# Library Watch on driving

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**Comparison of indirect sources of efficacy information in pretesting messages for campaigns to prevent drunken driving.**

Anderson R. *Journal of Public Relations Research* 21(4): 428-454, 2009. (77 refs.)

Enabling publics to remove the constraints that prevent health enhancement is the focus of much scholarly research and professional practice. This experiment tested the impact of 2 forms of symbolic modeling and verbal persuasion on self-efficacy beliefs and intentions to prevent a friend from driving drunk. Three efficacy-enhancing public service announcements tested participants' beliefs in their confidence to intervene successfully. As predicted, behavioral and verbal modeling engendered greater perceived self-efficacy and behavioral intentions than did verbal persuasion, with behavioral modeling registering the greatest effects. Implications for designing campaigns of self-directed change to prevent drunken driving among college students are discussed, as well as possible directions for research on self-efficacy and the situational theory of publics. 

**Effectiveness of mandatory alcohol testing programs in reducing alcohol involvement in fatal motor carrier crashes.**

Brady JE; Baker SP; DiMaggio C; McCarthy ML; Rebok GW; Li GH. *American Journal of Epidemiology* 170(6): 775-782, 2009. (28 refs.)

Mandatory alcohol testing programs for motor carrier drivers were implemented in the United States in 1995 and have not been adequately evaluated. Using data from the Fatality Analysis Reporting System during 1982-2006, the authors assessed the effectiveness of mandatory alcohol testing programs in reducing alcohol involvement in fatal motor carrier crashes. The study sample consisted of 69,295 motor carrier drivers and 83,436 non-motor-carrier drivers who were involved in 66,138 fatal multivehicle crashes. Overall, 2.7% of the motor carrier drivers and 19.4% of the non-motor-carrier drivers had positive blood alcohol concentrations. During the study period, the prevalence of alcohol involvement in fatal crashes decreased by 80% among motor carrier drivers and 41% among non-motor-carrier drivers. With adjustment for driver age, sex, history of driving while intoxicated, and survival status, implementation of the mandatory alcohol testing programs was found to be associated with a 23% reduced risk of alcohol involvement in fatal crashes by motor carrier drivers (odds ratio = 0.77, 95% confidence interval: 0.62, 0.94). Results from this study indicate that mandatory alcohol testing programs may have contributed to a significant reduction in alcohol involvement in fatal motor carrier crashes. 

**Intoxication is not always visible: An unrecognized prevention challenge. (review).**

Brick J; Erickson CK. *Alcoholism: Clinical and Experimental Research* 33(9): 1489-1507, 2009. (97 refs.)

"Intoxication" is not always visible even to trained observers. The goals of this review are (i) to educate prevention specialists about the state of knowledge in determining intoxication, (ii) to provide an authoritative treatise on the subject of visible intoxication, and (iii) to address the medicolegal consequences of such intoxication-primarily the prevention of impaired driving. "Intoxication" is not always visible even to trained observers. The goals of this review are (i) to educate prevention specialists about the state of knowledge in determining intoxication, (ii) to provide an authoritative treatise on the subject of visible intoxication, and (iii) to address the medicolegal consequences of such intoxication-primarily the prevention of impaired driving. The author reviews different types of tolerance - acute tolerance, functional tolerance, environment-dependent tolerance, and metabolic tolerance. The author reviews a series of experiments over a period of seven decades, which explore efforts to define tolerance, and the ability to recognize it. The author concludes that "most, if not all, of the studies suggest that BACs that would impair driving and be in violation of the drinking driving statute (80-100 mg/dl, depending on the state and year of the study), do not produce reliable signs of visible intoxication in most subjects." 

**Screening for drugs in oral fluid: Illicit drug use and drug driving in a sample of urban and regional Queensland motorists.**

Davey J; Freeman J; Lavelle A. *Transportation Research*. Part F, Traffic Psychology and Behaviour 12(4): 311-316, 2009. (23 refs.)

Police services in a number of Australian states and overseas jurisdictions have begun to implement or consider random road-side drug testing of drivers. This paper outlines research conducted to provide an estimate of the extent of drug driving in a sample of Queensland drivers in regional, rural and metropolitan areas. Oral fluid samples were collected from 2657 Queensland motorists and screened for illicit substances including cannabis (delta 9 tetrahydrocannibinol [THC]), amphetamines, ecstasy, and cocaine. Overall, 3.8% of the sample (n = 101) screened positive for at least one illicit substance, although multiple drugs were identified in a sample of 23 respondents. The most common drugs detected in oral fluid were ecstasy (n = 53), and cannabis (n = 46) followed by amphetamines (n = 23). A key finding was that cannabis was confirmed as the most common self-reported drug combined with driving and that individuals who tested positive to any drug through oral fluid analysis were also more likely to report the highest frequency of drug driving. Furthermore, a comparison between drug vs. drink driving detection rates for one region of the study, revealed a higher detection rate for drug driving (3.8%) vs. drink driving (0.8%). This research provides evidence that drug driving is relatively prevalent on Queensland roads, and may in fact be more common than drink driving. This paper will further outline the study findings' and present possible directions for future drug driving research. 

**Emergency department charges for evaluating minimally injured alcohol-impaired drivers.**

Lee MH; Mello MJ; Reinert S. *Annals of Emergency Medicine* 54(4): 593-599, 2009. (10 refs.)

Study objective: The literature on the costs of treating alcohol-impaired motor vehicle crash victims is largely based on inpatient data. Less is known about the more frequent emergency department (ED) evaluations for those who are discharged home. Our objective is to measure the difference in charges and length of stay between alcohol-impaired and nonimpaired drivers in this population. Methods: This was a retrospective study of charts and billing data for all drivers in motor vehicle crashes, aged 21 to 65 years, treated at an urban Level I trauma center in 2005 and discharged home from the ED. Patients were divided into alcohol-positive and -negative groups according to alcohol level, documentation of recent alcohol use, or clinical intoxication. Itemized charges were tabulated and compared across groups. Results: Of 1,618 eligible patients, median charges were higher for alcohol-positive patients by $4,538 (95% confidence interval [CI] $2,755 to $5,665). Imaging was 69% of the charge differential because of a higher frequency of imaging (91% versus 70%) and more expensive studies (median difference $2,464; 95% CI $1,507 to $3,400) for alcohol-positive patients. Median length of stay was higher for alcohol-positive patients by 3.3 hours (95% CI 2.7 to 4.1 hours). When stratified by trauma-protocoled triage destination, median charges were higher for alcohol-positive versus -negative patients in non-critical care beds by $2,229 (95% Cl $1,039 to $2,693). For patients triaged to critical care beds, the difference in charges was only $132 (95% CI -$1,677 to $1,233). Conclusion: The presence of alcohol substantially increased charges and length of stay for ED evaluations of injured drivers discharged home, especially for patients who were triaged to non-critical care beds. The magnitudes are striking for this minimally injured population and represent an underreported burden of alcohol-impaired driving. 

**Gender differences in alcohol impairment of simulated driving performance and driving-related skills.**

Miller MA; Weafer J; Fillmore MT. *Alcohol and Alcoholism* 44(6): 586-593, 2009. (59 refs.)

Aims: Considerable laboratory research indicates that moderate doses of alcohol impair a broad range of skilled activities related to driving performance in young adults. Although laboratory studies show that the intensity of impairment is generally dependent on the blood alcohol concentration, some reviews of this literature suggest that women might be more sensitive to the impairing effects of alcohol than men. The present study tested this hypothesis. Methods: Drawing on data from previous experiments in our laboratory, we compared men and women in terms of the degree to which a challenge dose of alcohol (0.65 g/kg) impaired their simulated driving performance and measures of three separate behavioral and cognitive functions important to driving performance: motor coordination, speed of information processing and information-processing capacity. Results: Alcohol significantly impaired all aspects of performance. Moreover, women displayed greater impairment than men on all behavioral tests and also reported higher levels of subjective intoxication compared with men. Conclusions: Both biological and social-cultural factors have been implicated in gender differences in

the behavioral responses to alcohol. The current evidence of heightened sensitivity to alcohol in women highlights the need for better understanding the biological and environmental factors underlying this gender difference. 

**Driving after binge drinking.**
Naimi TS; Nelson DE; Brewer RD. *American Journal of Preventive Medicine* 37(4): 314-320, 2009. (31 refs.)
Background: Although binge drinking is strongly associated with alcohol-impaired driving, little is known about the prevalence of or risk factors for driving after binge drinking. Purpose: The purpose of this study was to assess the prevalence of, and risk factors for, driving during or shortly after a specific binge drinking episode. Methods: The data were analyzed in 2007 and 2008 from 14,085 adults from 13 states in 2003 and 14 states in 2004 who reported binge drinking and answered an additional series of questions about binge drinking behaviors as part of the Behavioral Risk Factor Surveillance System survey. Binge drinking was defined as the consumption of five or more drinks during a drinking occasion. Results: Overall, 11.9% of binge drinkers drove during or within 2 hours of their most recent binge drinking episode. Those drinking in licensed establishments (bars, clubs, and restaurants) accounted for 54.3% of these driving episodes. Significant independent risk factors for driving after binge drinking included male gender (AOR=1.75); being aged 35-54 or >= 55 years compared to 18-34 years (AOR=1.58 and 2.37, respectively); and drinking in bars or clubs compared to drinking in the respondent's home (AOR=7.81). Drivers who drank most of their alcohol in licensed establishments consumed an average of 8.1 drinks, and 25.7% of them consumed >= 10 drinks. Conclusions: Because binge drinking and subsequent driving were common in establishments licensed to sell alcohol, and because licensing is conditional on responsible beverage service practices (i.e., not selling to intoxicated people), efforts to prevent impaired driving should focus on enforcing responsible beverage service in licensed establishments. 

**The impact of remedial intervention on 3-year recidivism among first-time DUI offenders in Mississippi.**
Robertson AA; Gardner S; Xu XH; Costello H. *Accident Analysis and Prevention* 41(5): 1080-1086, 2009. (46 refs.)
This study examines the impact of the Mississippi Alcohol Safety Education Program (MASEP), a court-mandated intervention program, on 3-year recidivism rates among first-time DUI offenders (i.e. those convicted of a first offense for driving under the influence of alcohol or another drug). It also examines whether a new version of the curriculum that incorporates activities to enhance motivation for change further ameliorates recidivism. Cox proportional hazard regression models are used to compare recidivism rates among DUI offenders who completed MASEP with those who did not complete or who failed to enroll in the program. Recidivism rates were also compared for MASEP participants across time periods during which curriculum revisions were introduced. The hazard of recidivism was lower for individuals who completed the program than for individuals who did not complete or did not enroll in the program. Recidivism rates were further reduced following the introduction of curriculum revisions. Attendance of court-mandated remedial intervention programs lower subsequent DUI arrests and program content is associated with lower rates. 

**Ethnicity, age, and trends in alcohol-related driver fatalities in the United States.**
Roudsari B; Ramisetty-Mikler S; Rodriguez LA. *Traffic Injury Prevention* 10(5): 410-414, 2009. (38 refs.)
Objective: To evaluate the 8-year ethnic-specific declining trend in the proportion of alcohol-impaired driver deaths in the United States. Methods: We used the Fatality Analysis Reporting System (FARS), which is a census of all fatal motor vehicle collisions occurring in public properties in all 50 states, the District of Columbia, and Puerto Rico since 1975. For this study we only focused on driver fatalities. Data on ethnicity were not included in the FARS database until 1999, limiting the analysis to the years 1999-2006. Results: The proportion of alcohol-impaired driver deaths was higher among males compared to females, with Hispanics constituting the highest proportion in all age groups. During the past 8 years, only the decline in the proportion of alcohol-impaired driver deaths among male Hispanics 16-20 years old and male Whites 21-64 years old were significant. We were not able to identify any significant declining trend in the corresponding proportions among other age groups, or among female drivers, regardless of their age category. Conclusion: Though existing strategies have seemed to be successful in preventing an uptrend in alcohol-related fatal collisions in the country, their effectiveness in decreasing such incidents has been limited. Future studies should identify the factors that might influence the

effectiveness of current anti-drunk driver policies. 

**The burden of road trauma due to other people's drinking.**

Connor J; Casswell S. *Accident Analysis and Prevention* 41(5): 1099-1103, 2009. (27 refs.)

The purpose of this study was to estimate the burden of road traffic injury due to alcohol consumption by someone other than the injured party. We estimated the number and proportion of these traffic deaths and non-fatal traffic injuries, and the associated social costs, for a five-year period (2003-2007) in New Zealand. We found that more than 40% of alcohol-related crash injuries in New Zealand are suffered by people who have not themselves been drinking. While the rate of road traffic injuries and the involvement of alcohol peak amongst young adults, so too does the proportion of all road traffic crash injuries that are due to other people's drinking. reaching one in five in the 15-19-year age group. Most innocent victims are car passengers, and this includes almost all children who are injured by drink driving. For a large majority of the children injured, the driver affected by alcohol is the driver of their own car. Using official cost figures, alcohol-related injuries to innocent victims cost the country more than half a billion dollars per year. 

**Toward national estimates of alcohol use disorders among drivers: Results from the national roadside survey pilot program.**

Furr-Holden CD; Voas RB; Lacey J; Kelley-Baker T; Romano E; Smart M. *Traffic Injury Prevention* 10(5): 403-409, 2009. (28 refs.)

Objective: To determine whether drivers contacted at the roadside can be screened for alcohol use disorders (AUDs). Secondarily, to produce preliminary estimates of AUDs among drivers and estimate the relationship between AUD status and BAC measured at the roadside. Methods: A two-phase survey program was undertaken. In phase 1, 206 motorists were interviewed at the roadside using a 15-item AUD Survey derived from a condensed version of the AUDADIS and the AUDIT-C. One hundred sixty-seven of these motorists were invited, for a $25 incentive, to call the research team within 48 h of the roadside assessment to repeat the questionnaire and complete a more detailed AUD assessment. Phase 2 involved a 6-state pilot test of the AUD Survey as an add-on to the 2005 National Roadside Survey Pilot Program. The setting for both phases of the survey program was US roadways on weekends between 10 p.m. and 3 a.m. Results: Ninety-seven percent of all eligible drivers completed the AUD questionnaire. The correlation between roadside and telephone interview results was 0.3 for alcohol abuse, 0.6 for alcohol dependence and heavy drinking, and 0.7 for binge drinking. Alcohol abuse and dependence diagnoses had 0.6 and 0.7 correlations with diagnoses derived from the full AUDADIS and the AUDIT-C had a 0.8 correlation with the full AUDIT. There was also a statistically significant and positive relationship between having a positive BAC at the roadside and meeting criteria for heavy drinking. Conclusions: AUD status can be effectively measured at the roadside. The poor reliability for alcohol abuse is related to underreporting of drinking and driving during roadside assessments, compared to telephone follow-up. Other measures of hazardous alcohol use should be used in the roadside context to measure alcohol abuse. 

**The effect of scheduling and withdrawal of carisoprodol on prevalence of intoxications with the drug.**

Hoiseth G; Karinen R; Sorlid HK; Bramness JG. *Basic & Clinical Pharmacology & Toxicology* 105(5): 345-349, 2009. (36 refs.)

The centrally acting muscle relaxant carisoprodol has previously been shown to cause psychomotor impairment and to have a narrow therapeutic range. In Norway, carisoprodol was therefore reclassified to the highest scheduling level from 1 August 2007 and withdrawn from the market on 1 May 2008. The aim of this study was to examine to what extent this action resulted in reduced numbers of driving under the influence (DUI) cases and forensic autopsies concerning carisoprodol, as well as reduced numbers of contacts to the National Poisons Information Centre (NPIC) in Norway regarding carisoprodol. From 2004 to 2008, carisoprodol (and/or its metabolite meprobamate) was detected in a total of 1261 DUI cases, decreasing from 312 in 2004 to 47 in 2008. During the same period, carisoprodol was detected in 194 forensic autopsies, also here decreasing, from 53 cases in 2004 to 11 cases in 2008. The NPIC received 1180 contacts primarily concerning carisoprodol over this period, decreasing from 267 contacts in 2004 to 87 contacts in 2008. During the same period, the sales figures for carisoprodol decreased dramatically, and we observed a relation between the numbers of DUI cases, forensic autopsies and contacts to the NPIC concerning carisoprodol and the sales figures for the drug. This study showed that the rescheduling and withdrawal of carisoprodol from the Norwegian market had a positive effect on the prevalence of carisoprodol in impaired driving, deaths and contacts regarding intoxications. This, together with previous

publications, indicates that the population reflected in our data uses regularly prescribed carisoprodol and, to a lesser degree, drug from an illegal street market. 

**Secondhand tobacco smoke concentrations in motor vehicles: A pilot study.**

Jones MR; Navas-Acien A; Yuan J; Breysse PN. *Tobacco Control* 18(5): 399-404, 2009. (34 refs.)

Context: Motor vehicles represent important micro-environments for exposure to secondhand smoke (SHS). While some countries and cities have banned smoking in cars with children present, more data are needed to develop the evidence base on SHS exposure levels in motor vehicles to inform policy and education practices aimed at supporting smoke-free motor vehicles when passengers are present. Objective: To assess exposure to secondhand tobacco smoke in motor vehicles using passive airborne nicotine samplers. Methods: 17 smokers and five non-smokers who commute to and from work in their own vehicle participated. Two passive airborne nicotine samplers were placed in each vehicle for a 24-hour period, one at the front passenger seat headrest and the other in the back seat behind the driver. At the end of the sampling period, airborne nicotine was analysed by gas chromatography. Results: Median (IQR) air nicotine concentrations in smokers' vehicles were 9.6 mu g/m(3) (5.3-25.5) compared to non-detectable concentrations in non-smokers' vehicles. After adjustment for vehicle size, window opening, air conditioning and sampling time, there was a 1.96-fold increase (95% CI 1.43 to 2.67) in air nicotine concentrations per cigarette smoked. Conclusions: Air nicotine concentrations in motor vehicles were much higher than air nicotine concentrations generally measured in public or private indoor places, and even higher than concentrations measured in restaurants and bars. These high levels of exposure to SHS support the need for education measures and legislation that regulate smoking in motor vehicles when passengers, especially children, are present. 

**Effectiveness of multicomponent programs with community mobilization for reducing alcohol-impaired driving.**

Shults RA; Elder RW; Nichols JL; Sleet DA; Compton R; Chattopadhyay SK. *American Journal of Preventive Medicine* 37(4): 360-371, 2009. (46 refs.)

A systematic review was conducted to determine the effectiveness and economic efficiency of multicomponent programs with community mobilization for reducing alcohol-impaired driving. The review was conducted for the Guide to Community Preventive Services (Community Guide). Six studies of programs qualified for the review. Programs addressed a wide range of alcohol-related concerns in addition to alcohol-impaired driving. The programs used various crash-related outcomes to measure their effectiveness. Two studies examined fatal crashes and reported declines of 9% and 42%; one study examined injury crashes and reported a decline of 10%; another study examined crashes among young drivers aged 16-20 years and reported a decline of 45%; and one study examined single-vehicle late-night and weekend crashes among young male drivers and reported no change. The sixth study examined injury crashes among underage drivers and reported small net reductions. Because the actual numbers of crashes were not reported, percentage change could not be calculated. According to Community Guide rules of evidence, the studies reviewed here provided strong evidence that carefully planned, well-executed multicomponent programs, when implemented in conjunction with community mobilization efforts, are effective in reducing alcohol-related crashes. Three studies reported economic evidence that suggests that such programs produce cost savings. The multicomponent programs generally included a combination of efforts to limit access to alcohol (particularly among youth), responsible beverage service training, sobriety checkpoints or other well-defined enforcement efforts, public education, and media advocacy designed to gain the support of both policymakers and the general public for reducing alcohol-impaired driving. 