Liver Cancer: An Increasing Concern

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What’s included in the data?

- Primary Liver cancer
  - Hepatocellular carcinoma
  - Intrahepatic cholangiocarcinoma (bile duct cancer)
  - Angiosarcoma and hemangiosarcoma
  - Hepatoblastoma

- Not included is secondary liver cancers
Liver Cancer: Nationwide Trend

Incidence Rate has Increased 69% Over the Last 17 Years.
Mortality Rate has Increased 47% Over the Last 17 Years.

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Cancers on the Rise in Michigan: 5 Year Change

**Incidence**
- Liver, 4%
- Multiple Myeloma, 5%
- Melanoma, 3%
- Oral, 1%
- Pancreatic, 2%

**Mortality**
- Liver, 5%
- Leukemia, 5%
- Multiple Myeloma, 32%
- Pancreatic, 10%
- Oral, 4%

### Male vs Female

<table>
<thead>
<tr>
<th>Cancers</th>
<th>Incidence</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bones</td>
<td>39%</td>
<td>Bones, 3%</td>
</tr>
<tr>
<td>Corpus Uteri</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Liver</td>
<td>4%</td>
<td>Liver, 5%</td>
</tr>
<tr>
<td>Brain</td>
<td>2%</td>
<td>Brain, 9%</td>
</tr>
<tr>
<td>Oral</td>
<td>1%</td>
<td>Oral, 4%</td>
</tr>
<tr>
<td>Pancreatic</td>
<td>2%</td>
<td>Pancreatic, 10%</td>
</tr>
<tr>
<td>Multiple Myeloma</td>
<td>5%</td>
<td>Multiple Myeloma, 32%</td>
</tr>
<tr>
<td>Melanoma</td>
<td>3%</td>
<td>Melanoma, 6%</td>
</tr>
<tr>
<td>Corpus Uteri</td>
<td>1%</td>
<td>Corpus Uteri, 60%</td>
</tr>
</tbody>
</table>

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Estimated new cases, 2019
Michigan, by cancer type

- Breast (female): 9,310
- Lung and bronchus: 8,070
- Colorectum: 5,040
- Prostate: 4,580
- Melanoma of the skin: 3,300
- Urinary bladder: 2,930

EXPAND TO SEE ALL DATA

Estimated deaths, 2019
Michigan, by cancer type

- Lung and bronchus: 5,410
- Colorectum: 1,650
- Pancreas: 1,650
- Breast (female): 1,410
- Prostate: 980
- Liver and intrahepatic bile duct: 920

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American Cancer Society, 2019
**Incidence** increased in males by 39% and females by 12%.

- Males aged 60-64 increased by 165.6% and females aged 70-74 increased by 39.8%.

**Mortality** increased in males by 34% and females by 40%.

- Males aged 60-64 increased by 146.1% and females aged 70-74 increased by 103.1%.
Michigan 5-Year Average Incidence

- Overall Incidence: 6.9 per 100,000
  - Males: 10.2 per 100,000
  - Females: 3.9 per 100,000

- Averages 900 cases / year
  - About 2.5% of all cancer cases

- Mean age of diagnosis: 66 years
  - Black men mean age of diagnosis: 62 years
Michigan 5-Year Average Mortality

- Overall Mortality: 6.0 per 100,000
  - Males: 8.5 per 100,000
  - Females: 3.9 per 100,000
- Estimated 920 deaths in 2019
  - Sixth highest for cancer related deaths
  - About 5.2% of all cancer deaths
- Mean age of death: 67 years
  - Native American men mean age of death: 63 years

Age-Adjusted Liver Cancer Mortality by Race and Gender, 2013-2017

<table>
<thead>
<tr>
<th>Race</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>7.7</td>
<td>3.6</td>
</tr>
<tr>
<td>Black</td>
<td>14.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Native American</td>
<td>20.3</td>
<td>12.8</td>
</tr>
<tr>
<td>Asian</td>
<td>8.0</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Hospitalizations Due to Liver Cancer, 2017

- 36,015 cancer hospitalizations
- 631 (1.8%) were by a patient with a primary diagnosis of liver cancer
- 463 (73.4%) were admitted through an ED or Urgent care
- 168 (26.6%) were planned admits.
Factors Contributing to Liver Cancer

- Other
- Cirrhosis
- Excessive alcohol use
- Obesity
- Type 2 Diabetes
- Smoking
- Aflatoxins
- Poor oral health

15% Hepatitis B related
50% Hepatitis C related
35% Other
Liver Cancer Hospitalizations: Secondary Comorbidities

66% of patients who were hospitalized with liver cancer had at least one of these conditions:

- 16% CHRONIC HEPATITIS
- 13% ALCOHOL ABUSE
- 25% CIRRHOSIS
- 28% TYPE 2 DIABETES
- 22% NICOTINE DEPENDENCE
- 15% OBESITY

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Trends in Liver Cancer Survival Rates

Liver Cancer Survival Rates by Survival Interval

Year Diagnosed

- **1-Year Survival Rates**
  - 1987-1989: 3.5%
  - 1990-1992: 4.9%
  - 1993-1995: 10.5%
  - 1996-1998: 17.8%
  - 1999-2001: 20.0%
  - 2002-2004: 23.6%
  - 2005-2008: 31.4%
  - 2009-2015: 48.3%

- **5-Year Survival Rates**
  - 1987-1989: 10.0%
  - 1990-1992: 18.4%
  - 1993-1995: 20.0%
  - 1996-1998: 26.0%
  - 1999-2001: 37.5%
  - 2002-2004: 42.5%
  - 2005-2008: 48.3%
  - 2009-2015: 50.0%

- **10-Year Survival Rates**
  - 1987-1989: 0.0%
  - 1990-1992: 3.5%
  - 1993-1995: 4.9%
  - 1996-1998: 10.5%
  - 1999-2001: 18.4%
  - 2002-2004: 20.0%
  - 2005-2008: 26.0%
  - 2009-2015: 31.4%

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Stage at Diagnosis and Survival

Liver Diagnosis by Stage:
- Localized 44%
- Regional 27%
- Distant 18%
- Unknown 11%

Liver Cancer Five-Year Survival Rates by Stage at Diagnosis, 2009-2015

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## Cancer Survival Rates

<table>
<thead>
<tr>
<th></th>
<th>1-Yr</th>
<th>5-Yr</th>
<th>10-Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatic</td>
<td>33.5%</td>
<td>9.8%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>41.8%</td>
<td>10.6%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>43.5%</td>
<td>17.9%</td>
<td>11.6%</td>
</tr>
<tr>
<td>Liver</td>
<td><strong>48.3%</strong></td>
<td><strong>19.5%</strong></td>
<td><strong>10.5%</strong></td>
</tr>
<tr>
<td>Lung</td>
<td>44.3%</td>
<td>20.6%</td>
<td>10.7%</td>
</tr>
</tbody>
</table>
## Stage at Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>Localized</th>
<th>Regional</th>
<th>Distant</th>
<th>Unknown/Unstaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatic</td>
<td>10.4%</td>
<td>29.4%</td>
<td>52.5%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>10.1%</td>
<td>15.0%</td>
<td>67.7%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>9.9%</td>
<td>41.8%</td>
<td>44.5%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Liver</td>
<td><strong>44.0%</strong></td>
<td><strong>27.0%</strong></td>
<td><strong>17.8%</strong></td>
<td><strong>11.2%</strong></td>
</tr>
<tr>
<td>Lung</td>
<td>16.4%</td>
<td>21.9%</td>
<td>57.3%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Tissue Type</td>
<td>Localized</td>
<td>Regional</td>
<td>Distant</td>
<td>Unknown/Unstaged</td>
</tr>
<tr>
<td>--------------</td>
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<td>18.2%</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>61.8%</td>
<td>26.8%</td>
<td>2.1%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Liver</td>
<td>32.6%</td>
<td>10.8%</td>
<td>2.4%</td>
<td>6.6%</td>
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<tr>
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<td>5.2%</td>
<td>8.2%</td>
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Opportunities for Public Health Intervention

- Vaccinate for Hepatitis B
- Treat Hepatitis B and C infection
- Limit alcohol use
- Quit smoking
Opportunities for Public Health Intervention

Body Mass Index, Waist Circumference, Diabetes, and Risk of Liver Cancer for U.S. Adults

Peter T. Campbell¹, Christina C. Newton¹, Neal D. Freedman², Jill Koshiol².

• Published in 2016
• This study suggests that high BMI, high WC, and type II diabetes mellitus are associated with higher risks of liver cancer and that the association may differ by status of viral hepatitis infection.
Michigan Cancer Plan 2016-2020
Questions?
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