

Summary of Studies on CAP Laws

Courtesy of New England Coalition to Prevent Gun Violence
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Effectiveness of CAP laws

Association Between Youth-Focused Firearm Laws and Youth Suicides, *Journal of the American Medical Association*, 2004, D. Webster, J. Vernick, A. Zeoli, J. Mangenello

- Study design: Negative binomial regression models were used to estimate the association between state and federal youth-focused firearm laws mandating a minimum age for the purchase or possession of handguns and state child access prevention (CAP) laws requiring safe storage of firearms on suicide rates among youth.
- Results: State CAP laws were associated with an 8.3% decrease in suicide rates among 14- to 17-year-olds. This association was also statistically significant for firearm suicides but not for non-firearm suicides. CAP laws were also associated with a significant reduction in suicides among youth aged 18 through 20 years.

The Effect of Child Access Prevention Laws on Non-Fatal Gun Injuries, *National Bureau of Economic Research*, 2005, J. DeSimone, S. Markowitz

- Study design: Uses annual hospital discharge data from 1988-2001 to evaluate the effects of state CAP laws on non-fatal gun injuries among both children and adults. These data are the most complete source of non-fatal gun injury information available. Main sample consists of hospitals in 11 states. Seven of these states implemented CAP laws during the sample period. Analysis compares changes in gun injury between periods before and after CAP laws too effect with contemporaneous injury count changes in the four sample states with no CAP law.
- Results: Results indicate that CAP laws substantially reduce non-fatal gun injuries among both children and adults. This is supported by the absence of effects on self-inflicted gun injuries among adults and non-gun self-inflicted injuries. It is estimated that the average medical cost for a hospitalized gunshot survivor is \$35,367 (in 1994 dollars). Results imply that CAP laws prevented 829 gun injuries during 2001 in the sample states, which translates to \$37,371,154 in medical costs saved.

The Effect of Child Access Prevention Laws on Unintentional Child Firearm Fatalities, 1979-2000, *The Journal of Trauma*, 2006, L. Hepburn, D. Azrael, M. Miller, D. Hemenway

- Study Design: Cross-sectional time-series data for 50 states and negative binomial regression methods were used to estimate the effect of CAP laws on unintentional firearm deaths among children.
- Results: Unintentional firearm deaths are declining in the United States, with the rate for children under age 15 declining faster than adults. Most states that enacted CAP laws experienced greater subsequent declines in the rate of unintentional firearm deaths for children age 0 to 14 compared with states not enacting the laws. States that allowed felony prosecution of offenders experienced a greater effect of CAP laws than states that did not.

Reexamining the Association Between Child Access Prevention Gun Laws and Unintentional Shooting Death of Children, *Pediatrics*, 2000, D. Webster, M. Starnes

- **Study design:** To reassess the effects of CAP laws and more fully examine the consistency of the estimated law effects across states. A pooled time-series study of unintentional firearm mortality among children from 1979 through 1997.
- **Results:** When the effects of all 15 state CAP laws enacted before 1998 were aggregated, the laws were associated with a 17% decline unintentional firearm death rates among children. The laws' effects were not equal across states. In the 3 states in which a CAP law violation can be prosecuted as a felony (Florida, Connecticut, and California), there was a 31% decrease associated with the law.

State Gun Safe Storage Laws and Child Mortality Due to Firearms, *Journal of the American Medical Association*, 1997, P. Cummings, D. Grossman, F. Rivara, R. Koepsell

- **Study design:** An ecological study of firearm mortality from 1979 through 1994. All 50 states and the District of Columbia. All children younger than 15 years.
- **Results:** Laws that make gun owners responsible for storing firearms in a manner that makes them inaccessible to children were in effect for at least 1 year in 12 states from 1990 through 1994. Among children younger than 15 years, unintentional shooting deaths were reduced by 23% during the years covered by these laws. This estimate was based on within-state comparisons adjusted for national trends in unintentional firearm-related mortality. State safe storage laws intended to make firearms less accessible to children appear to prevent unintentional shooting deaths among children younger than 15 years.

Compliance with CAP laws

Child access prevention laws: Correlates of knowledge and association with firearm

storage, *Public Health and Human Rights Annual Exposition*, 2006, L. Hepburn, D. Azrael, M. Miller, D. Hemenway

- **Study Design:** Nationally representative telephone survey of adults in the U.S. to address questions regarding firearm ownership and use. Cross-tabulations and multivariate logistic regression models were used to investigate correlates of knowledge about CAP laws and the relationship between CAP law knowledge and firearm storage practices.
- **Results:** In gun-owning households with children, living in a CAP law state was associated with a lower likelihood of storing firearms in an unsafe manner. Households without children demonstrated no statistically significant association between unsafe firearm storage and living in a CAP law state. The majority of adults living in CAP law states are aware that these laws exist. Living in a CAP law state is associated with a lower likelihood of unsafe firearm storage only if there are children present in the home. These are the households that are directly affected by the laws.

Benefits of Safe Gun Storage Practices

Gun Storage Practices and Risk of Youth Suicide and Unintentional Firearm Injuries, *Journal of the American Medical Association*, 2005, D. Grossman, B. Mueller, C. Riedy, M. Dowd, et al

- **Study design:** To measure the association of specific household firearm storage practices (locking guns, locking ammunition, keeping guns unloaded) and the risk of unintentional and self-inflicted firearm injuries. Case-control study of firearms in events identified in thirty-seven counties and five trauma centers in Washington, Oregon, and Missouri.
- **Results:** Storing household guns as locked, unloaded, or separate from the ammunition is associated with significant reductions in the risk of unintentional and self-inflicted firearm injuries and deaths among adolescents and children. Programs and policies designed to reduce accessibility of guns to youth, by keeping household guns locked and unloaded, deserve further attention as an avenue toward the prevention of firearm injuries in this population.

Safe Firearm Storage Practices: What's the Evidence That They Can Prevent Adolescent Suicide?, *Harvard Injury Control Research Center*, 2006, R. Johnson, M. Vriniotis, D. Hemenway

- **Study design:** Review of the literature in an attempt to summarize firearm injury research. Because about a third of U.S. homes with children have guns, it is important to determine the protective value of encouraging those parents who have firearms to keep them stored unloaded and in a locked place.
- **Results:** The best evidence indicates that suicidal individuals generally do not have a long-term, sustained will to die. Therefore, restricting access to firearms, a highly lethal means of suicide, is an important preventive strategy. Reducing access to household firearms through safe storage of firearms essentially forces attempters to “work harder” to attempt suicide, or makes it impossible for them to use a particular weapon. There is growing evidence that safe storage practices are associated with a reduced risk of suicide. The growing evidence that safe storage can prevent adolescent suicide sets an important basis for continued efforts to encourage parents to keep firearms stored safely. In addition, safe storage practices may also prevent unintentional firearm injuries.

Education Alone is Not Enough

Firearm Training and Storage, *Journal of the American Medical Association*, 1995, D. Hemenway, S. Solnick, D. Azrael

- **Study design:** To determine the extent of firearm training among gun owners, how gun owners store their weapons, and the relationship between gun training and gun storage using a random telephone survey of gun owners. Logistic regression analyses were conducted to examine factors associated with firearm training and gun storage practices.
- **Results:** Unfortunately, the results indicate not only that many individuals keep their guns loaded and unlocked, but also that training is associated with a higher incidence of this type of potentially dangerous practice – regardless of whether the gun is owned for protection. The study suggests that complete reliance on the training strategy may be misplaced.

Rural population survey of behavioral and demographic risk factors for loaded firearms, *Injury Prevention*, 2001, D. Nordstrom, C. Zwerling, A. Stromquist

- Study design: Examines firearm prevalence and storage practices in three different types of rural households. Statistical test of independence used to assess association between loaded, unlocked firearms and seven behavioral and demographic risk factors.
- Results: Households with someone with a lifetime prevalence of alcohol abuse of dependence were about twice as likely as other households to report having loaded, unlocked firearms. Having taken a gun safety course was associated with more than double prevalence of a loaded, unlocked gun.

Teaching firearm safety to children: Failure of a program, *Journal of Deviant Behavior Pediatrics*, 2002, M. Hardy

Reducing violent injuries: Priorities for pediatrician advocacy, *Pediatrics*, 1994, J. Dolins, K. Christoffel

Seeing is believing: What do boys do when they find a real gun? *Pediatrics*, 2001, G. Jackman, M. Farah, A. Kellermann, H. Simon

An Evaluation of Two Procedures for Training Skills to Prevent Gun Play in Children, *Pediatrics*, 2004, M. Himle, R. Miltenberger

- These studies find that these educational programs do a good job of teaching children the talking points (don't touch, tell an adult) but they aren't effective in actually preventing children from picking up a gun when observed in these situations. And, these programs put the responsibility for gun safety onto children, which is not where it belongs. The responsibility is with the adults. If you choose to own a gun you must be responsible for it. Period.

Other Articles of Interest

Are Household Firearms Stored Less Safely in Homes With Adolescents? *Archives of Pediatrics and Adolescent Medicine*, 2006, R. Johnson, M. Miller, M. Vrinoties, D. Azrael, D. Hemenway

- Study design: To examine whether firearms are more frequently stored loaded, unlocked, or both in households with adolescents only (ages 13-17 years) compared with household with younger children. Random-digit-dial survey on firearms.
- Results: Parents of adolescents appear to be more likely to keep household firearms stored unsafely, especially with regard to keeping firearms unlocked. This is of concern because most youth firearm injuries happen to adolescents. Firearm injury prevention programs should directly target parents of adolescents to promote safe firearm storage.

Parental Misperceptions About Children and Firearms, *Archives of Pediatrics and Adolescent Medicine*, 2006, F. Baxley, M. Miller

- Study design: To assess the accuracy of parental predictions about their children's self-reported behavior around household guns. Survey conducted in family practice clinic in rural Alabama with questionnaires about firearms administered separately to children and their parents.

- **Results:** Children younger than 10 years were as likely as older children to report knowing the storage location of household guns and to report having handled a household gun. 39% of the parents who reported that their children did not know the storage location of household guns were contradicted by their children's reports. 22% of parents who reported that their children had never handled a household gun were contradicted by their children's reports. Such discordance between parent and child reports was unrelated to whether parents stored their firearms locked away or had ever discussed firearm safety with their children.

Prevalence of Household Firearms and Firearm-Storage Practices in the 50 States and the District of Columbia, *Pediatrics*, 2005, C. Okoro, D. Nelson, J. Mercy, et al

- **Study design:** To examine the prevalence of household firearms and firearm-storage practices and estimate the number of children exposed to unsafe storage practices. Analyzed data from the 2002 cross-sectional Behavioral Risk Factor Surveillance System survey of adults from randomly selected households.
- **Results:** Findings indicate that 1.69 million children and youth in the United States under 18 years old are living with loaded and unlocked household firearms.

Suicide Prevention Strategies, *Journal of the American Medical Association*, 2005, J. Mann, A. Apter, J. Bertolote, et al

- **Study design:** Extensive review of relevant publications published between 1966 and 2005, included those that evaluated preventative interventions in major domains; education and awareness for the general public and for professionals; screening tools for at-risk individuals; treatment of psychiatric disorders; restricting access to lethal means; and responsible media reporting of suicide. Over 5000 articles identified and studied to examine evidence for the effectiveness of specific suicide-preventive interventions.
- **Results:** The study found two things that were proven to prevent suicide: "Education of physicians and restricting access to lethal means were found to prevent suicide." And "Suicide attempts using highly lethal means, such as firearms in US men, result in higher rates of death. Suicides by such methods have decreased after firearm control legislation."