Evidence-based Prevention to Reduce Alcohol-related Violence

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Support

National Institute of Alcohol Abuse and Alcoholism

• Intersection of Local and State Alcohol Policy: The Case of Malt Liquor 1R01AA020496-01A1 (Jones-Webb)

• A Comprehensive Analysis of State Alcohol Policy Environment and Its Effects R01 AA017873 (Erickson)

• Youth Drinking: The Effects of Alcohol Control Policies and Adult Drinking Patterns R01 AA018377 (Naimi)

Robert Wood Johnson Foundation

• 051879 040936 (Wechsler)
Excessive alcohol use

- Unintended Pregnancies
- Cardiovascular disease
- Lost productivity, absenteeism
- Liver disease
- GI cancers, GI disorders
- Violence
  - Impaired driving crashes
- Sexual Assault
- Crime, legal costs
- Injury
- Child Neglect
- Alcohol Use Disorders
A Public Health Perspective is Valuable
Risky?

Public Health Problem?
Drinking alcohol is:

• Fun
• Common
• Risky
Alcohol consumption and harm

Prevalence

Distribution of alcohol consumption in the population

Risk of alcohol-related harm

Consumption

Weitzman & Nelson, 2005
“... a large number of people exposed to a small risk may generate many more cases than a small number exposed to a high risk”

-Sir Geoffrey Rose
Alcohol Use, Binge Drinking and Alcohol Abuse are part of the same distribution.

Weitzman, Nelson, Siebring & Wechsler, 2005

Alcohol Abuse and Any Past Yr Alcohol Use
\[ r = 0.57; p < .0001 \]

Alcohol Abuse and Binge drinking
\[ r = 0.84; p < .0001 \]
The Prevention Paradox

- Greatest risk health harms among extreme behavior.
- HOWEVER, few extreme – many have “moderate” risk.
- “Moderate” risk is also risk
- Vast majority of health harms in a community arise among at moderate or low levels of risk.
- Greatest health gains in the population come from incrementally moving majority.

Rose (1985); Rose (1992)
High-risk & Population Approaches

- **High-risk**: change extreme, high-risk individuals, treatment

- **Population**: change majority, the *conditions* that shape *everyone’s* behavior.
Problems that stem from alcohol use are primarily a function of availability.
# Task Force Findings

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interventions Directed Toward the General Population</strong></td>
<td></td>
</tr>
<tr>
<td>Regulation of alcohol outlet density</td>
<td>Recommended based on sufficient evidence</td>
</tr>
<tr>
<td>Maintaining limits on days of sale</td>
<td>Recommended based on strong evidence</td>
</tr>
<tr>
<td>Maintaining limits on hours of sale</td>
<td>Recommended based on sufficient evidence</td>
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<tr>
<td>Increasing alcohol taxes</td>
<td>Recommended based on strong evidence</td>
</tr>
<tr>
<td>Overservice law enforcement initiatives</td>
<td>Insufficient Evidence</td>
</tr>
<tr>
<td>Dram shop liability</td>
<td>Recommended based on strong evidence</td>
</tr>
<tr>
<td><strong>Interventions Directed Toward Underage Drinkers</strong></td>
<td></td>
</tr>
<tr>
<td>Enhanced enforcement of laws prohibiting sales to minors</td>
<td>Recommended based on sufficient evidence</td>
</tr>
</tbody>
</table>

The Community Guide: What works to promote health

http://www.thecommunityguide.org/alcohol/index.html
Top policies to reduce binge drinking in the general population

1. Alcohol excise taxes (state)
2. State Alcohol Control Systems (Monopoly)
3. Bans on alcohol sales
4. Outlet density restrictions
5. Wholesale price restrictions
6. Retail price restrictions
7. ABCs present, functional, adequately staffed
8. Dram shop liability laws
9. Hours of sale restrictions
10. Restrictions on alcohol consumption in public places, events

Nelson et al. (2013)
Tax and Price Restrictions
Price is Inversely Associated with Violence

<table>
<thead>
<tr>
<th>Study name</th>
<th>r</th>
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<tbody>
<tr>
<td>Grossman, 1999</td>
<td>-0.013</td>
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<tr>
<td>Markowitz, 2000b</td>
<td>-0.026</td>
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<tr>
<td>Markowitz, 2000d</td>
<td>-0.012</td>
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<tr>
<td>Herttua, 2008b</td>
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<tr>
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<td>Markowitz, 2005</td>
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<td>Markowitz, 1998</td>
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<td>Markowitz, 2000a</td>
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<td>Markowitz, 2000a</td>
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<tr>
<td>Matthews, 2006</td>
<td>-0.175</td>
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<tr>
<td>TOTAL</td>
<td>-0.022</td>
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</tbody>
</table>

Wagenaar, Tobler & Komro, 2010
Tax and Price Restrictions
Price is Inversely Associated with Suicide

<table>
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<tr>
<th>Study name</th>
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<tbody>
<tr>
<td>Sloan, 1994</td>
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<tr>
<td>Birckmayer, 1999</td>
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<td>Birckmayer, 1999</td>
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<td>Birckmayer, 1999</td>
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<td>Markowitz, 2003</td>
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<td>Markowitz, 2003</td>
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<td>Markowitz, 2003</td>
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<td>Markowitz, 2003</td>
<td>-0.035</td>
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<td>Markowitz, 2003</td>
<td>-0.097</td>
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<td>Markowitz, 2003</td>
<td>-0.168</td>
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<tr>
<td>Yamasaki, 2005</td>
<td>0.570</td>
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<tr>
<td>TOTAL</td>
<td>-0.048</td>
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</tbody>
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Wagenaar, Tobler & Komro, 2010
Evidence from:

• Cross-sectional studies showing consistent positive association between outlet density and violence (e.g., crime, violent crime, injury, child abuse)

• Time-series analysis showing increases in violent crime, assaults, suicide following privatization

Appears to be a function of outlet aggregation

Campbell et al., 2009
Relative percentage change in diverse outcomes associated with increases of < 2 hours NSW, New South Wales
Effectiveness of Policies Restricting Hours of Alcohol Sales in Preventing Excessive Alcohol Consumption and Related Harms
Hahn, Robert A., PhD, MPH, American Journal of Preventive Medicine, Volume 39, Issue 6, 590-604
Copyright © 2010

Hahn et al, 2010
Effective interventions + Broad reach = Public Health Impact
Effective Policies are not Strongly Implemented in the US

Nelson et al., in review
What do we need moving forward?

• More research linking alcohol policy with violence outcomes
• More sophisticated theory
  – Emerging Social Ecology of Substance Use
• Identify mechanisms of action
• Studies to link
  – people
  – their behaviors
  – the context in which they behave
• Incorporate innovative methodologies

Nelson (2013)
Questions and Comments