Oral Cancer in South Dakota
Oral cancer forms in tissues of the oral cavity (the mouth) or the oropharynx (the part of the throat at the back of the mouth). Oral cancer most often occurs in people over the age of 40 and affects more than twice as many men as women. It accounts for roughly two percent of all cancers diagnosed annually in the United States. The death rate for these cancers has been decreasing over the last 30 years.

**Oral Cancer Estimates for 2014**

The American Cancer Society estimates 42,440 new cases of cancer of the oral cavity and pharynx and 8,390 deaths in the United States in 2014.

**Incidence and Mortality**

During 2007-2011, there was an average of 100 (68 men and 32 women) new invasive cases of oral cancer diagnosed among South Dakota residents per year. Of those cases, 94 were white and 5 were American Indian.

In South Dakota, an average of 18 people died annually from oral cancer spanning the years from 2007 to 2011. Of that number, 16 were white and 1 was American Indian.

<table>
<thead>
<tr>
<th>Incidence 2011</th>
<th>Mortality 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases</td>
<td>Number of deaths</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Males</td>
<td>Males</td>
</tr>
<tr>
<td>Females</td>
<td>Females</td>
</tr>
<tr>
<td>White</td>
<td>White</td>
</tr>
<tr>
<td>American Indian</td>
<td>American Indian</td>
</tr>
<tr>
<td>Median age at diagnosis</td>
<td>Median age at death</td>
</tr>
<tr>
<td>Mode</td>
<td>Mode</td>
</tr>
<tr>
<td>Age range at diagnosis</td>
<td>Age range at death</td>
</tr>
<tr>
<td>S.D. age-adjusted incidence rate</td>
<td>S.D. age-adjusted death rate</td>
</tr>
<tr>
<td>U.S. SEER age-adjusted incidence rate</td>
<td>U.S. SEER age-adjusted death rate (2010)</td>
</tr>
</tbody>
</table>

Source: South Dakota Department of Health

**Figure 1**

**SEER Summary Stage**
Oral cancer stage at diagnosis, South Dakota, 2011

**5-Year Relative Survival for Oral Cancer, U.S.**

<table>
<thead>
<tr>
<th>Stage at Diagnosis</th>
<th>5-Year Relative Survival, 2003-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>82.7%</td>
</tr>
<tr>
<td>Regional</td>
<td>59.2%</td>
</tr>
<tr>
<td>Distant</td>
<td>36.3%</td>
</tr>
<tr>
<td>Unknown</td>
<td>49.3%</td>
</tr>
</tbody>
</table>

Source: National Cancer Institute

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1 Source: Cancer Facts and Figures 2014 American Cancer Society
Smoking and alcohol use are linked to oral cancer.

Recent CDC studies attribute 63% of oropharyngeal cancers to Human Papilloma Virus (HPV), specifically HPV 16 and 18.

About 1 in 4 persons with oral cancer die because of delayed diagnosis and treatment.

Symptoms
One of the real dangers of this cancer is that in its early stages, it can go unnoticed. It can be painless and physical changes may not be obvious. Some of the signs or symptoms may include:

- Swelling of the jaw
- Voice changes
- Weight loss
- Difficulty chewing or swallowing food
- Numbness in the mouth
- A sore in the mouth that bleeds and does not heal
- A lump or thickening in the mouth, throat, or tongue
- A white or red patch on the gums, tongue, tonsil, or lining of the mouth
- A sore throat or a feeling that something is caught in the throat

1 http://www.cdc.gov/cancer/hpv/statistics/headneck.htm
Burden
Years of Potential Life Lost before age 75 years (YPLL<sub>75</sub>) reflect the impact of the cancer burden among South Dakotans. It demonstrates in years the loss of productive life due to premature death. The Average Years of Life Lost before age 75 years (AYLL<sub>75</sub>) is the YPLL divided by the number of deaths.

For South Dakotans in 2011, the oral cancer YPLL<sub>75</sub> was 125 years for males and 57 years for females. The AYLL<sub>75</sub> was 21 years for males and 11 years for females.

Risk Factors
The risk of oral cancer increases with age; in South Dakota 95% of oral cancer occurs in patients 45 years or older. Unlike age, there are other risk factors that are modifiable such as:

- Alcohol consumption – drink in moderation, if at all.
- Exposure to HPV 16 and 18 – HPV vaccinations are available for males and females ages 11 to 26 years to prevent the virus. For more information on vaccinations, contact the South Dakota Department of Health Immunization Program at 800-592-1861.
- Exposure to ultraviolet light – use sunscreen and cover up when in the sun.
- Exposure to chemicals - especially asbestos, sulphuric acid, and formaldehyde.
- Poor nutrition – a healthy diet is important for a person’s general health and oral health, see http://www.healthysd.gov/ or http://doh.sd.gov/oralhealth for more information.
- Tobacco use – don’t use tobacco products. To learn how to quit tobacco, see http://www.befreesd.com. Currently in SD, 22% of adults and 16.5% high school students smoke. Additionally, 6.4% adults and 11.5% high school students use spit-tobacco<sup>1</sup>.

Figure 5
Oral Cancer Incidence Rates, United States and South Dakota
Oral cancer incidence rates for the United States and South Dakota by year, 2001-2010

Figure 6
Oral Cancer Mortality Rates, United States and South Dakota
Oral cancer mortality rates for the United States and South Dakota by year, 2001-2010

Source: South Dakota Department of Health

<sup>1</sup> 2012 South Dakota Behavioral Risk Factor Surveillance System and 2013 South Dakota Youth Risk Behavior Survey