Alcohol-Related Deaths and Hospitalizations in South Dakota

South Dakota Department of Health
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Alcohol-Related Deaths in South Dakota

In South Dakota, the number of alcohol-related deaths has been increasing in the last ten years. The alcohol-related death rate increased 107% from 16.5 per 100,000 in 2011 to a rate of 34.2 per 100,000 in 2020 (Figure 1). South Dakota had the sixth highest crude rate for alcohol-related deaths at 17.4 per 100,000 and the United States rate was 9.9 per 100,000, 2010-2019 (Figure 2).

Figure 1: Alcohol-Related Deaths and Rates, South Dakota (2011-2020)

Figure 2: Alcohol-Related Death* Rates by State (2010-2019)

*Includes codes: F10.0-10.9, G32.1, G62.1, G72.1, I42.6, K29.2, K70.0-70.4, K70.9, K86.0, O35.4, P04.3, Q86.0, R78.0, X45, X65, Y15
Common Causes of Alcohol-Related Deaths

Alcohol-related deaths can be broken down into two primary groups, acute and chronic causes of death. Acute causes of death include alcohol poisoning and other causes, such as injury, where alcohol is a contributing factor. Chronic causes include alcohol abuse, liver disease, and other alcohol induced chronic conditions. Alcoholic liver disease was the most common cause and accounted for 60% of all alcohol-related deaths in South Dakota. Deaths due to alcoholic liver disease increased 157% in the last ten years, from 77 deaths in 2011 to 198 deaths in 2020. The second most common cause of alcohol-related deaths was alcohol poisoning/acute alcohol intoxication (Figure 3).

Figure 3: Alcohol-Related Deaths by Cause, South Dakota (2011-2020)

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetal alcohol syndrome</td>
<td>0.1%</td>
</tr>
<tr>
<td>Alcohol-induced chronic pancreatitis</td>
<td>0.2%</td>
</tr>
<tr>
<td>Alcoholic gastritis</td>
<td>0.3%</td>
</tr>
<tr>
<td>Suicide by and exposure to alcohol</td>
<td>0.3%</td>
</tr>
<tr>
<td>Degeneration of nervous system</td>
<td>0.4%</td>
</tr>
<tr>
<td>Alcohol cardiomyopathy</td>
<td>0.8%</td>
</tr>
<tr>
<td>Alcoholic psychosis</td>
<td>2%</td>
</tr>
<tr>
<td>Alcohol dependence syndrome</td>
<td>6%</td>
</tr>
<tr>
<td>Chronic alcohol abuse</td>
<td>8%</td>
</tr>
<tr>
<td>Alcohol poisoning/acute alcohol intoxication</td>
<td>21%</td>
</tr>
<tr>
<td>Alcoholic liver disease</td>
<td>60%</td>
</tr>
</tbody>
</table>

High Risk Populations

Sex

Overall, males are more likely to die from an alcohol-related cause of death than females. Males made up 66% of all alcohol-related deaths from 2011-2020. The rate of alcohol-related deaths among males is almost two times higher than the female rate (29.5 vs 15.7 per 100,000).

Age

Although alcohol-related deaths affect all ages of South Dakotans, individuals between the ages of 40-69 are at the highest risk compared to all the other age groups (Figure 4).

Figure 4: Alcohol-Related Death Rates (per 100,000) by Age Group, South Dakota (2011-2020)
**Race**

From 2011-2020, 57% of alcohol-related deaths were White, 40% were American Indian, and 3% Other (Black, Asian, multiracial, Hispanic, and unknown). American Indians died of alcohol-related deaths at rates almost seven times higher than Whites (101.8 vs 15.0 per 100,000). American Indian males and females experienced significantly higher rates than White males and females (Figure 5).

Figure 5: Alcohol-Related Death Rate (per 100,000) by Sex and Race, South Dakota (2011-2020)

**Alcohol-Related Hospitalizations in South Dakota**

The number of alcohol-related hospitalizations has increased 34% over the last five years, from 1,888 hospitalizations in 2016 to 2,534 in 2020 (Figure 6).

Figure 6: Alcohol-Related Hospitalizations and Rates, South Dakota (2016-2020)
Common Causes of Alcohol-Related Hospitalizations

Alcohol abuse/dependence/use was the most common cause of alcohol-related hospitalizations. The second most common cause was non-alcohol related diagnoses with a blood alcohol level present (Figure 7). Alcoholic liver diseases had the greatest increase (86%) in hospitalizations over the last five years, 308 hospitalizations in 2016 to 574 in 2020.

Figure 7: Alcohol-Related Hospitalizations by Cause, South Dakota (2016-2020)

### High Risk Populations

**Sex**

Overall, males are more likely to be hospitalized from an alcohol-related cause than females. Males made up 67% of all alcohol-related hospitalizations from 2016-2020. The rate of alcohol-related hospitalizations among males is almost two times higher than the female rate (328.7 vs 167.0 per 100,000).

**Age**

Compared to other age groups, individuals between the ages of 30-59 years are at the highest risk for an alcohol-related hospitalization (Figure 8).

Figure 8: Alcohol-Related Hospitalization Rates (per 100,000) by Age Group, South Dakota (2016-2020)
Race

From 2016-2020, 54% of alcohol-related hospitalizations were White, 39% were American Indian, and 8% Other (Black, Asian, Native Hawaiian/Pacific Islander, multiracial, Hispanic, and unknown). American Indians were hospitalized at rates almost seven times higher than Whites (1,071.4 vs 157.2 per 100,000) (Figure 9).

Figure 9: Alcohol-Related Hospitalization Rates (per 100,000) by Race, South Dakota (2016-2020)

Case Definitions and Data Sources

Data in this report may differ from other reports due to how the data was analyzed. See below for case definitions and data sources.

Case Definitions:

Acute causes of death: alcohol poisoning and acute alcohol intoxication (X45, Y15, T51.0-T51.1, T51.9), suicide by and exposure to alcohol (X65), and excessive blood level of alcohol (R78.0). Chronic causes of death: alcoholic psychosis (F10.3-10.9), alcohol abuse (F10.0-F10.1), alcohol dependence syndrome (F10.2), alcohol polyneuropathy (G62.1), degeneration of nervous system due to alcohol (G31.2), alcoholic myopathy (G72.1), alcoholic cardiomyopathy (I42.6), alcoholic gastritis (K29.2), alcoholic liver disease (K70.0-K70.4, K70.9), fetal alcohol syndrome (Q86.0), fetus and newborn affected by maternal use of alcohol (P04.3, O35.4), and alcohol-induced chronic pancreatitis (K86.0).

Alcohol-related hospitalization causes include: alcohol-induced pseudo-Cushing’s syndrome (E24.4), alcohol use/abuse/dependence (F10.1[0-2,4-5,8-9], F10.2, F10.9[2,4-9]), degeneration of nervous system due to alcohol (G31.2), alcoholic polyneuropathy (G62.1), alcoholic myopathy (G72.1), alcoholic cardiomyopathy (I42.6), alcoholic liver disease (K70.0, K70.1[0-1], K70.2, K70.3[0-1], K70.4[0-1], K70.9), alcohol induced pancreatitis (K85.2[0-2]), K86.0), maternal care for (suspected) damage to fetus from alcohol (O35.4XX[0-5,9]), alcohol use complicating pregnancy/childbirth/puerperium (O99.31[0-5]), newborn affected by maternal use of alcohol (P04.3), fetal alcohol syndrome (Q86.0), toxic effect of alcohol (T51.0X[1A-4S], T51.9[1-4,XA-XS]), and other cause listed in diagnoses field, but blood alcohol level present (Y90.4-.8).

Data Sources:

South Dakota Department of Health (DOH) Vital Statistics
South Dakota Association of Healthcare Organizations (SDAHO)
WONDER, Center for Disease Control and Prevention