Selecting, Implementing, and Evaluating Environmental and Population-Based Prevention Strategies

How To Use Science in Practice

Harold D. Holder, Ph.D.
Prevention Research Center
Berkeley, California
Goals

- Goal 1: Learn about population-based prevention approaches and “environmental strategies”

- Goal 2: Learn what local prevention need to do in assessing, implementing, and evaluating environmental strategies, i.e., strategic planning.

- Goal 3: Learn how to evaluate environmental strategies
What are some popular beliefs about environmental prevention strategies?

1. Environmental strategies are difficult to implement. Too costly.
2. Environmental strategies will not work in our community.
3. We are already doing environmental strategies.
4. ATOD abuse is more an individual problem and environmental strategies are not relevant.
5. Environmental strategies can not be evaluated.
6. Environmental strategies do not work with children and pre-teen youth.
Biggest Current Mistakes in Prevention?

- Doing many things that have little or no effect....

- “Not incorporating best prevention research into assessment, planning, and evaluation”
Current Challenges and Opportunities for Prevention

- Public Requirement of Outcomes
  Recommendation: Develop outcome data to show results

- Health Care Reform
  Recommendation: Take advantage of emphasis on prevention and outcomes in Health Care Reform documentation

- State Budget Cutbacks
  Recommendation: Demonstrate cost-effectiveness
Just What Is Environmental Prevention, Anyway?

- Environmental strategies in a community seek:
  1. To bring about system-level change (including physical space, local community policies, availability of drugs and alcohol, etc.) in order
  2. To reduce substance abuse problems at the population level. That is Public Health.

- Both conditions must be met.
Outcomes-Based Prevention

Substance-related consequences and substance use

Intermediate variables

Programs/policies/practices

Implementing the Strategic Prevention Framework
Planning, Monitoring, Evaluation, and Replanning
States are familiar with logic models:

Tools for assessing, planning, implementing, and evaluating prevention.
Logic models are composed of:

1. Prevention goal, *i.e.*, *specific ATOD outcome to be reduced or changed*

2. Intermediate variables or factors, *which need to be changed (or considered) in order to achieve the goal*

3. Intervention strategies *to change intermediate variables.*
Example Logic Model for Substance Abuse Prevention

What is wrong with this picture?

Substance-Related Consequences

Substance Use

Intermediate Variables

Strategies

Alcohol-Related TrafficCrashes Among 15- to 24-Year-Olds

Underage and Young Adult Binge Drinking

Underage and Young Adult Driving After Drinking

Youth 30-Day Cannabis Use

Youth and Young Adult Lifetime Drinking

School Bonding for Youth

School Drug Resistance Training

Awareness of Risk of Drinking

Low Personal Self-Esteem

Public Education About Drinking and Driving Risks

Perceived Risk of Drinking and Driving Enforcement

Youth Frequent Exposure to Internet

Number of DUI Arrests

Highly Visible DUI Enforcement

Increased Abstinence

Family Training

Responsible Beverage Service To Reduce Overserving
Alcohol Sales and Service Regulations, Enforcement, and Sanctions

Price
Retail Availability
Alcohol Serving and Sales Practices

Alcohol-Related Motor Vehicle Crash Model

DUI Enforcement
Public Awareness of Drinking/Driving Enforcement
Community Norms–Drinking and Driving

Perceived Risk of DUI Arrest

Drinking
Drinking Context
Social Availability
Community Norms–Drinking

Individual Factors

Driving After Drinking

Alcohol-Related Motor Vehicle Crashes

Research Evidence
- Strong Relationship
- Moderate Relationship
- Minor Relationship
- Little Research Evidence but Logical Relationship
Review of Research Evidence for Logic Models

WWW.PIRE.org

Underage Drinking Logic Model

- Underage drinking laws
- Visible enforcement
- Social availability of alcohol to youth (parties, peers, families)
- Retail sale of alcohol to youth
- Underage drinking

Factors:
- Compliance checks, citations, license loss
- Retailer training & rewards
- Discount bans
- Price
- Local alcohol policy
- Community concerns about youth drinking
- Party patrol, shoulder taps, beer keg registration
- Media advocacy
- Legal risks for providing alcohol to underage youth
Examples of Effective Local Prevention Projects Utilizing Environmental Strategies
National Community Trial To Prevent Alcohol-Involved Trauma

Experimental Comparison

Modesto
Salinas
Orange
Oceanside
Florence
Sumter
Alcohol-Involved Trauma at the Community Level: Logic Model

MOBILIZATION

Local News About Alcohol Problems and Enforcement

DRINKING AND DRIVING

Perceived Risk of Arrest

Local Law Enforcement

UNDERAGE DRINKING

Social Access to Alcohol

Driving After Drinking

Non-Traffic Risk Activities

Alcohol Intoxication or Impairment

Retail Alcohol Availability (on- and off-premise)

Local Regulation of Alcohol (density, hours of sale)

ALCOHOL ACCESS

Responsible Beverage Service

Alcohol Serving and Sales Practices
Restaurant Service

83% of Salinas, CA residents believe an alcohol server should take steps to prevent a customer from getting drunk.
Highly visible and increased actual drinking and driving enforcement
Team increases DUI arrests in Oceanside

OCEANSIDE — The Police Department's new focus on catching drunken drivers has yielded immediate results in Oceanside, according to a press release. In January of this year, 111 drivers were arrested for driving under the influence, the release stated. During the same month in 1993, only 56 were arrested. There were 57 arrested in January 1992.

Oceanside police, using the zero-tolerance law that took effect Jan. 1, also have seized the licenses of eight drivers under 21 years old allegedly caught with alcohol on their breath. Under the new state law, police can revoke for one year the license of any driver under 21 caught behind the wheel with a 0.01 blood alcohol level or higher. The legal limit for drivers 21 or over is 0.08.

Since two Oceanside officers were assigned in November to hunt for drunken drivers full-time, the average number of arrests per day for driving under the influence has increased from 1.71 to 2.53, the release stated.

"We're just getting started," Officer Ken Cowing said in the release. "For the safety of our citizens and all who drive on our streets, it's important that people realize that impaired driving will definitely not be tolerated in Oceanside."
Underage Drinking

In Salinas California, 90% of students who drink report attending parties where minors drank.
Intermediate Variable and Strategy Data
Underage drinkers targeted

By David Hicks
Staff Writer

OCEANSIDE — Have a drink, lose your license for a year.
After Jan. 1, it will be that simple for drivers under the age of 21 who are caught with any alcohol on their breath.
The state calls it “Zero Tolerance.” The goal is to cut down on injuries and fatalities caused by drunken drivers, and a good 10 percent of those are the fault of youths who are under the legal drinking age, authorities said.
“Legally, they’re not supposed to have access to alcohol in the first place,” said George Gaumont of the Oceanside Substance Abuse Prevention Coalition, which plans to start a major campaign to publicize the new law with a big splash today at El Camino High School.
“This law is a lot stronger; it has a lot more teeth than the DUI laws do now,” Gaumont added.
Under the new state law that will take effect on the first of the year, officers carrying portable Breathalyzers will immediately seize the license of any driver under 21 caught behind the wheel with a blood-alcohol level of 0.01 or higher. Current law makes it illegal to drive with a 0.08 blood-alcohol level or higher.
The youth will lose his or her license for one year, said California Department of Motor Vehicles spokesman Evan Nossoff. Once the officer takes the license, he will give the driver a 30-day temporary driving permit, then mail the original to the DMV. The driver will have that month to appeal the suspension; otherwise, officials will revoke driving privileges for a year, Nossoff said.
All the paperwork will be handled by the DMV, with the suspect, never going to court, Nossoff said.
“We’re less interested in whose license gets yanked than that teenagers draw a consequence between drinking and driving,” he said. “We’re not looking to increase arrests; we’re hoping that it reduces fatalities, injuries and accidents.”
In California during 1992, about 3,100 drunken drivers under 21 were involved in injury accidents, according to statistics released by the California Highway Patrol. Almost 200 of those youths died, statistics showed.
Another statistic indicated a total of 325 people under 21 were killed in alcohol-related vehicle accidents in 1992, and another 10,433 were injured.

“The No. 1 killer of teens in the United States is alcohol-related highway deaths,” Oceanside police Capt. Mike Poehlman said. “If you’re under 21, you cannot possess or drink alcohol. Anyone who is doing that and driving is going to lose their driving privilege.”
Newspaper Factor Score - Local Stories

Organizational Development and Planning
Training, Planning and 1st Media Events
Additional Training
Ongoing Advocacy Efforts

Experimental Sites  Comparison Sites

JFMAMJ JASONDJFMMAMJ JASONDJFMMAMJ JASONDJFMMAMJ JASONDJFMMAMJ

0 1 2 3 4
-2 -1 0 1 2 3 4

Experimental Sites  Comparison Sites
Underage Alcohol Prevention Activities

Graph showing:
- ENFORCEMENT VISITS
- CITATIONS ISSUED
- OUTLETS TRAINED

Graph axes:
- X-axis: Q2, Q3, Q4, Q1, Q2
- Y-axis: 0 to 160
“Mountain of Beer”
Underage Alcohol Purchase Survey
Experimental and Comparison Communities

Holder, et al., J. American Medical Association, 2000
Outcomes

What were final results?
NIGHTTIME INJURY CRASHES
(Numbers per Month; 3 E, 3C)

DIFFERENCE FROM TREND
(LOG RELATIVE RATES)

MONTH AND YEAR OBSERVED

-1.25
-1.00
-0.75
-0.50
-0.25
  0.00
  0.25
  0.50
  0.75
  1.00
  1.25

Project Begins
Full Implementation
HOSPITALIZED ASSAULT CASES
(Cases Discharged per Month; 2E, 2C)

DIFFERENCE FROM TRENDS
(LOG RELATIVE RATES)

MONTH AND YEAR OBSERVED

Project Begins
Full Implementation
### Examples of Community Action Projects for Environmental Prevention

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>GOALS</th>
<th>STRATEGIES</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California, South Carolina</td>
<td>Reduce alcohol injury and death</td>
<td>• DUI enforcement</td>
<td>➢ 10% reduction in alcohol crashes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alcohol service</td>
<td>➢ 43% reduction in violence</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• News coverage</td>
<td>➢ Lower alcohol sales to youth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Underage sales</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alcohol outlets</td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>Reduce youth drinking</td>
<td>• Local sales policies and enforcement</td>
<td>➢ Lower alcohol sales to youth</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Reduce alcohol crashes</td>
<td>• News coverage</td>
<td>➢ Reduced traffic crashes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• DUI enforcement</td>
<td>➢ 25% reduction in fatal crashes</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>GOALS</td>
<td>STRATEGIES</td>
<td>RESULTS</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Sweden</td>
<td>Reduced local alcohol and drug problems</td>
<td>• Responsible Beverage Service</td>
<td>➢ Reduction in sales to intoxicated patrons (47% to 5%)</td>
</tr>
<tr>
<td>STAD Project</td>
<td></td>
<td>• Joint parent/police enforcement of sales to youth</td>
<td>➢ Violent crime down by 29%</td>
</tr>
<tr>
<td>Stockholm</td>
<td></td>
<td>• Club policy and drug recognition by door security</td>
<td>➢ Refusals of drug impaired patrons increased by 300%</td>
</tr>
<tr>
<td>Australia</td>
<td>Lower alcohol-involved violence</td>
<td>• Community forum and alcohol safety audit</td>
<td></td>
</tr>
<tr>
<td>Surfers</td>
<td></td>
<td>• Model house policies</td>
<td></td>
</tr>
<tr>
<td>Paradise</td>
<td></td>
<td>• Increased enforcement of alcohol-licensed premises</td>
<td></td>
</tr>
<tr>
<td>Safety Action</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What Have We Learned to This Point?

- Environmental prevention can produce measurable results.

- Logic Model in environmental prevention must be based on empirical evidence about intermediate variables.

- Environmental strategies must be selected that have been shown to work—that is, impact key intermediate variables.

- Do few things well. High “dosage” to be effective.
Next

- Learn tools and approaches to monitor and evaluate environmental strategies.

- Discuss ways for communities in more effective in environmental prevention.