Delaware in 2010-2014 – 30% of cancer deaths

• Data from the Delaware Cancer Treatment Program (DCTP) for 2002-2017 show that lung cancer was the most common cancer treated through the program
  o Second to breast cancer for number of claims and amount of claims paid

• Early detection and screening are pivotal in reducing the burden from lung cancer in Delaware
Cancer Screening

• The Behavioral Risk Factor Survey (BRFS) collects information on cancer screening

• Breast cancer – Delaware ranks 3rd nationally for mammography
  o 78% of Delaware females 40 and older were screened for breast cancer in the previous 2 years compared to 72% nationally

• Cervical cancer – Delaware ranks 33rd nationally for pap tests
  o 79% of Delaware females age 21-65 have had a pap test in the past 3 years compared to 80% nationally

• Colorectal cancer – Delaware ranks 12th nationally for meeting USPSTF colorectal cancer screening
  o 77% of Delawareans met the USPSTF recommendations compared to 68% nationally

• Prostate cancer – Delaware ranks 6th for PSA tests
  o 45% of Delaware males 40 and older has a PSA test in the past 2 years compared to 39 percent nationally
Health Disparities

• Breast cancer
  o Women 50-64 were more likely to have received a mammogram in the past 2 years compared to women 40-49
  o Women who received a check up in the past year were more likely to receive a mammogram compared to those who did not receive a check up in the last year

• Colorectal cancer
  o Adults 65 and older were more likely to receive a sigmoidoscopy or colonoscopy compared to adults 50-64
  o Adults who received a check up in the past year were more likely to receive a sigmoidoscopy or colonoscopy compared to those who did not receive a check up in the last year
  o Adults who had a personal doctor were more likely to receive a sigmoidoscopy or colonoscopy compared to those who did not have a personal doctor

• Prostate cancer
  o Males 40-49 were more likely to NOT receive a PSA test within the past two years compared to males 65 and older
  o Males who received a check up in the past year were more likely to NOT receive a PSA test compared to those who did not receive a check up in the last year

• Other behavioral risk factors
Cancer Prevention

• Tobacco use is the leading risk factor
  o In 2016, 18% of Delawareans were current smokers compared to 17% nationally
  o Contributes to many cancers including lung, esophagus, kidney, urinary bladder, stomach, and pancreas

• Lack of physical activity and unhealthy eating are associated with increased risk of multiple cancers

• Alcohol abuse is a risk factor for many cancers
  o Particularly liver cancer which saw the highest increase in incidence for 2000-2004 to 2010-2014

• Increased education on sun exposure which leads to melanoma (second highest increase in incidence for 2000-2004 to 2010-2014)
Summary

- Delaware continues to have the second highest cancer incidence in the nation even though incidence rates are declining.
- Delaware mortality rates are decreasing even though Delaware ranks 16th nationally for cancer mortality.
- Cancer screening rates continue to be high in Delaware with an increasing number of cancers being diagnosed at earlier, more treatable stages.
- Lung cancer is the most commonly diagnosed cancer in Delaware and the number one site for cancer death.
- There need to be continued efforts to improve and enhance not only cancer screening, but also cancer prevention in Delaware by addressing behavioral risk factors and social determinants of health.
The full report can be found at

http://dhss.delaware.gov/dph/dpc/cancer.html
Discussion/Wrap Up

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Director, Delaware Division of Public Health