Addressing Dual Alcohol and Tobacco Use in the STOP Program
Learning Objectives

1. Understand the cancer risk associated with alcohol use, and multiplicative cancer risk of dual alcohol and tobacco use
2. Describe low-risk alcohol drinking guidelines in Canada
3. Identify the barriers of alcohol use on smoking cessation
4. Understand the potential to improve cessation outcomes by addressing alcohol consumption
5. Know the basics of SBIRT – an evidence-based practice used to identify, reduce alcohol consumption
Alcohol Ever-Use Widespread Across Canada

Reported Drinking Alcohol in Past Year 2013

Source: Government of Canada/Health Canada (CTADS report), 2015
Binge Drinking in Canada

**Definition:** Having many drinks on one occasion: five or more drinks for a male, or four or more drinks for a female

- **19%**
  - Overall binge drinking rate in Canada, 2013

- **25%**
  - Male binge drinking rate in Canada, 2013

- **13%**
  - Female binge drinking rate in Canada, 2013

Source: Statistics Canada, 2013
Large Economic Impact of Alcohol Use in Canada

Economic Costs of Alcohol-Related Harm (2002)
Total Cost: $14.6 Billion Per Year

- Direct costs:
  - productivity losses: $7.1 Billion
- Direct health care costs: $3.3 Billion
- Direct law enforcement costs: $3.1 Billion
- Other direct costs: $1.1 Billion

Source: Canadian Centre on Substance Abuse, 2014
Large Health Impact of Alcohol Consumption

- Major preventable cause of morbidity and mortality
- Has causal impact on chronic and acute diseases outcomes, including:
  - Cancer
  - Alcohol use disorders
  - Depressive disorders
  - Preterm birth complications and fetal alcohol syndrome
  - Intentional and unintentional injuries

Source: Canadian Centre on Substance Abuse, 2014; Cancer Care Ontario, 2014

2nd Most harmful substance in Canada
### Health Risks Proportionate with Alcohol Consumption Levels

#### Risk of Premature Death from Alcohol-Related Illnesses

<table>
<thead>
<tr>
<th>Type of Illness or Disease</th>
<th>Proportion of All Deaths, 2002-2005</th>
<th>Percentage Increase/Decrease in Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Zero or Decreased Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-1% to -24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increased Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Up to +49%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+50% to 99%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+100% to 199%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over +200%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Drink</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Drinks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-4 Drinks</td>
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<tr>
<td></td>
<td></td>
<td>5-6 Drinks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+6 Drinks</td>
</tr>
<tr>
<td>Oral cavity &amp; pharynx cancer</td>
<td>1 in 200</td>
<td>+42</td>
</tr>
<tr>
<td>Oral esophagus cancer</td>
<td>1 in 150</td>
<td>+20</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>1 in 40</td>
<td>+3</td>
</tr>
<tr>
<td>Rectum cancer</td>
<td>1 in 200</td>
<td>+5</td>
</tr>
<tr>
<td>Liver cancer</td>
<td>1 in 200</td>
<td>+10</td>
</tr>
<tr>
<td>Larynx cancer</td>
<td>1 in 500</td>
<td>+21</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>1 in 13</td>
<td>-19</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>1 in 1,000</td>
<td>+19</td>
</tr>
<tr>
<td>Dysrhythmias</td>
<td>1 in 250</td>
<td>+8</td>
</tr>
<tr>
<td>Pancreatitis</td>
<td>1 in 750</td>
<td>+3</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>1 in 1,000</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Canadian Centre on Substance Abuse, 2013
Alcohol Proven to be Carcinogenic

Cancer cases diagnosed in Ontario attributable to alcohol consumption, 2010:

- **1,000-3,000**

Source: Cancer Care Ontario, 2014
How Alcohol Increases Cancer Risk

- Contains DNA-damaging reactive metabolites (e.g., acetaldehyde)
- Acts as solvent for carcinogens to penetrate cells easily
- Associated with poor diet; makes tissues more susceptible to carcinogenesis
- Metabolizes to produce harmful free radical oxygen

Source: Cancer Care Ontario, 2014
Unknowns of Alcohol and Cancer Risk

# of years after initiating drinking when impact on risk becomes greatest

How cancer risk differs by drinking patterns vs. amount consumed

Whether potential for alcohol-related cell damage is higher at certain ages

Source: Cancer Care Ontario, 2014
Cancer Risk Present at All Levels, Proportionate to Consumption

There is no clear “safe limit” of alcohol intake to prevent an increased risk of cancer.

Heavy alcohol drinkers (4+ drinks per day) are at a substantially increased risk of cancer.

<table>
<thead>
<tr>
<th>Increase in Cancer Risk with 3.5 Drinks/Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers of: Breast Colon Rectum</td>
</tr>
<tr>
<td>Cancers of: Oral cavity Pharynx Larynx Esophagus</td>
</tr>
</tbody>
</table>

Source: Canadian Cancer Society, 2015; Cancer Care Ontario, 2014
Proportion of Ontario Cancer Cases Attributable to Alcohol Consumption

Source: Cancer Care Ontario, 2014
Further Risk of Aerodigestive Cancers with Dual Consumption

Oral and Pharyngeal Cancer Cases Attributed to Dual Consumption

80% 65%

35x
Increased risk of oropharyngeal cancer with heavy dual consumption

Multiplicative Effect on Cancer Risk of Dual Alcohol and Tobacco Use

Adjusted Odds Ratios of ESCC* Risk by Alcohol, Tobacco Use

- **Alcohol Use ONLY**: 1.36
- **Tobacco Use ONLY**: 1.21
- **Both Alcohol & Tobacco Use**: 3.28

*Esophageal squamous cell carcinoma

Source: Prabhu et al 2014
POLL QUESTION

What percentage of Canadians are aware that cancer risk can be lowered by reducing alcohol consumption?

- [ ] Less than 25%
- [ ] 26-50%
- [ ] 51-75%
- [ ] Over 76%
Low-Risk Drinking Guidelines Developed to Target Cancer Risk

Canada’s Low-Risk Alcohol Drinking Guidelines (CCSA)

*No more than:*
- Day: 2 drinks on most days
- Week: 10 drinks

Canadian Cancer Society (CCS) Low-Risk Drinking Guidelines

*Less than:*
- Day: 1 drink per day
- Day: 2 drinks per day
- Week: 15 drinks a week

Source: Cancer Care Ontario, 2014
How Much is One Drink?

**Beer**
341 ml (12 oz.)
5% alcohol content

**Cider/Cooler**
341 ml (12 oz.)
5% alcohol content

**Wine**
142 ml (5 oz.)
12% alcohol content

**Distilled Alcohol**
43 ml (1.5 oz.)
40% alcohol content

13.6 grams
Alcohol content of one standard drink in Canada

Source: Cancer Care Ontario, 2014
Nearly 1M Ontario Adults Drinking Above Guidelines

Alcohol Consumption in Relation to Cancer Prevention Recommendations During Past 12 Months, Ontario Adults (Aged 19+), 2012

Source: Cancer Care Ontario, 2014
Gap Between Females and Males Closing

Percentage of Ontario Adults (Aged 19+) Exceeding Cancer Prevention Recommendations for Alcohol Prevention

Note: Estimates are age-standardized to the 2006 Canadian population

Source: Cancer Care Ontario, 2014
Regional Variation in Drinking Rates Across Ontario


Legend

- 4.0-5.9%
- 6.0-7.9%
- 8.0-9.9%
- 10-11.9%
- 12-13.9%

Source: Cancer Care Ontario, 2014
Sociodemographic Disparities in Exceeding Recommendations


Source: Cancer Care Ontario, 2014
Ontario Smokers More Likely to Drink Above Guidelines

Proportion of ON Adults Exceeding Drinking Guidelines, by Smoking Status

- Males: 25% Smokers, 12% Non-smokers
- Females: 30% Smokers, 18% Non-smokers
- Overall: 27% Smokers, 16% Non-smokers

>554,000 Ontario smokers that drink above guidelines

Source: Cancer Care Ontario, 2014
Even Higher Drinking Rates Among STOP Participants

Proportion of ON Adults Exceeding Drinking Guidelines, by Smoking Status

Overall
- STOP participants: 37%
- Smokers (across ON): 27%
- Non-smokers: 16%

Males
- STOP participants: 45%
- Smokers (across ON): 25%
- Non-smokers: 12%

Females
- STOP participants: 30%
- Smokers (across ON): 30%
- Non-smokers: 18%

>8,300 STOP participants that drink above CCS guidelines

Source: Cancer Care Ontario, 2014; Internal Data
Alcohol Use and Smoking Cessation Rates

Individuals that continue to use alcohol during smoking cessation treatment have lower smoking abstinence rates when compared to non-drinkers

Point prevalence and continuous smoking abstinence rates by alcohol use at baseline

<table>
<thead>
<tr>
<th></th>
<th>Assessment Point</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week 12</td>
</tr>
<tr>
<td><strong>Drinkers</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Nondrinkers</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Source:** Humfleet et al 1999
Alcohol Use a Significant Driver of Smoking Relapse

Effects of Alcohol Beverage Consumption on Smoking Relapse (compared to Placebo Beverage)

Ability to resist first cigarette
Likelihood of initiating smoking sooner
# of cigarettes smoked

Source: McKee et al 2006; Augustson et al. 2008; Borland, 1990
Sociodemographic Disparities in STOP Cessation when Drinking Above Guidelines

Smoking Quit Rates at 6-month Follow-Up among STOP Participants, Drinking Above vs. Within CCS Guidelines

<table>
<thead>
<tr>
<th>Household Income</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $20,000**</td>
<td>Less than high school</td>
</tr>
<tr>
<td>$20,001 - $40,000*</td>
<td>High school diploma**</td>
</tr>
<tr>
<td>$40,001 - $60,000**</td>
<td>College some or diploma*</td>
</tr>
<tr>
<td>$60,001 - $80,000</td>
<td>University some or degree</td>
</tr>
<tr>
<td>$80,001 - $100,000</td>
<td>40%</td>
</tr>
<tr>
<td>Over $100,000</td>
<td>37%</td>
</tr>
</tbody>
</table>

*Drinking Above CCS Guidelines | Drinking Within CCS Guidelines

*p<0.1, **p<0.05

Source: Internal data
Regional Variation in STOP Cessation Rates when Drinking Above Guidelines

Smoking Quit Rates at 6-month Follow-Up among STOP Participants Exceeding CCS Guidelines, by LHIN

![Bar chart showing smoking quit rates at 6-month follow-up among STOP participants exceeding CCS guidelines, by LHIN region. The chart compares quit rates for those drinking above CCS guidelines (blue) and within CCS guidelines (orange) across different LHIN regions.]
Addressing Drinking Behaviours in STOP Can Improve Quit Outcomes

Female STOP Participants

Source: Internal Data
Addressing Drinking Behaviours in STOP Can Improve Quit Outcomes

Female STOP Participants

Source: Internal Data
Addressing Drinking Behaviours in STOP Can Improve Quit Outcomes

Male STOP Participants

Source: Internal Data
Addressing Drinking Behaviours in STOP Can Improve Quit Outcomes

Male STOP Participants

Source: Internal Data
Potential Outcomes of Combined Alcohol and Cessation Programming

Better quit outcomes

Reduced drinking rates

Patients’ acceptance; interest in treatment

Increase in long-term sobriety

POLL QUESTION

Does your clinic currently have a protocol for health care practitioners to address patients’ alcohol use?

☐ Yes
☐ No
SBIRT is Evidence-Based Approach to Addressing Risky Alcohol Use

- SBIRT is an evidence-based clinical practice used to identify, reduce, and prevent problematic substance use, abuse, dependence on alcohol and illicit drugs.

- SBIRT has been adapted for use in a variety of settings, including, primary care settings, office and clinical-based practices, and community settings.

- There are three parts to SBIRT:
  1. Screening
  2. Brief Intervention
  3. Referral to Treatment

Screening, Brief Intervention, & Referral to Treatment (SBIRT)

Step 1: Screening

Different tools available depending on setting, populations targeted:

- AUDIT
- ASSIST
- CAGE
- CRAFFT
- S-MAST
- RAPS
- T-ACE
- TWEAK

Alcohol Use and Disorders Identification Test (AUDIT)

1. How often do you have a drink containing alcohol?
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
3. How often do you have six or more drinks on one occasion?
4. …

Sources: American Public Health Association, 2008
Screening, Brief Intervention, & Referral to Treatment (SBIRT)

Step 2: Brief Intervention (example)

Brief Intervention Steps Recommended by APHA

1. Raise the Subject
2. Provide Feedback
3. Enhance Motivation
4. Negotiate and Advise
5. Refer to Treatment

Sources: American Public Health Association (APHA), 2008
Screening, Brief Intervention, & Referral to Treatment (SBIRT)

*Step 3: Referral to Treatment*

**Refer to Health Care Provider:**
- Addiction therapist
- Psychiatrist
- Counselor
- Social Worker

**Provide Resources:**
- Workbooks
- Fact sheets
- Agreement forms
- Diary cards, *etc.*

Sources: American Public Health Association, 2008
Introducing COMBAT

Applies SBIRT approach to address consumption of alcohol above recommended guidelines

Offers implementers the option to provide patients with relevant resources

Objective is to increase proportion of eligible participants:

1. Abstinent from smoking
2. Meeting CCS drinking guidelines at 6-month follow up
References


References cont.


Thank you!

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