Recent psychopathology, suicidal thoughts and suicide attempts in households with and without firearms: findings from the National Comorbidity Study Replication

M Miller, C Barber, D Azrael, D Hemenway, B E Molnar

ABSTRACT

Objective: To assess the relationship between firearm ownership and possible psychiatric confounders of the firearm–suicide relationship.

Methods: Multivariate logistic regression was used to estimate the association between living in a home with firearms and 12-month occurrence of major Diagnostic and statistical manual of mental disorders (DSM)-IV disorders and suicidal behavior among respondents to the National Comorbidity Survey Replication, a household survey of 9282 adults aged 18+. Analyses controlled for sociodemographic characteristics including age, sex, race/ethnicity, educational attainment and poverty.

Results: Approximately one in three Americans reported living in a home with firearms. People living in a home with firearms were no more or less likely than people in homes without firearms to have recent (past year) anxiety disorders (OR = 1.0, 95% CI 0.8 to 1.2), mood disorders (OR = 0.9, 95% CI 0.7 to 1.1) or substance dependence and/or abuse (OR = 0.9, 95% CI 0.6 to 1.3). Past year suicidal ideation (OR = 0.8, 95% CI 0.5 to 1.3) and suicide planning (OR = 0.5, 95% CI 0.2 to 1.4) were also not associated with living in households with firearms. Having made a suicide attempt over the previous year was the only outcome more common among participants reporting that they currently lived in a home with firearms.

Conclusions: The previously reported association between household firearm ownership and heightened risk of suicide is not explained by a higher risk of psychopathology among gun-owning families. As there are Americans with suicidal ideation and/or significant and recent psychiatric disorders currently living in homes with firearms, future work should focus on understanding the impediments to effectively communicating the suicide risk associated with household firearms.

Case–control studies have consistently found the presence of a firearm in the home to be a strong risk factor for suicide,11–12 not only for the gun owner but for all members of the household.13 14 Despite careful execution, the validity of the firearm–suicide association reported in these studies has been questioned, most prominently by the National Research Council, on the grounds that recall and ascertainment bias may have obscured potentially important differences in underlying suicide risk between members of households with or without firearms.15

Two nationally representative studies have used individual level information about household firearm ownership and mental illness to examine whether people living in homes with guns have rates of psychiatric distress that are different from those of people living in homes without guns.16 17 The first study17 used the General Social Survey (GSS) to identify all mental health-related questions that have been asked on GSS surveys since 1990 and grouped them into four constructs: general emotional and mental health, mental health help-seeking, functional mental health, and sadness and depression. In addition, the authors used seven items to create a modified version of the Center for Epidemiologic Studies–Depression scale to measure depression among respondents. In this meticulous study, no measure of mental health was related to gun ownership or living in a household with a firearm. The authors note that the mental health measures in their study were limited to a few questions, and that research using more sophisticated survey measures or clinical interviews is needed to extend the specificity and validity of their findings.

The second study16 used a vetted mental health assessment instrument employed by the National Comorbidity Survey Replication (NCS-R) to assess whether lifetime psychiatric illness was related to gun availability in sex-adjusted models. In addition, the study assessed, for the first time, whether firearm owners and people living in homes with guns were more likely to have had a lifetime history of suicidal thoughts, plans and attempts. People currently living in homes with firearms were found to be no more or less likely to report lifetime psychiatric disorders than those living in homes without guns. People with a history of suicide attempts (but not suicidal ideation or plans) were less likely to live in a home with firearms.

This is the first nationally representative study of whether people with recent or current symptoms that meet strict Diagnostic and statistical manual of mental disorders (DSM)-IV criteria for psychiatric disorder, suicidal thoughts or suicide attempts tend disproportionately to live in homes with guns. We extend the thoughtful work of Sorenson and Vittes17 that found no difference in the incidence of people in homes with guns (compared with those in homes without guns) seeking medical attention for emotional problems by examining the relationship between gun ownership and having been hospitalised for a psychiatric disorder. Like Iglen et al.,17 we used data from the NCS-R and controlled for sex. Our models also...
control for additional potential confounders beyond sex, including age, race, education, poverty/income ratio, region of country and urbanicity.

METHODS

The NCS-R is a nationally representative survey of 9282 respondents aged 18+ carried out between February 2001 and April 2003. Respondents were selected from a stratified, multistage area probability sample of US households in the 48 contiguous US states. Interviews were conducted by professional survey interviewers and were administered in two parts. Part I included the core diagnostic interview and core correlates and was administered to all respondents. Part II included additional disorders and risk factors and was administered to a probability subsample of 5554 respondents including (i) all respondents with any lifetime DSM-III-R disorder assessed in respondents aged 18+

Respondents refused to answer or stated that they did not know how to answer the firearms question.

Psychiatric disorders associated with suicide

Psychiatric disorders based on DSM-IV criteria were assessed with a modified version of the World Health Organization Composite International Diagnostic Interview. The survey included lifetime, 12-month and 30-day assessments of a range of psychiatric disorders. In this study, we focused on 12-month disorders in three categories, chosen because of their association with suicide in the psychiatric literature: (1) mood disorders (major depression, bipolar I and II), anxiety disorders (panic disorder, generalised anxiety disorder, post-traumatic stress disorder) and substance use disorders (alcohol or other drug abuse or dependence). In addition, a dichotomous category for firearm ownership (or “0” if they replied none). Three percent of respondents refused to answer or stated that they did not know how to answer the firearms question.

Suicide attempts

In the baseline NCS assessment, respondents were asked about three types of non-mutually exclusive suicide-related outcomes: lifetime experiences of suicidal ideation (“Have you ever seriously thought about committing suicide?”), suicide plans

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Prevalence of DSM-IV mental health disorders and suicidal behaviours within the past 12 months among people living in households with firearms versus living in households without firearms among respondents in the National Comorbidity Survey Replication (n = 5554)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatric disorders and suicidal behaviours in past 12 months</td>
<td>Men</td>
</tr>
<tr>
<td>Home with gun (%)</td>
<td>Home without gun (%)</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td></td>
</tr>
<tr>
<td>Panic disorder</td>
<td>1.2 (0.3)</td>
</tr>
<tr>
<td>Generalised anxiety disorder</td>
<td>2.7 (0.5)</td>
</tr>
<tr>
<td>Post-traumatic stress disorder</td>
<td>1.7 (0.4)</td>
</tr>
<tr>
<td>Any of the above anxiety disorders</td>
<td>4.5 (0.5)</td>
</tr>
<tr>
<td>Mood disorders</td>
<td></td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td>4.1 (0.5)</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>1.0 (0.2)</td>
</tr>
<tr>
<td>Any of the above mood disorders</td>
<td>5.2 (0.6)</td>
</tr>
<tr>
<td>Substance use disorders</td>
<td></td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>3.8 (0.7)</td>
</tr>
<tr>
<td>Alcohol dependence</td>
<td>1.3 (0.4)</td>
</tr>
<tr>
<td>Drug abuse</td>
<td>1.6 (0.3)</td>
</tr>
<tr>
<td>Drug dependence</td>
<td>0.4 (0.2)</td>
</tr>
<tr>
<td>Any of above substance use disorders</td>
<td>5.0 (0.7)</td>
</tr>
<tr>
<td>Any mood/anxiety/substance disorder</td>
<td>12.0 (1.0)</td>
</tr>
<tr>
<td>Suicidality</td>
<td></td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td>3.2 (0.8)</td>
</tr>
<tr>
<td>Suicidal plan</td>
<td>0.4 (0.3)</td>
</tr>
<tr>
<td>Serious suicidal attempt</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>Treatment-related characteristics</td>
<td></td>
</tr>
<tr>
<td>Saw professional for mental health problem</td>
<td>8.4 (1.0)</td>
</tr>
<tr>
<td>Hospitalised for psychiatric disorder</td>
<td>0.2 (0.1)</td>
</tr>
</tbody>
</table>

*Values in parentheses are standard errors estimated using the Taylor series linearisation method to account for the stratified, clustered sampling design; weights were applied to all prevalence estimates to adjust for differential probabilities of selection, non-response and differences between the sample and 2000 US census population estimates.

**Difference between firearm and non-firearm households within sex is significant at p<0.05 using the Rao–Scott χ² test of proportions.
administered surveys, these experiences were listed in a self-reporting potentially sensitive behaviours than interviewer-administered surveys have been shown to yield higher rates of ideators and/or planners if they endorsed these behaviours.

Gesturers and suicide attempters were characterised as requiring some suicidal intent and, on that basis, excludes suicides. Our variable for having made a suicide attempt that they believed that they might die were considered gesturers; those who indicated “intend to die” were considered gesturers; those who indicated that they expected to die in their attempts.

Suicide plans and suicide attempts had occurred within 12 months of the interview. Respondents were asked to behaviour, they were also asked whether suicidal ideation, suicidal ideation and making a suicide plan were also not associated with living in a household with firearms. By contrast, having made a suicide attempt in the past 12 months was less likely among people reporting that they currently lived in a household with firearms (of the 36 people who reported a suicide attempt in the year before the survey, none were currently living in a household with firearms). Sensitivity analyses that simultaneously controlled for the same sociodemographic variables and each of which differed from the other models in terms of the single key independent variable of interest. For example, the multivariate logistic regression model that estimated the association between major depression (the key independent variable of interest) and living in a household with firearms (the dependent variable) regressed the latter on the former while controlling for age, race, education, poverty/income ratio, region of country, childhood urbanicity and sex. Beta coefficients from these models were exponentiated to express the association between each key independent variable and living in a home with firearms as an odds ratio; 95% CIs were estimated using the Taylor series method.

### RESULTS

Firearms were present in 35% of households in our study. In bivariate analyses stratified by sex (table 1), psychiatric disorders and substance use disorders were, in general, no more common among respondents who lived in homes with firearms than among those who lived in homes without firearms. Anxiety disorders within 12 months of the interview (ie, panic disorder, generalised anxiety disorder or post-traumatic stress disorder) were present in ~5% of men and 11% of women, mood disorders (ie, major depression and/or bipolar disorder) in 6% of men and 10% of women, and alcohol or drug use and dependence disorders in 5% of men and 2% of women, regardless of whether they lived in homes with or without firearms.

In sex-stratified analyses (table 1), the only discrete psychiatric and substance use disorders that distinguished people living in homes with firearms from those in homes without were post-traumatic stress disorder among women and alcohol dependence among men. In both instances the prevalence of disorder was higher among those in households without firearms. The prevalence of suicide attempts among both men and women was higher in those living in households without firearms.

In multivariate analyses (table 2), none of the psychiatric or substance use disorders were significantly associated with living in a household with firearms (whether examined individually, grouped by disorder type, or considered as a whole). Suicidal ideation and making a suicide plan were also not associated with living in a household with firearms. By contrast, having made a suicide attempt in the past 12 months was less likely among people reporting that they currently lived in a household with firearms (of the 36 people who reported a suicide attempt in the year before the survey, none were currently living in a home with firearms). Sensitivity analyses that simultaneously included variables for any mood disorder, any anxiety disorder and any substance use disorder (along with our usual sociodemographic controls) did not find a significant independent

### Table 2: Multivariate logistic regression models of the association between living in a household with a firearm and psychiatric disorders and suicidal behaviours among respondents of the National Comorbidity Survey Replication (n = 5554)

<table>
<thead>
<tr>
<th>Psychiatric disorders and suicidal behaviours in past 12 months</th>
<th>Home with firearms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety disorders</td>
<td></td>
</tr>
<tr>
<td>Panic disorder</td>
<td>1.1 (0.7 to 1.7)</td>
</tr>
<tr>
<td>Generalised anxiety disorder</td>
<td>1.0 (0.8 to 1.2)</td>
</tr>
<tr>
<td>Post-traumatic stress disorder</td>
<td>0.9 (0.6 to 1.2)</td>
</tr>
<tr>
<td>Any of the above anxiety disorders</td>
<td>1.0 (0.8 to 1.2)</td>
</tr>
<tr>
<td>Mood disorders</td>
<td></td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td>0.9 (0.7 to 1.2)</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>0.7 (0.5 to 1.1)</td>
</tr>
<tr>
<td>Any of the above mood disorders</td>
<td>0.9 (0.7 to 1.1)</td>
</tr>
<tr>
<td>Substance use disorders</td>
<td></td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>0.9 (0.6 to 1.3)</td>
</tr>
<tr>
<td>Alcohol dependence</td>
<td>0.5 (0.3 to 1.0)</td>
</tr>
<tr>
<td>Drug abuse</td>
<td>0.8 (0.5 to 1.5)</td>
</tr>
<tr>
<td>Drug dependence</td>
<td>0.9 (0.3 to 2.7)</td>
</tr>
<tr>
<td>Any of above substance use disorders</td>
<td>0.9 (0.6 to 1.3)</td>
</tr>
<tr>
<td>Any mood/anxiety/substance disorder</td>
<td>0.9 (0.8 to 1.2)</td>
</tr>
<tr>
<td>Suicidality</td>
<td></td>
</tr>
<tr>
<td>Suicidal ideation</td>
<td>0.8 (0.5 to 1.3)</td>
</tr>
<tr>
<td>Suicidal plan</td>
<td>0.5 (0.2 to 1.4)</td>
</tr>
<tr>
<td>Serious suicidal attempt</td>
<td>0.0?</td>
</tr>
<tr>
<td>Treatment-related characteristics</td>
<td></td>
</tr>
<tr>
<td>Saw professional for mental health</td>
<td>0.8 (0.7 to 1.1)</td>
</tr>
<tr>
<td>Hospitalised for psychiatric disorder</td>
<td>0.4 (0.2 to 0.9)*</td>
</tr>
</tbody>
</table>

Values are odds ratio (95% CI). Each model includes the following covariates: age, race, education, poverty/income ratio, region of country, childhood urbanicity, and sex. The Taylor series estimation method was used to estimate sampling errors, accounting for the stratified, clustered sampling design; weights were applied to all models to adjust for differential probabilities of selection, non-response and differences between the sample and 2000 US census population estimates.

*Significant difference at p < 0.05.

195% CI could not be estimated because of no serious suicide attempts in households with firearms.

(“Have you ever made a plan for committing suicide?”) and suicide attempts (“Have you ever attempted suicide?”). Because self-administered surveys have been shown to yield higher rates of reporting potentially sensitive behaviours than interviewer-administered surveys, these experiences were listed in a self-administered booklet and referred to by letter for respondents who were able to read (and read aloud if respondents could not read). If respondents answered affirmatively to lifetime suicidal behaviour, they were also asked whether suicidal ideation, suicide plans and suicide attempts had occurred within 12 months of the interview. Respondents were asked to characterise whether they expected to die in their attempts. Those who chose “My attempt was a cry for help, I did not intend to die” were considered gesturers; those who indicated that they believed that they might die were considered attempters. Our variable for having made a suicide attempt requires some suicidal intent and, on that basis, excludes gestures. Gesturers and suicide attempters were characterised as ideators and/or planners if they endorsed these behaviours.

### Other covariates

Sociodemographic covariates included age, sex, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, other), education (less than high school, high school graduate, some college, graduate degree), the ratio of their family income to the poverty line, region of the country where they lived (Midwest, Northeast, South and West) and whether they grew up in a rural, suburban or urban environment.

### Statistical analysis

Cross-tabulations were used to estimate bivariate associations. A series of multivariate logistic regression models (using the survey logistic procedure in SAS 9.1) were used, each of which controlled for the same sociodemographic variables and each of which differed from the other models in terms of the single key independent variable of interest. For example, the multivariate logistic regression model that estimated the association between major depression (the key independent variable of interest) and living in a household with firearms (the dependent variable) regressed the latter on the former while controlling for age, race, education, poverty/income ratio, region of country, childhood urbanicity and sex. Beta coefficients from these models were exponentiated to express the association between each key independent variable and living in a home with firearms as an odds ratio; 95% CIs were estimated using the Taylor series method.
association between any of these disorders and household firearm ownership status (not shown). In addition, there were no significant interactions between disorders of mood, anxiety and substance use. Results from analyses that counted suicide gestures as suicide attempts did not differ significantly from results presented in tables 1 and 2 (ie, where gestures were not counted as suicide attempts).

Respondents who reported currently living in a home with firearms were not significantly more or less likely to have seen a health professional for emotional problems in the year before the survey (OR = 0.8, 95% CI 0.7 to 1.1). Analyses restricted to respondents who reported at least one of our mood/anxiety or substance use disorders also failed to find a significant association between having seen a health professional for emotional problems within the past year and currently living in a home with firearms (not shown). Currently living in a home with firearms was associated with a significantly lower likelihood of having been hospitalised for a psychiatric disorder over the previous 12 months.

**DISCUSSION**

Living in a home with firearms was not associated with prevalent major mental illness or problematic drug and alcohol use among our respondents. This finding is consistent with previous ecological work that found no significant association between firearm prevalence and either suicidal thoughts or major depression,28 with the study of Ilgen et al29 which found no difference in the lifetime prevalence of specific mental illnesses among people living in homes with or without firearms, and with the study of Sorenson and Vitter30 which found that general measures of mental health failed to predict household firearm status. Our analyses extend previous work by accounting for several potential confounders not factored into previous studies and addresses the potential criticism that a null finding with respect to the observed association between firearms and lifetime mental illness may obscure a positive association between current mental illness and currently living in a home with guns.

We do not know why respondents in homes with guns were less likely to report having made a recent suicide attempt than those in homes without guns. One possible explanation is that potential respondents who were suicidal and who also lived in homes with firearms were more likely to have attempted suicide with firearms than were potential respondents who were suicidal and lived in homes without firearms, and, as a result of their method choice, less likely to have survived to become a respondent in our survey. This explanation, while theoretically plausible, is unlikely to account for the disparity we observe because the rate of firearm suicide (~6 per 100 000 annually) is very small relative to the potential pool of eligible subjects living in homes with firearms (~34 000/100 000 at the time of the survey). This mechanism is also unlikely to have an impact on the estimates of association we observed between living in a home with firearms and the presence of major psychopathology, as suicide is a rare event relative to the annual prevalence of these measures. Another possibility is that, when suicide risk escalates to the level of a suicide attempt, the person who had made the attempt (or a concerned family member) may remove firearms from the home hoping to reduce subsequent suicide risk. Prophylactic removal of firearms from the home may also explain our finding that people who had been hospitalised for a psychiatric disorder in the year before the survey were significantly less likely to report currently living in a home with firearms. It is also possible that people in homes with guns are less likely to make suicide attempts (or to be admitted to a psychiatric hospital), despite similar levels of psychopathology, for reasons related to unobserved variables such as stronger social networks. Lastly, personal presentation bias may have induced some respondents who reported having made a suicide attempt (or having been hospitalised for psychiatric illness) to falsely deny that they currently lived in a home with firearms.

“*Our finding that suicidal ideation over the past year was not associated with the presence of firearms in the home is consistent with findings from a survey of older adults visiting a primary care clinic.*30 In the National Longitudinal Study of Adolescent Health, however, some categories of adolescents who reported that they had “easy access to a household gun” were more likely to report having made a suicide attempt in the preceding 12-month period (the association was present in black and white girls, black and Hispanic boys, but not in Hispanic girls and white boys).30 It is not clear whether differences between our study and the adolescent health survey result from differences in the age of our respective cohorts or from methodological discrepancies between surveys (eg, we asked specifically about the presence of a gun in the respondent’s home, not about easy access to a household gun).

A secondary finding in our study is that living in a home with firearms was unrelated to the likelihood that a respondent sought professional help for emotional problems within the previous year. This finding may be due to the infrequency with which patients in our study who were suffering from a psychiatric disorder (but whose actions had not escalated to the threshold of a suicide attempt) received counselling in a medical setting to remove firearms from their homes, a possibility consistent with findings in previous work but to which our data do not speak.31 32

Several limitations of our study should be kept in mind. Firstly, the presence of each suicide-related characteristic was assessed using single items. Secondly, we were able to assess many, but not every, DSM-IV disorder associated with suicide. We did not, for example, have access to data about schizophrenia, another mental disorder known to be associated with suicide-related outcomes.33 Thirdly, although we examined a wide range of established psychiatric suicide risk factors, other unmeasured risk factors may have differed by household firearm ownership status. Fourthly, respondents were asked whether they currently lived in a home with firearms, but psychopathology and suicidal behaviour were coded as present if they met criteria at any time during the year before the survey, a temporal frame asymmetry that could have introduced misclassification bias. For two reasons we expect misclassification to be small: (1) rates of household firearm ownership change little over the course of a year,34 and (2) psychopathology, unlike an acute injury, is typically protracted and often recurrent. In addition, we ran sensitivity analyses using past 30-day (rather than past year) incidence of psychiatric disorders and psychiatric hospitalisation (30-day incidence of suicidality was not collected in the NCS-R). Multivariate results were unchanged compared with those presented using the 12-month time frame (ie, there were no significant associations between household firearm ownership and any of these 30-day measures).

Despite these limitations, our study suggests that the empirical association between household firearm ownership and heightened risk of suicide, consistently reported in previous case-control35 and ecological studies,30 36 is not explained by an inherently higher risk of psychopathology or substance abuse or dependence among gun-owning families. Our finding that
What is already known on this topic

- Suicide rates are higher among people who live in a household with firearms.
- The validity of the firearm–suicide association has been questioned on the grounds that members of gun-owning households may have greater underlying suicidal risk.
- Two previous nationally representative US studies examined whether people living in a home with guns have higher rates of emotional and mental disorder; both found no such association.

What this study adds

- This study extends previous work by examining whether Americans with recent or current DSM-IV psychiatric disorders, suicidal thoughts or suicide attempts tend disproportionately to live in homes with guns.
- This study extends previous work on specific DSM-IV psychiatric disorders in relation to firearm ownership by controlling for several additional potential confounders including age, race, education, poverty/income ratio, region of country and urbanicity.

approximately one in three people with recent suicidal ideation and/or disorders of mood, anxiety and substance use currently lives in a home with firearms suggests that future empirical work should focus on better understanding the impediments to communicating effectively the suicide risk associated with household firearms.

Acknowledgements: The time taken to conduct this research was supported by the Joyce Foundation.

Competing interests: None.

REFERENCES


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OBITUARY

Obituary: Gordon Trinca, Australian road trauma advocate

Gordon Trinca, whose visionary road safety crusade led to the introduction of pioneering legislation in Victoria that rippled across Australia and internationally, has died aged 88. Trinca was chairman of the Royal Australasian College of Surgeons’ influential road trauma committee from 1975 to 1998, and played a key role in gaining the support of politicians and decision-makers to implement measures to reduce the road toll. As a surgeon he was aware of the horror of road crashes from the late 1950s, but became more concerned in the 1960s and eventually got “fed up with stitching up” victims while there were no meaningful moves by government to reduce the carnage, so he started collecting statistics. Under his direction, surgeons were no longer “on call” at home, but at the hospital ready to make the all-important first assessment of a trauma case. Trinca himself set the example by spending long hours at the hospital at peak crash times. Later research was to show conclusively how important early treatment was for the better recovery of trauma victims.

Colleague Jim McGrath said in tribute: “Without doubt Gordon Trinca was the dominant force in the [College of Surgeon’s] road trauma work. His tremendous enthusiasm and drive inspired all of us.” As a direct result of campaigning by Trinca and a small group of like-minded concerned citizens, Victoria led the world with the introduction of compulsory seatbelt legislation in December 1970. Much more was to follow, with stricter seatbelt legislation, helmets for cyclists, blood alcohol tests, speed limits, improved vehicle design, safety equipment, road improvement, lowered blood alcohol levels for drivers and, vitally, education.

A question he posed almost 20 years ago continues to resonate, albeit with slightly different figures: “Can we afford the $6.5 billion, the 2% of GDP and the 10% of total hospital resources that traffic injury consumes each year in Australia?” He had prefaced the question by stating: “Our society can ill afford the loss of human life and productivity and the cost of resources required to repair the damage to body and machine.” Statistics show the achievement. From 1960 to 1994 road fatalities for Australia declined by 49%, with fatalities per 100 000 people falling from 30 in 1970 to 10.9 in 1994 (for Victoria it was 8.4 in 1994), this decline occurring despite increased population and increased numbers of motor vehicles. There was a similar diminution of serious injuries from road crashes.

Trinca became an internationally known figure respected for his work in road trauma. One outcome of this was a group of eight people in the field from different parts of the world who grouped together in 1965 to form the Global Traffic Safety Trust. Informally known as “Trinca’s Thinkers”, the group developed a project and wrote a book, Reducing Traffic Injury—A Global Challenge. Their work received the prestigious 1988 international Volvo Traffic Safety Prize, which led to the establishment of a trust. Trinca received many honours and awards, including a Medal in his name from the Royal College of Surgeons and an annual lecture of the Australasian Trauma Society.

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CALENDAR
doi: 10.1136/ip.2009.023002

18th International Conference on Safe Communities. Community Safety Policies as an Axis for Development

Sports Safety Conference
3–5 September 2009, Magglingen, Switzerland. The goals of the 5th tri-national conference of the leading German-speaking organisations on research and prevention of sports accidents are to exchange scientific information and develop strategies and measures associated with sports accident prevention. Further information: http://bit.ly/sportsconf.

International Research Council on the Biomechanics of Injury

2nd Injury Prevention Conference for the UK and Ireland
24–25 September 2009, Cardiff, UK. The conference will focus on the prevention of injuries to children and young adults including those from accidents, violence and self harm. It will highlight evidence of good practice and successful implementation of programmes, and will focus on how the knowledge, policy or intervention in the presentation is, or will be useful for injury prevention practitioners and policy makers. Further information: http://bit.ly/uk2conf.

Association for the Advancement of Automotive Medicine 53rd Annual Conference

XXV World Congress on Suicide Prevention

Road Safety 2020: Smart Solutions, Sustainability, Vision
5–6 November 2009, Perth, Australia. The 2009 annual conference of the Australian College of Road Safety focuses on advances in technology, research advances and solutions (smart systems), and high risk road users (eg motorcycles, youth) and current issues. Further information: http://bit.ly/acsrs2009.

19th International Safe Communities Conference
23–26 March 2010, Suwon, Korea. The theme of the conference is “Sustainability of Safe Community Programs”. For information, contact jpcho@ajou.ac.kr.

Safety 2010. 10th World Conference on Injury Prevention and Control
21–24 September 2010, London, UK. The key theme of the conference is “Safe and Equitable Communities”, chosen because levels of almost all types of injuries fall more heavily on poorer communities. Such differences are apparent within countries, between countries and even between global regions. While there is a clear pressure to make all communities safe, the conference will bring special attention to the need to consider equity in prioritising actions and identifying those most at need and most likely to benefit from safety initiatives. For further information, to submit an abstract and to register, visit http://www.safety2010.org.uk.

CORRECTION

doi:10.1136/ip.2008.021352corr1

Miller M, Barber C, Azrael D, et al. Injury Prevention 2009;15:185–7. In the Results section of the abstract, the last sentence should end “... lived in a home without firearms” (not “with”).