

Costs of Substance Abuse in the California

Presented to

GOVERNOR'S PREVENTION ADVISORY COUNCIL (GPAC)

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Acknowledgement to Dr. Ted Miller

- For creating these useful tools
- For many of today's slides



PIRE Cost Estimate Project

- Purpose: Make economic case for Alcohol and Other Drug (AOD) prevention and treatment
 - Update California cost estimates of AOD burden
 - Create county level estimates of AOD burden
 - Adapt cost benefit analyses of effective, school-based prevention to California
- Statewide Epidemiological Workgroup (SPF-SIG) assisted Dr. Ted Miller and his team at Pacific Institute for Research and Evaluation (PIRE)

Why Study Costs?

Provides a Single Compact Metric for:

- Problem size and risk assessment
- Priority setting and resource allocation
- Performance comparison
- Program evaluation
- Advocacy

A man in a blue jacket and dark pants is sitting on a grey plastic crate on a city sidewalk. He is holding a large, hand-drawn sign that reads "NEED CASH FOR ALCOHOL RESEARCH". In front of him is another black plastic crate containing a green cup and a white cup. The background shows a busy street with pedestrians and a blue utility pole.

NEED CASH
FOR ALCOHOL
RESEARCH

Example of Using Cost Estimates: Oregon

- Had consumption data by county
- Paid to get costs by county
- Worked with coalitions to understand the problem, plan solutions and communicate messages (e.g., technical assistance)
- Press releases: costs by county, how to solve
- Pushed county and state legislatures re costs
- Changed social norms, enforcement and laws

Project Tools Created

- California Statewide Cost Estimates
 - State handout in packet
- California County-level Cost Estimates
 - County handouts in packet
- Technical Methods Report
- Adaptation of Cost Benefits Analysis for California

Types of Costs Related to Substance Use

TANGIBLE Costs

Direct Costs

Value of tangible goods and services (e.g. medical costs, property damage, public services)

Indirect Costs

Loss of work either in the workplace or at home (e.g. lost work of the victim of an assault)

INTANGIBLE Costs

Quality of Life Costs

Pain, suffering, and lost quality of life (e.g. reduced quality of life due to permanent physical and/or mental trauma)

Quality Adjusted Life Year (QALY)

- Method used in economic analyses to measure disease burden and value health outcomes
 - Function of length and quality of life lived
 - Reflects both lives saved and valuations of quality of life
- QALY assumes that a year of life lived in perfect health is worth 1 QALY (1 Year of Life \times 1 Utility value = 1 QALY) and that a year of life lived in a state of less than this perfect health is worth less than 1.
- Cost effectiveness is expressed as '\$ per QALY'.

Cost of Alcohol and Illicit Drugs in California, 2010

Total Cost Estimate - \$172.6 Billion

Cost Category	Alcohol	Illicit Drugs	Total
Tangible Costs	\$37,528,532,700	\$15,074,185,700	\$52,602,718,400
Quality of Life	\$91,194,984,900	\$28,820,959,600	\$120,015,944,500
Total	\$128,723,517,600	\$43,895,145,300	\$172,618,662,900

Total Costs per CA Resident, 2010

- Overall per capita cost estimate
 - **\$4,625 per California resident!**
- Alcohol costs are 2.9 times higher than Illicit Drug costs
 - \$3,449 for Alcohol misuse and abuse
 - \$1,176 for Illicit Drug abuse

Tangible AOD Costs by Category California 2010 (in Billions)

Cost Category	Alcohol	Illicit Drugs	Total	%
Medical	\$8.331	\$4.006	\$12.337	23%
Wage Work	\$17.335	\$5.321	\$22.657	43%
Household Work	\$6.819	\$1.847	\$8.667	16%
Public Services	\$1.328	\$3.351	\$4,680	9%
Property Damage	\$1.791	\$.425	\$2.216	4%
Miscellaneous Motor Vehicle	\$1.925	\$.122	\$2.046	4%
Tangible Costs	\$37.529	\$15.074	\$52.603	100%

Tangible Costs of Substance Abuse by Government Sources, California, 2010

- Total tangible costs absorbed by federal, state and local government sources
 - **\$12.5 billion (24%)**
- Federal costs - \$5.467 billion
- California state and local costs - \$6.998 billion
 - MediCal \$1.357 billion
 - Tax Losses \$961 million.
 - Public services share \$4.680 billion (e.g., police, fire, courts, and child welfare)
 - **Translates to \$188 per CA resident in 2010**

Non-Government Tangible Costs of Substance Abuse, California, 2010

- **\$40.138 billion (76%)** of costs are bore by the California economy and its citizens indirectly
 - Business (e.g., lost productivity, increased employee turn over, higher insurance costs)
 - Health care (e.g., unpaid medical costs)
 - Higher consumer prices
 - Reduced income (e.g., wage losses)
 - Increased insurance premiums
 - Non-reimbursed property damage

County Cost Estimates

- County Fact Sheets provide:
 - Total cost estimates for each county
 - Per capita cost comparisons
 - By alcohol and illicit drug costs
 - By county ranking with color coded state maps
 - Costs by Cost Category
 - Costs by Type of harm
 - Brief Methods

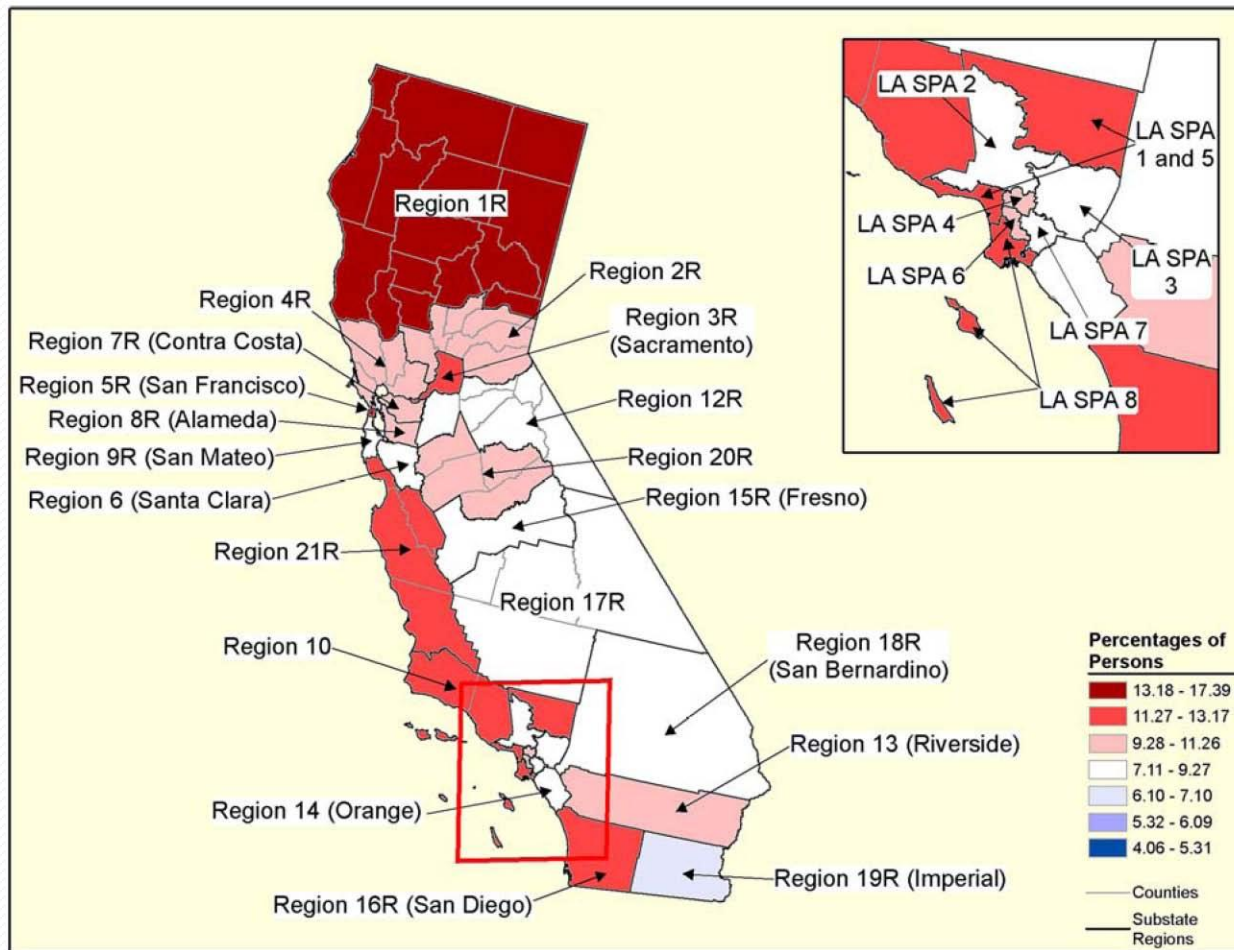
Ways of Using Cost Data

- Public policy
 - Government costs
- Localize
 - County estimates
- Media bites
 - Creative epidemiology
- Relative comparisons
 - County comparisons using rankings



Use of County Excel Work Sheets

Figure 5.1 Illicit Drug Use in the Past Month among Persons Aged 12 or Older in California by Substate Region Percentages¹



NOTE: The legend's ranges were created by dividing 362 substate regions, nationally, into 7 groups based on the magnitude of their percentages. For substate region definitions, see the "2008-2010 National Survey on Drug Use and Health Substate Region Definitions" at <http://www.samhsa.gov/data/NSDUH/substate2k10/toc.aspx>.

Source:

SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, and 2010 (Revised March 2012).

“Creative Epi”

- HOW BIG IS \$172 BILLION
- Total U.S. costs for cardiovascular disease in 2010
 - \$444 billion
- Economic costs of smoking:
 - ~\$157 billion annually economic losses
- Exxon Mobil - #1 on 2012 Fortune 500
 - \$453 billion in total revenue

Cost Benefit Analysis of Substance Abuse Prevention in California



Is your money working hard enough for you?

Cost-Benefit Analysis of School-based Substance Abuse Prevention Programs

- Use of effective school-based programs
- Effective programs can delay start of substance use by 2 years on average
 - % and # of youth 12-14 who delay start-up
 - % reduction in substance use
- Reduction in negative consequences over the lifetime

Table 4: Cost Savings Achieved Through the Implementation of School-Based Alcohol and Other Drug Prevention Programming Throughout California

Cost Category	Low Estimate	Medium Estimate	High Estimate
Total Cost Savings Per Pupil	\$1,360	\$3,079	\$6,660
Monetary Cost Savings Per Pupil (Excluding Quality of Life)	\$756	\$1,521	\$3,232
Cost-Benefit Ratio	3.9	8.9	19.2
Cost-Monetary Benefit Ratio	2.2	4.4	9.3
Net Savings Per Pupil	\$1,013	\$2,731	\$6,313
Total Net Savings	\$1,544,732,653	\$4,166,283,792	\$9,629,976,629

Low, Medium, and High estimates of Savings Per Pupil, Cost-Benefit Ratio, and Net Cost Savings from implementing School-Based Prevention Programming in 2009 throughout California for youth ages 12-14; Excludes associated savings from reduced smoking (in 2010 Dollars)

Cost-Benefit Ratios for Environmental Strategies

PROGRAM	CBR
20% Alcohol Tax	9
30% Alcohol Tax	6
21 Minimum Drinking Age	4
Mandatory Server Training	4
Enforce Serving Intoxicated Patrons Law	84
Provisional License, 12AM Driving Curfew	8
Zero ETOH Tolerance, Driver LT 21	25
Workplace Peer Support & AOD Testing	30



Thank You!

Questions?

Sources used to estimate incidence and costs of harm attributable to substance abuse

Event	# Cases	Underreporting	Attribution	Unit Costs
Diseases Treated in Hospital Inpatient or Emergency Department	2009 CA Hospital & ED Discharge Data censuses	N/A	Harwood et al. 1998; Midanik et al. 2004	Charges on file * Cost-to-charge ratios * 1994 CHAMPUS professional fee to inpatient cost ratio
Injuries Treated in Hospital Inpatient or Emergency Department	2009 CA Hospital & ED Discharge Data censuses	N/A	Miller & Spicer 2012	Finkelstein et al. 2006; Lawrence et al. 2009
Acute & Chronic Disease Mortality	2010 CA Vital Statistics Multiple Cause of Death data	N/A	Rehm et al. 2006, 2009	Finkelstein et al. 2006
Other Injury Mortality	2010 CA Vital Statistics Multiple Cause of Death census	N/A	Rehm et al. 2006, 2009	Finkelstein et al. 2006
Child Maltreatment	2008 Child Welfare Service data system	Sedlak et al. 2010	Miller et al. 2006	Fang et al. 2012, Miller 2012
Substance Abuse Treatment	2006-2011 California Outcomes Measurement System Treatment data	N/A	N/A	French et al. 2008 + follow-up care from Barnett et al. 2008

Sources used to estimate incidence and costs of harm attributable to substance abuse (con't.)

Event	# Cases	Underreporting	Attribution	Unit Costs
Impaired Driving Deaths	2010 Fatality Analysis Reporting System (FARS)	FARS infers missing driver alcohol involvement	Miller et al 1999	Lawrence et al. 2009
Impaired Driving Crashes	2010 CA Highway Patrol Statewide Integrated Traffic Records System	Miller et al. 2012; Blincoe et al. 2002	Miller et al 1999	Zaloshnja et al 2009
Index Crimes	2009 Uniform Crime Reports	National Crime Victimization Survey online analysis; Miller et al. 1996	Miller & Spicer 2012, Miller et al. 2006	McCollister et al. (2010), Miller 2012
Arrests	2009 CA Monthly Arrest and Citation Register (MACR)	Bureau of Justice Statistics 2011, Tables 4.6 and 4.72	Miller & Spicer 2012; original estimates	Miller 2012