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Číslo 2

Robert B. Voas, Tara Kelley-Baker, Eduardo Romano, Radha Vishnuvajjala. *Implied-consent laws : a review of the literature and examination of current problems and related statutes*. S. 77–83.

Abstract: Problem: A substantial proportion of drivers arrested for DUI refuse the BAC test, thereby reducing the likelihood that they will be convicted and potentially increasing the number of high-risk multiple offenders contributing to alcohol-related crashes. **Method:** This paper reviews the information on the current status of implied-consent laws (which impose a sanction on offenders who refuse the BAC test) in the 50 states and the other relevant traffic safety laws and policies that may influence state refusal rates. **Results:** Although there appears to be only a weak relationship between state refusal rates and crash rates, there is strong evidence that BAC test refusals significantly compromise the arrest, prosecution, and sentencing of DUI suspects and the overall enforcement of DUI laws in the United States. **Discussion:** Laws and policies that may reduce the number of refusals are discussed. **Impact on industry:** Alcohol-related crash injuries are an important cost problem for U.S. industry because of property damage from crashes, crash injuries to employees that raise health costs, or the reduction of time on the job resulting from a highway injury.

- Keywords: Implied consent; BAC refusal; Breath test refusal; Impaired driving; DWI enforcement

Karen Page. *Blood on the coal : the effect of organizational size and differentiation on coal mine accidents*. S. 85–95.

Abstract: Introduction: Each year, there are at least 100,000,000 occupational accidents and 100,000 occupational deaths in the world. In the United States, one of the safest countries in the world in which to work, there were more than 5,400 workplace fatalities and 5.9 million workplace injuries in 2007. The cost to American industry and taxpayers is estimated to be at least $170 billion per year. Further, as illustrated by accidents such as Three Mile Island and Bhopal, industrial accidents potentially impact a much wider sphere than that of the injured worker and his or her employer. As the repercussions of organizational accidents reverberate through organizations and are felt from human resources to accounting, firms are beginning to incorporate messages of safety in their missions and strategies. As firms organize to achieve safer work environments, they are faced with decisions on how to structure their activities in terms of, among other things, size and differentiation. **Method:** This paper explores the impact on accident rates of size and differentiation at the corporate and mine levels of mining

companies in an effort to create a framework for thinking about organizational accidents from a structural perspective. **Results:** The results suggest that larger mines are safer than smaller mines, and that mines with less task diversity are safer than mines with greater task diversity. The results also suggest that at the corporate level, task diversity decreases mine accidents. These results may help mining executives and engineers structure their corporate activities and individual mines more effectively to help reduce accidents.

- **Keywords:** Organizational structure; Organizational size; Organizational complexity; Mine accidents; Mine safety

Kathleen F. Carlson, Susan G. Gerberich, Bruce H. Alexander, Ann S. Masten, Timothy R. Church, John M. Shutske, Andrew D. Ryan, Colleen M. Renier. *Children's behavioral traits and risk of injury : analyses from a case-control study of agricultural households*. S. 97–103.

Abstract: Problem: Children on family agricultural operations have high risk of injury. The association between children's behavioral traits and their risk of injury is not well understood. **Method:** Data from the Regional Rural Injury Study-II were used to assess behavioral risk factors for injury to children ages six to < 20 years. A total of 379 injury events (cases) and 1,562 randomly selected controls were identified. Adjusted odds ratios (OR) and 95% confidence intervals (CI), calculated using logistic regression, were used to estimate injury risk in reference to behavioral traits. **Results:** Injury risks were greater for children with high levels of depressive symptoms (OR = 1.9, CI = 1.0-3.7) and aggression (OR = 1.6, CI = 0.9-2.7), and low levels of careful/cautious behavior (OR = 1.8, CI = 1.1-2.9). Children with low levels of self-regulation had reduced risks (OR = 0.4, CI = 0.2-0.8). **Discussion:** Results suggest that children's behaviors affect their risk of agricultural injury. Additional research could elucidate mechanisms and inform interventions. **Impact on industry:** The development of multifaceted, sustainable approaches for prevention is necessary for this unique population. These findings suggest a need for interventions that incorporate specific behavior-related risk factors in the context of family farms and ranches.

- **Keywords:** Agricultural injury; Injury; Youth; Behavior; Farm safety

Nicol Korner-Bitensky, Ailene Kua, Claudia von Zweck, Kathy Van Benthem. *Older driver retraining : an updated systematic review of evidence of effectiveness*. S. 105–111.

Abstract: Problem and Objective: The number of older drivers who might benefit from driver retraining is growing. A previous review on the effectiveness of older driver retraining included intervention studies up to 2004. The objective was to perform an updated systematic review of the effectiveness of older driver retraining for improving driving-related skills and reducing crash rates. **Method:** Articles published from 2004-2008 were grouped according to the intervention provided and outcome studied. Randomized clinical trials (RCTs) were appraised using the Physiotherapy Evidence Database (PEDro) Scale and scored for quality according to their internal validity. Each intervention's effectiveness was then rated and assigned a level of evidence by combining pre- and post- 2004 findings. **Results:** Three RCTs and one matched-pairs cohort design met the inclusion criteria. There is strong evidence (Level 1a) that education combined with on-road training improves driving performance and moderate evidence (Level 1b) that it improves knowledge. There is moderate evidence (Level 1b) that physical retraining improves driving performance. There is moderate evidence (Level 1b) that an educational intervention curriculum alone is not effective in reducing crashes. **Summary:** The updated evidence on the effectiveness of retraining aimed at older drivers is sufficiently encouraging to merit assertive health promotion actions regarding

intervention and program planning. **Impact on Industry:** These positive findings warrant a comprehensive plan that has both behavioral and monetary incentives encouraging older driver participation in programs aimed at driver safety.

- **Keywords:** Review literature; Older driver; Driver education; Driving; Abilities

J. Freeman, B. Watson. *Drink driving deterrents and self-reported offending behaviours among a sample of Queensland motorists*. S. 113–120.

Abstract: Problem: The efficacy of drink driving (driving under the influence, DUI) countermeasures to deter motorists from driving over the legal limit is extremely important when considering the personal and economic impact the offending behavior has on the community. This paper reports on an examination of 780 Queensland motorists' perceptions of legal and non-legal sanctions and their deterrent impact on self-reported offending behavior. *Method:* The data were collected via a telephone survey of motorists recruited from a random sample of all listed telephone numbers in the state, adjusted according to district population figures. *Results:* The results indicated that there were a range of legal and non-legal factors that were significantly associated with self-reported DUI including: the perceived risk of apprehension and license loss (legal factors); and concerns relating to the possibility of being involved in a crash and hurting another person (non-legal factors). However, additional multivariate analyses indicated that while both legal and non-legal factors significantly predicted self-reported DUI, higher alcohol consumption levels and more favorable attitudes to the behavior also appear to increase the likelihood of DUI. *Discussion:* The paper will outline the direct implications of the research project such as the development and promotion of countermeasures that both effectively deter motorists and address pro-offending attitudes. *Impact on industry:* The findings also highlight that DUI remains a relatively common behaviour among some motoring groups and that there is a need to extend current levels of enforcement as well as adopt innovative strategies to enhance the impact of these operations on the offending behaviour.

- **Keywords:** Drink Driving; Random Breath Testing; Deterrence; Legal Sanctions; Non-legal Sanctions

Brendan T. Campbell, Kevin Borrup, John M. Corsi, Kristine M. Kelliher, Hassan Saleheen, Leonard Banco, Garry Lapidus. *Pediatrician attitudes, knowledge, and practice behavior regarding teen driving safety*. S. 121–124.

Abstract: Problem: Each year about 4,000 teens ages 16-19 die on U.S. roads. Injury prevention counseling is recommended as a valuable and cost-effective part of routine health supervision. This study describes pediatrician knowledge and practice regarding teen driving safety. **Methods:** A 31-item self-administered survey was mailed to pediatricians. **Results:** 160 of 392 pediatricians (41%) completed the survey. During a health supervision visit 93% of pediatricians reported discussing seat belt use, 89% impaired driving, 54% teen licensing laws, and 16% parent teen contract. Half reported having a teen in their practice killed in a crash. **Conclusions:** A majority surveyed report discussing and counseling teens on first wave teen driver safety issues (seat belts, alcohol use), but most do not discuss graduated driver licensing laws or related issues. Impact on Industry: Broadly adopted, this inexpensive counseling approach, could lead to reductions in teen motorvehicle crash injuries.

- **Keywords:** Adolescent health; Injury control

Päivi Hämäläinen, Kaija Leena Saarela, Jukka Takala. *Global trend according to estimated number of occupational accidents and fatal work-related diseases at region and country level*. S. 125–139.

Abstract: Background: Although occupational accidents and work-related diseases have been of interest for a long time, due to lack of proper recording and notification systems the official numbers of occupational accidents and work-related diseases are missing for many countries. Presently, the demand for effectiveness and an interest in the economic aspects of accidents have increased prevention activities at company and country levels. **Methods:** Occupational accident data of selected countries and of World Health Organization regional divisions together with the global burden of disease were used in estimating global occupational accidents and fatal work-related diseases. The trend of global occupational accidents and work-related diseases is presented at region and country levels. The years 1998, 2001, and 2003 are compared in the case of occupational accidents and the years 2000 and 2002 in the case of work-related diseases. **Results:** The total number of occupational accidents and fatal work-related diseases has increased, but the fatality rates per 100,000 workers have decreased. There were almost 360,000 fatal occupational accidents in 2003 and almost 2 million fatal work-related diseases in 2002. Every day more than 960,000 workers get hurt because of accidents. Each day 5,330 people die because of work-related diseases. **Conclusions:** Information on occupational accidents and work-related diseases is needed so that countries may understand better the importance of occupational health and safety at country and company level. Especially companies in developing countries are not familiar with occupational safety and health. Statistical data is essential for accident prevention; it is a starting point for the safety work.

- **Keywords:** Occupational accidents; Work-related diseases; Global trend

Stijn Daniels, Tom Brijs, Erik Nuyts, Geert Wets.. S. 141–148. *Injury crashes with bicyclists at roundabouts : influence of some location characteristics and the design of cycle facilities*

Abstract: Problem: Previous research indicated that conversions of intersections into roundabouts appear to increase the number of injury crashes with bicyclists. However, it was assumed that the effectiveness of roundabouts could vary according to some differences in design types of cycle, facilities and other geometrical factors. **Method:** Regression analyses on effectiveness-indices resulting from a before-and-after study of injury crashes with bicyclists at 90 roundabouts in Flanders, Belgium. **Results:** Regarding all injury crashes with bicyclists, roundabouts with cycle lanes appear to perform significantly worse compared to three other design types (mixed traffic, separate cycle paths, and grade-separated cycle paths). Nevertheless, an increase of the severest crashes was noticed, regardless of the design type of the cycle facilities. Roundabouts that are replacing signal-controlled intersections seem to have had a worse evolution compared to roundabouts on other types of intersections. **Impact on industry:** The results might affect design guidelines for roundabouts, particularly for the accommodation of bicyclists.

- **Keywords:** Roundabout; bicyclist; safety; design; crash

Uwe Stolz, Lara B. McKenzie, Tracy J. Mehan, Gary A. Smith. *Assessing public opinion regarding potential ATV-related policies*. S. 149–155.

Abstract: Problem: States with laws regarding ATV use and safety have lower mortality and injury rates than states with few or no restrictions. Our objective was to assess the attitudes of registered Ohio voters concerning potential legislation regarding ATV use and safety to determine the feasibility of its enactment. **Method:** A statewide telephone

survey of 838 registered Ohio voters was conducted and results were weighted by region to accurately represent all Ohio voters. **Results:** Registered voters were in favor of restricting the use of ATVs by children < 16 years (81%), prohibiting passengers on ATVs (81%), requiring helmets (78%), and requiring all ATV owners and users to take a safety class (77%). ATV riders indicated that a mandatory helmet law would increase helmet use. **Impact on Industry:** Assessing public opinion regarding public health and safety laws is a critical first step when considering legislation to improve ATV safety.

- **Keywords:** All-Terrain Vehicle; Ohio; Voters; Policy; Public opinion; Motorized recreational vehicle

Yoko Ishigami, Raymond M. Klein. *Is a hands-free phone safer than a handheld phone?* S. 157–164.

Abstract: Introduction: Although it is becoming more and more accepted that driving while talking on a cell phone can be hazardous, most jurisdictions are making handheld phone use illegal while allowing hands-free phone use. **Methods:** The scientific literature exploring the effects of these two types of cell phone use on driving and driving-related performance is reviewed here. **Results:** Our review shows that talking on the phone, regardless of phone type, has negative impacts on performance especially in detecting and identifying events. Performance while using a hands-free phone was rarely found to be better than when using a handheld phone. Some studies found that drivers compensate for the deleterious effects of cell phone use when using a handheld phone but neglect to do so when using a hands-free phone. **Impact on Industry:** Current research does not support the decision to allow hands-free phone use while driving.

Melvin L. Myers, Henry P. Cole, Susan C. Westneat. *Injury severity related to overturn characteristics of tractors.* S. 165–170.

Abstract: Introduction: Early studies of injuries associated with overturns indicate that more fatalities occurred when a tractor overturned beyond 90° (continuous roll) relative to the impact plane. Recently, the principle of preventing continuous rolls has re-emerged for the protection of riding lawnmower operators. **Method:** Related to tractors, a population-based study was conducted that compared the severity of fatal and nonfatal injuries between a 90° and continuous roll for tractors equipped with rollover protective structures (ROPS) and not equipped with a ROPS (non- ROPS). In 2002, the Kentucky Farm Tractor Overturn Survey was administered to an 8% random sample (6,063) of Kentucky farm operators. The farmers responded to questions that differentiated between the types of overturns and operator injury outcomes for ROPS-equipped and non-ROPS tractors during overturn events. Overturn characteristics were collected that included 90° to the side, beyond 90° to the side, and to the rear for both ROPS-equipped and non-ROPS tractors. **Results:** Of the 541 overturns reported in this study, 535 (99%) of the respondents reported the most recent overturn characteristics of the tractor: 92 (17%) were ROPS-equipped and 443 (83%) were non-ROPS. For side overturns, 67% of the rolls occurred with ROPS-equipped tractors, and 54% occurred with non-ROPS tractors. The percentages of deaths related to rolls to the side for ROPS-equipped and non-ROPS tractors were, respectively, 1.6% and 3.7%. There was one (2%) deaths related to 90° rolls for ROPS-equipped tractors, whereas for continuous rolls there were 6.4% fatalities related to side overturns, 13% resulted in non-fatal injuries with an average of 1 day of hospitalization for ROPS-equipped tractors, and 39% resulted in non-fatal injuries with an average of 18 days of hospitalization for non-ROPS tractors. The results from this study indicated that a ROPS was more effective at stopping an overturn at 90° than no ROPS, with an associated reduction in the severity of injury in the event of a tractor overturn.

- **Keywords:** tractor; overturn; rollover; rollover protective structures; ROPS; injuries; fatalities; seatbelts