

Felonious or Violent Criminal Activity That Prohibits Gun Ownership Among Prior Purchasers of Handguns: Incidence and Risk Factors

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Background: Federal law prohibits firearm possession by felons and certain others. Little is known about criminal activity resulting in new ineligibility to possess firearms among persons who have previously purchased them.

Methods: Cohort study of handgun purchasers ages 21 to 49 in California in 1991, 2,761 with a non-prohibiting criminal history at the time of purchase and 4,495 with no prior criminal record, followed for up to 5 years. The primary outcome measures were the incidence and relative risk of conviction for a felony or violent misdemeanor resulting in ineligibility to possess firearms under (a) California law or (b) federal law. Secondary measures were the incidence and relative risk of conviction for murder, forcible rape, robbery, or aggravated assault; and of arrest for any crime.

Results: A new conviction for a felony or violent misdemeanor leading to ineligibility to possess firearms under federal law was identified for 0.9% of subjects with no prior criminal history and 4.5% of those with 1 or more prior convictions (hazard ratio, 5.1; 95% confidence interval, 3.3–7.7). Risk was related inversely to age and directly to the extent of the prior criminal history; incidence rates varied by a factor of 200 or more among subgroups based on these characteristics.

Conclusions: Among legal purchasers of handguns, the incidence of new felonious and violent criminal activity resulting in ineligibility to possess firearms is low for those with no prior criminal history but is substantially higher for those with a prior criminal record and is affected by demographic characteristics.

Key Words: Firearms, Handguns, Violence, Crime, Policy.

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Both the authors had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Both participated in the conceptualization and design of the study, the acquisition of data, the analysis and interpretation of data, and the drafting and revision of the manuscript. Dr. Wintemute obtained the funding and provided study supervision.

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There is general agreement that persons who are at unacceptably high risk for committing firearm-related violence should not be permitted to purchase or possess firearms. Under federal law, individuals who seek to purchase firearms from licensed dealers must first undergo a background check to verify that they are eligible to do so. Felons, persons convicted of misdemeanor domestic violence offenses or subject to domestic violence restraining orders, controlled substance addicts, and certain others are prohibited.¹ Some states have enacted broader controls, including more comprehensive prohibitions and, in some cases, a requirement that nearly all gun sales include a background check.² In 2008, federal and state agencies conducted 9,900,711 background checks on potential firearm purchasers, of which 147,080 (1.5%) resulted in a denial of purchase.³

Persons who purchase guns legally, like the rest of the population, may later commit serious crimes. In 1 study, 24.9% of legal handgun purchasers who had prior convictions for misdemeanor crimes, and 4.4% of those with no prior criminal record at all, were charged with new violent crimes over a 15-year period of follow-up.⁴ In 2002, California's Attorney General estimated that there might be 170,000 persons in that state who had purchased handguns or assault-type firearms and had since, usually because of a criminal conviction, become prohibited from owning them.⁵ Denying gun purchases by persons who are prohibited from owning them is associated with a roughly 25% decrease in the prospective purchasers' risk for committing new firearm-related or violent crimes.^{6,7} By extension, identifying persons who have previously and legally purchased guns—who are likely still to be gun owners—among those who have been convicted of crimes that prohibit gun ownership might also be a valuable violence prevention measure.

We undertook this study to determine the incidence of and risk factors for a conviction for a prohibiting criminal offense among legal handgun purchasers in California, which has not previously been done. Our study population comprises 7,256 persons ages 21 to 49 who purchased handguns in 1991, of whom 4,495 had no prior criminal record, 1,204 had previously been arrested but had never been convicted of a crime, and 1,557 had 1 or more prior criminal convictions. Follow-up is for as much as 5 years after handgun purchase. Given prior findings,^{4,6,7} we hypothesized that risk would be low for those with no prior criminal history but substantially higher for those with prior convictions or arrests, would be

directly related to the extent of a prior criminal history, would be inversely related to age, and would be unrelated to gender.

MATERIALS AND METHODS

Identifying the Study Population

The California Department of Justice (CDOJ) provided records for all handgun purchases from licensed gun dealers in 1991. We identified the study population following procedures described previously.⁴ After eliminating multiple entries for persons who had purchased more than 1 handgun, the purchase records were stratified by the presence or absence of a CDOJ identifying number indicating that, at the time of purchase, the buyer had an identification record on file at CDOJ and therefore might have a criminal history. (Most purchase records with identifying numbers were known to be for persons whose identification records at CDOJ related to pre-employment screening or other matters.) One sample was then drawn from each stratum: 6,300 with an identification number and 4,000 without. The sample size was such as to yield cohorts sufficient, based on prior results,⁴ to detect a relative risk of 1.5 to 2.0, depending on the outcome measure, with a power of 0.9 or higher.

Criminal records were requested for all potential subjects. All persons having criminal records at the time of handgun purchase (including a small number whose handgun purchase records had no CDOJ identifying number) were assigned to the prior criminal history cohort. Persons without identifying numbers who proved to have no criminal record at the time of handgun purchase were assigned to the no prior criminal history cohort, along with a random sample of persons whose identifying numbers proved to be for reasons other than a prior criminal record. The size of this sample reflected our best estimate of the proportion of all handgun purchasers who had an identification number but no criminal record.

The age range for the initial samples was 21 years to 54 years. To minimize the impact of CDOJ's practice of purging inactive criminal records from its archives, which was done more commonly for persons above age 50,⁴ we excluded 514 persons ages 50 to 54. Records for 285 potential subjects ages 21 to 49 had also been purged. They were excluded from the study population, and a sensitivity analysis was added to assess the impact on our results.

We also excluded 56 persons with a prior criminal history that, on our review, appeared to prohibit them from purchasing firearms. Fourteen had been convicted of a prohibiting misdemeanor within 10 years of their purchase (California's misdemeanor prohibitions expire after 10 years); 24 had been convicted of a felony; 17 had been adjudicated as juveniles for crimes that would have been felonies had these persons been adjudicated as adults; the record for 1 person could not be located.

Data Acquisition and Management

We used double data entry procedures throughout, with automated and manual comparisons. Differences were resolved by discussion led by a senior staff member.

Demographic information was available from the handgun purchaser records; this information was variably provided by either the purchaser or the seller. For subjects having criminal records, all charges and convictions were recorded. Information on restraining orders was not available. The misdemeanors for which a conviction prohibits firearm ownership under California law are specified in statute.⁸ We included only convictions for a misdemeanor having domestic violence as a required element of the offense as prohibiting firearm ownership under federal law, as we did not have information on the facts surrounding individual offenses. Felony convictions were usually identified as such in the criminal record; if the nature of the conviction was not specified, we required that the offense be specified as a felony in the California Penal Code. The violent Crime Index offenses are defined as murder, forcible rape, robbery, and aggravated assault.

The follow-up period began 15 days after the application for handgun purchase—the first day on which legal acquisition of the gun could have occurred. Following procedures that have been described previously,^{4,7} we verified subjects' continuing residence in California for up to 5 years afterward, independent of any instances of criminal activity, using driver's license, credit agency, and death records. Subjects were considered to be at risk for only so long as their residence in California could be verified and only arrests and convictions occurring in the state were included in the analysis.

Statistical Analysis

Our primary outcome events were first new convictions for felony or prohibiting misdemeanor crimes under either California or federal law. Secondary outcome measures were first new convictions for violent Crime Index offenses, and first new arrests. Arrest is often used as a measure of the incidence of new criminal activity^{9–11} and has been used in prior studies of criminal activity among gun purchasers.^{4,6} Incidence rates for all outcomes were calculated as the number of subjects who experienced each outcome divided by the total person-time at risk. The probability of sustaining an outcome event during follow-up was estimated by the Kaplan-Meier method.¹² The significance of differences in probabilities was assessed by the log-rank statistic.

Cox proportional hazards regression was used to calculate hazard ratios (HRs) and 95% confidence intervals (CIs). Models including age, sex, and, where appropriate, number of prior convictions were used to estimate adjusted HRs. (Race or ethnicity was not used in the regression analyses given its varying sources.) Age was stratified (21–24, 25–34, 35–49) as was prior criminal history (none; 1 or more arrests, but no convictions; 1; 2; or 3 or more convictions).

For the sensitivity analysis, we repeated the main regressions with persons whose criminal records had been purged added to the data under the assumptions of (1) no occurrence of any outcome event and (2) follow-up for the entire 5-year observation period. To compare rates in our study population with those of the adult population of California, crude arrest and conviction rates for study subjects

were calculated as the total number of arrests and convictions divided by the person time at risk. Arrests on multiple charges were counted as single events; each conviction was counted separately. Rates for the adult population of California (ages 18–69) were available from published reports.^{13–18}

The significance of differences between subjects with and without independent follow-up was estimated using the χ^2 statistic. All tests of significance were 2-sided, with $p < 0.05$ taken to represent statistical significance. SAS software was used for all procedures (PC-SAS, Version 9.1, SAS Institute, Cary, NC). This study was approved by the institutional review board of the University of California, Davis.

RESULTS

There were 4,495 handgun purchasers with no prior criminal history and 2,761 with 1 or more prior arrests or convictions. Differences in the demographic characteristics of the 2 groups were small but statistically significant (Table 1). Of subjects with a prior criminal history, 56.5% (1,557 persons) had at least 1 criminal conviction before handgun purchase; 18.6% had 2 or more. The remainder (1,204 persons, 43.6%) had arrests only.

Evidence of subjects' continued residence in California for the entire 5-year period of follow-up was available for 2,048 (45.6%) of those with no prior criminal history and 1,542 (55.8%) of those with a criminal history ($p < 0.0001$). Partial follow-up was available for another 1,815 (40.4%) and 1,051 (38.1%), respectively ($p < 0.0001$). Complete absence

of follow-up was related to subjects' study cohort (no prior criminal history, 14.1%; prior criminal history, 6.1%; $p < 0.001$), and to age, though the difference was small (21–24, 13.9%; 25–34, 10.3%; 35–49, 10.5%; $p = 0.001$), but not to sex (male, 10.9%; female, 11.8%; $p = 0.50$) or extent of prior criminal history (arrest only, 6.6%; 1 conviction, 5.7%; 2 convictions, 7.0%; ≥ 3 convictions, 4.2%; $p = 0.40$).

During follow-up, 1.0% of handgun purchasers with no prior criminal history (39 persons) were convicted of a felony or prohibiting misdemeanor and became ineligible to own firearms under California law; slightly fewer (33 persons, 0.9%) became ineligible under federal law (Table 2). Among subjects with prior misdemeanor convictions, 5.5% (78 persons) and 4.5% (64 persons) experienced a prohibiting conviction under state and federal law, respectively (state-law prohibition HR 5.2, 95% CI 3.6–7.7; federal-law HR 5.1, 95% CI 3.3–7.7). Findings were similar for purchasers with prior arrests only, for secondary outcomes, and for age- and sex-specific comparisons (Table 2; Kaplan-Meier event curves are at Supplemental Figure 1, <http://links.lww.com/TA/A30>). Among purchasers with prior convictions, risk for all outcomes was greater for those with 2 convictions than for those with 1, but there was no further increase among those with 3 or more (Table 2; Supplemental Figure 2, <http://links.lww.com/TA/A31>).

Among handgun purchasers with any prior criminal history, whether involving arrests only or prior convictions, the incidence of new prohibiting convictions was strongly related to age for all outcomes (Table 2, Supplemental Figure 3, <http://links.lww.com/TA/A32>). Purchasers ages 21 to 24 experienced conviction rates that were generally 2.5 to 3 times those for purchasers ages 35 to 49 (Table 2). Among purchasers ages 21 to 24 with prior criminal convictions, 3.0% were subsequently convicted of murder, rape, robbery, or aggravated assault. The age effect was even more pronounced among purchasers with no prior criminal record, chiefly as a result of the very low incidence of new criminal activity among those ages 35 to 49.

Incidence rates for males and females were essentially equal among purchasers with no prior criminal history or with prior arrests only. Among purchasers with prior convictions, rates were higher among females.

Incidence rates that were both age- and criminal history-specific varied by a factor of 200 or more; Figure 1 displays findings for the outcome of any arrest.

The regression findings persisted in models that adjusted for age and sex (Table 3). Handgun purchasers with 3 or more prior misdemeanor convictions were more than 10 times as likely as those with no prior criminal history to experience a prohibiting conviction, including a conviction for murder, rape, robbery, or aggravated assault.

In the sensitivity analysis, HRs for all outcomes among purchasers with a prior criminal record were necessarily diminished, but they remained elevated and statistically significant.

During 1991–1996, the adult population of California (ages 18–69) had an average annual arrest rate of 67.9 per 1,000 persons and an average annual conviction rate for violent Crime Index offenses of 2.2 per 1,000 persons. Com-

TABLE 1. Demographic and Prior Criminal History Characteristics of Handgun Purchasers*

Characteristic	Criminal History at Time of Handgun Purchase		p
	None (n = 4,495)	Any (n = 2,761)	
Sex			<.001
Male	3,944 (87.7)	2,563 (92.8)	
Female	551 (12.3)	198 (7.2)	
Age, yr			<.001
21–24	898 (20.0)	425 (15.4)	
25–34	1,792 (39.9)	1,213 (43.9)	
35–49	1,805 (40.2)	1,123 (40.7)	
Race/ethnicity			<.001
White	2,487 (55.3)	1,429 (51.8)	
Black	324 (7.2)	356 (12.9)	
Hispanic	1,106 (24.6)	748 (27.1)	
Asian/other	391 (8.7)	126 (4.6)	
Missing/unknown	187 (4.2)	102 (3.7)	
No. of prior convictions			
0†	—	1,204 (43.6)	
1	—	1,045 (37.9)	
2	—	272 (9.9)	
≥ 3	—	240 (8.7)	

* Data are expressed as number (percentage) of subjects. Percentages may not add to 100% due to rounding.

† These subjects had 1 or more prior arrests but no known convictions.

TABLE 2. Incidence of and Crude HR for Outcome Events*

Criminal History at Time of Handgun Purchase	Arrest for Any Crime			Conviction for Felony or Violent Misdemeanor (California Prohibition)			Conviction for Felony or Domestic Violence Misdemeanor (Federal Prohibition)			Conviction for Violent Crime Index Crime†			
	No. of Subjects	No. (%) Arrested	No. of Events per 1,000 Person Years	Crude HR (95% CI)	No. (%) Convicted	No. of Events per 1,000 Person Years	Crude HR (95% CI)	No. (%) Convicted	No. of Events per 1,000 Person Years	Crude HR (95% CI)	No. (%) Convicted	No. of Events per 1,000 Person Years	Crude HR (95% CI)
None													
All subjects	3,863	144 (3.7)	9.3	1.0 (Referent)	39 (1.0)	2.5	1.0 (Referent)	33 (0.9)	2.1	1.0 (Referent)	11 (0.3)	0.7	1.0 (Referent)
Sex													
Male	3,390	128 (3.8)	9.4		35 (1.0)	2.5		29 (0.9)	2.1		10 (0.3)	0.7	
Female	473	16 (3.4)	8.5		4 (0.9)	2.1		4 (0.9)	2.1		1 (0.2)	0.5	
Age, yr													
21-24	746	75 (10.1)	25.2		22 (3.0)	7.1		20 (2.7)	6.4		8 (1.1)	2.5	
25-34	1,549	66 (4.3)	10.5		16 (1.0)	2.5		12 (0.8)	1.9		3 (0.2)	0.5	
35-49	1,568	3 (0.2)	0.5		1 (0.1)	0.2		1 (0.1)	0.2		0	0	
Arrest(s) only													
All subjects	1,124	272 (24.2)	64.8	6.9 (5.6-8.4)	82 (7.3)	17.4	7.0 (4.8-10.3)	72 (6.4)	15.2	7.3 (4.8-11.0)	26 (2.3)	5.4	7.8 (3.9-15.8)
Sex													
Male	1,045	252 (24.1)	64.9	6.8 (5.5-8.4)	77 (7.4)	17.6	7.0 (4.7-10.4)	67 (6.4)	15.2	7.3 (4.7-11.3)	26 (2.5)	5.8	8.1 (3.9-16.8)
Female	79	20 (25.3)	64.0	7.5 (3.9-14.6)	5 (6.3)	14.3	6.9 (1.9-25.7)	5 (6.3)	14.3	6.9 (1.9-25.7)	0	0	0
Age, yr													
21-24	221	72 (32.6)	91.4	3.6 (2.6-4.9)	23 (10.4)	24.7	3.5 (1.9-6.3)	18 (8.1)	19.1	3.0 (1.6-5.6)	5 (2.3)	5.1	2.0 (0.7-6.3)
25-34	515	143 (27.8)	76.8	7.2 (5.4-9.7)	46 (8.9)	21.4	8.6 (4.9-15.1)	42 (8.2)	19.4	10.4 (5.5-19.8)	19 (3.7)	8.6	18.6 (5.5-62.7)
35-49	388	57 (14.7)	36.9	76.4 (23.9-244.0)	13 (3.4)	7.9	49.5 (6.5-378.6)	12 (3.1)	7.3	45.6 (5.9-350.9)	2 (0.5)	1.2	0
Misdemeanor conviction(s)													
All subjects	1,419	298 (21.0)	54.6	5.8 (4.8-7.1)	78 (5.5)	12.9	5.2 (3.6-7.7)	64 (4.5)	10.5	5.1 (3.3-7.7)	22 (1.6)	3.5	5.2 (2.5-10.6)
Sex													
Male	1,313	275 (20.9)	54.2	5.7 (4.6-7.1)	69 (5.3)	12.2	4.9 (3.2-7.3)	55 (4.2)	9.7	4.7 (3.0-7.3)	20 (1.5)	3.5	4.9 (2.3-10.4)
Female	106	23 (21.7)	60.3	7.0 (3.7-13.3)	9 (8.5)	21.2	10.2 (3.1-33.2)	9 (8.5)	21.2	10.2 (3.1-33.2)	2 (1.9)	4.5	8.7 (0.8-95.9)
Age, yr													
21-24	165	53 (32.1)	92.8	3.6 (2.5-5.1)	14 (8.5)	19.9	2.8 (1.4-5.5)	13 (7.9)	18.4	2.9 (1.4-5.8)	5 (3.0)	6.8	2.7 (0.9-8.4)
25-34	612	147 (24.0)	63.0	6.0 (4.5-8.0)	40 (6.5)	15.3	6.2 (3.5-11.0)	31 (5.1)	11.8	6.4 (3.3-12.4)	11 (1.8)	4.1	8.9 (2.5-31.9)
35-49	642	98 (15.3)	38.4	79.4 (25.2-250.5)	24 (3.7)	8.7	54.7 (7.4-404.4)	20 (3.1)	7.3	45.4 (6.1-338.6)	6 (0.9)	2.2	0
No. of prior convictions													
1	972	181 (18.6)	48.0	5.1 (4.1-6.4)	42 (4.3)	10.1	4.1 (2.6-6.3)	32 (3.3)	7.6	3.7 (2.3-6.0)	13 (1.3)	3.1	4.4 (2.0-9.9)
2	242	62 (25.6)	67.9	7.2 (5.4-9.7)	20 (8.3)	19.5	7.9 (4.6-13.5)	17 (7.0)	16.5	7.9 (4.4-14.2)	5 (2.1)	4.7	6.9 (2.4-19.8)
3+	205	55 (26.8)	71.6	7.6 (5.6-10.4)	16 (7.8)	18.3	7.4 (4.2-13.3)	15 (7.3)	17.1	8.2 (4.5-15.1)	4 (2.0)	4.4	6.5 (2.1-20.3)

HR, hazard ratio.

* Limited to subjects for whom follow-up independent of new criminal activity was available.

† Murder, forcible rape, robbery, aggravated assault.

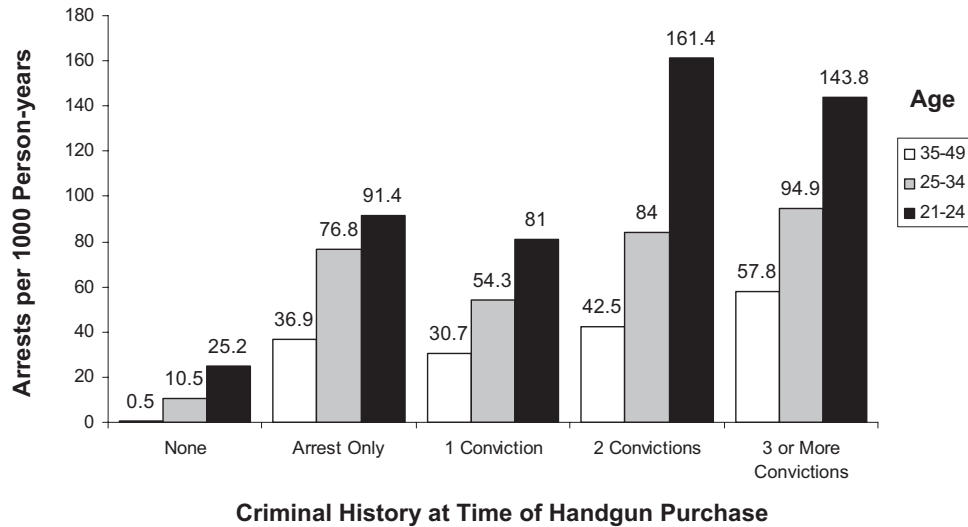


Figure 1. Incidence rates for arrest after handgun purchase for purchasers grouped by age and extent of prior criminal history.

TABLE 3. Adjusted HR for Outcome Events*

Characteristic	Arrest for Any Crime Adjusted HR (95% CI)	Conviction for Felony or Prohibiting Misdemeanor (California Prohibition) Adjusted HR (95% CI)	Conviction for Felony or Domestic Violence Misdemeanor (Federal Prohibition) Adjusted HR (95% CI)	Conviction for Violent Crime Index Crime† Adjusted HR (95% CI)
Arrest(s) only				
No criminal history	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
1 or more	6.7 (5.5–8.2)	6.7 (4.6–9.8)	7.0 (4.6–10.6)	7.0 (3.5–14.2)
Sex				
Male	1.0 (0.7–1.4)	1.2 (0.6–2.3)	1.0 (0.5–1.9)	3.2 (0.4–23.6)
Female	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Age, yr				
21–24	4.9 (3.6–6.6)	5.9 (3.2–10.8)	5.3 (2.8–10.0)	11.7 (2.6–51.8)
25–34	3.1 (2.3–4.1)	3.7 (2.0–6.5)	3.4 (1.9–6.3)	8.9 (2.1–38.0)
35–49	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Misdemeanor conviction(s)				
No criminal history	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
1	5.6 (4.5–6.9)	4.5 (2.9–6.9)	4.2 (2.5–6.8)	4.9 (2.2–11.1)
2	9.0 (6.7–12.2)	9.9 (5.7–17.1)	10.4 (5.7–18.8)	9.2 (3.1–26.8)
3+	11.4 (8.3–15.7)	11.6 (6.4–21.2)	13.6 (7.2–25.6)	11.0 (3.4–35.6)
Sex				
Male	1.0 (0.7–1.3)	0.8 (0.4–1.4)	0.6 (0.3–1.1)	0.9 (0.3–3.1)
Female	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Age, yr				
21–24	4.9 (3.7–6.4)	5.3 (3.1–9.1)	6.1 (3.5–10.8)	7.7 (2.8–20.9)
25–34	2.4 (1.9–3.1)	2.6 (1.6–4.1)	2.4 (1.4–4.1)	2.6 (1.0–6.9)
35–49	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)

HR, hazard ratio.

* Limited to subjects for whom follow-up independent of new criminal activity was available. HRs are adjusted for all variables in the table.

† Murder, forcible rape, robbery, aggravated assault.

parison rates in our study population (Table 4) were substantially lower for handgun purchasers with no prior criminal history but were generally higher, except for subjects ages 35 to 49, among those with prior arrests or convictions.

Of all subjects with a prior criminal history, 62.6% (1,729 persons) had been charged with a violent misde-

meanor within 10 years of their handgun purchase, or with a felony. This was true for 60 (76.9%) of the 78 handgun purchasers with prior misdemeanor convictions who were later convicted of crimes that prohibited them from owning guns under California law, and 52 (81.3%) of the 64 persons with prior misdemeanor convictions who later became ineli-

TABLE 4. Total-Event Rates of Arrest for Any Crime and of Conviction for a Violent Crime Index Crime^{*†}

Criminal History at Time of Handgun Purchase	Events per 1,000 Person-Years	
	Arrest for Any Crime	Conviction for Violent Crime Index Crime
None		
All subjects	13.9	0.7
Sex		
Male	13.8	0.7
Female	14.5	0.5
Age, yr		
21–24	35.2	2.5
25–34	16.1	0.5
35–49	0.6	0
Arrest(s) only		
All subjects	87	6.5
Sex		
Male	87.8	7.0
Female	76.8	0
Age, yr		
21–24	130.2	5.0
25–34	92.1	10.6
35–49	54.4	1.8
Misdemeanor conviction(s)		
All subjects	77.2	4.6
Sex		
Male	74.8	4.6
Female	107.8	4.4
Age, yr		
21–24	154.2	12.0
25–34	83.3	5.1
35–49	50.6	2.1
No. of convictions		
1	65.2	4.0
2	95.9	7.5
3+	111.3	4.4

* Measured as the total number of events per 1,000 person-years over the period of follow-up. Comparison rates for the general adult population of California (ages 18–69) were 67.9 per 1,000 persons per year for any arrest and 2.2 per 1,000 persons per year for a conviction for a violent Crime Index crime.

† Murder, forcible rape, robbery, aggravated assault.

gible to own guns under federal law. Prior felony or violent misdemeanor convictions would have prohibited the handgun purchases that led to their inclusion in the study.

DISCUSSION

In this population of legal purchasers of handguns, the incidence of felonious and violent criminal activity among those with no prior criminal history was quite low. Only 1% of them, and only 1 individual among the 1,568 such purchasers ages 35 to 49, were convicted of a felony or violent misdemeanor over 5 years of follow-up. In the 1 prior study of such a population, just 10% of handgun purchasers with no prior criminal history were charged with new criminal activity during 15 years after purchasing their guns.⁴

But for handgun purchasers with a prior criminal history, whether involving prior convictions or only arrests, the findings were quite different. Approximately 20% to 25% of these subjects were arrested during follow-up; approximately 5% to 7% were convicted of a felony or violent misdemeanor. Their risk for all outcomes, adjusted by age and sex, was increased by a factor of between 5 and 8. There appeared to be a dose-response effect; relative risks for all outcomes were higher for those with multiple prior misdemeanor convictions than for those with just 1.

As predicted, age was inversely associated with absolute risk for all outcomes. This effect was quite large among handgun buyers with no prior criminal history, for whom incidence rates among those ages 21 to 24 were 30 to 50 times higher than rates among those ages 35 to 49. Among handgun buyers with a prior criminal history, however, rates for persons ages 21 to 24 were generally only 2 to 3 times higher than rates for persons ages 35 to 49. Conversely, there were age-related increases in the relative risk associated with a prior criminal history. For handgun buyers ages 35 to 49, relative risks associated with a prior arrest or conviction were greater than 40.

The most remarkable differences were seen when age and criminal history were considered together. Across all outcomes, handgun purchasers ages 21 to 24 with multiple prior misdemeanor convictions had incidence rates that were at least 200 times those for purchasers ages 35 to 49 with no prior criminal history.

Findings related to sex were sometimes unexpected. Within-group absolute event rates for males and females often differed little and were sometimes higher for females than for males, suggesting that, at least in this population, prior criminal history is more important than gender as a predictor of future criminal activity. Relative risks associated with prior misdemeanor convictions were greater for females than for males.

For 3 reasons, our results probably underestimate the true incidence of felonious and violent criminal activity leading to a prohibition on firearm ownership in our study population. First, we were unable to identify subjects who had been placed under felony indictment during follow-up or had become subject to domestic violence restraining orders; both events prohibit firearm possession under federal and state law. At any time, there are approximately 200,000 domestic violence restraining orders in force in California, not including temporary orders.¹⁹ Second, our relatively short period of follow-up makes it likely that a meaningful fraction of arrests for prohibiting crimes among our study subjects had not been adjudicated; additional instances of prohibition probably occurred when those verdicts were handed down. Last is incomplete reporting by the courts of convictions when they occur, a problem common to all criminal justice records systems.²⁰

One additional factor reduced our estimation of the incidence of ineligibility to possess firearms in this population under federal law only. We were unable to identify as domestic violence offenses those cases in which a subject was convicted on a charge of simple assault (or a similarly

nonspecific offense) and had a domestic relationship with the victim. Although such convictions have recently been found to be “misdemeanor crime[s] of domestic violence” by the Supreme Court, the facts of individual cases must be known to make a determination.²¹

To an even greater extent, for all the reasons just given and 1 more, our results probably underestimate the incidence of new ineligibility under federal law among persons who purchase handguns from licensed retailers in much of the United States. Since 1991, California has prohibited persons convicted of nearly all violent misdemeanors from purchasing firearms. Such persons are therefore excluded from our study population, but they remain able to purchase firearms elsewhere. They are at especially high risk for subsequent criminal activity after handgun purchase. In a prior study, as compared with purchasers with no prior criminal history, handgun purchasers with 2 or more prior convictions for violent misdemeanors had a 15-fold increase in risk of arrest for murder, rape, robbery, or aggravated assault.⁴

Limitations

As just described, California’s population of legal handgun purchasers is systematically different from such populations in other states. Replications of this study would be very helpful. To our knowledge, however, no other state has the requisite information and makes it available for analysis. We did not study handgun purchasers above 50 years of age, as we believed that they were at relatively low risk for serious criminal activity. Because we relied on published arrest and conviction rates for the general population of California, our comparisons are not age- and sex-specific and are not adjusted for differences in those characteristics. Our sample was structured to maximize statistical power, and purchasers with a prior criminal history are overrepresented.

It is also possible that the incidence of criminal activity among handgun purchasers that leads to a prohibition on firearm ownership has fallen since our study period. California’s adult felony arrest and conviction rates have fallen by 18% and 12%, respectively, from 1991–1996 to 2007, the most recent year for which data are available.¹⁸

Most of our outcome measures were based on convictions—criminal justice events that resulted in a change in legal status regarding firearm ownership. We did not measure the incidence of felonious or violent criminal activity per se, for which arrest would have been more suitable^{9–11} and for which rates would have been higher.^{4,6,7}

Implications

The frequency of felonious and violent criminal activity among authorized purchasers of handguns leads to 2 considerations. First, it may be desirable to require a criminal records background check before all purchases of firearms to identify prospective purchasers who have become ineligible since a prior background check, if any, was done. In most states that already occurs when the purchase is made from a licensed dealer, but there is an important exception. In 14 states containing 26% of the population, holders of permits to carry concealed firearms are exempt from background checks

while the permits remain in effect—4 or 5 years—and any eligible person who requests such a permit must be given one.²² Our findings suggest that a considerable number of these permit holders will have become ineligible to purchase firearms before their permits have expired.

Only 6 states require a background check for all, or nearly all, firearm purchases. In 33 states private individuals may sell firearms directly, without the participation of a licensed retailer.² Such transactions account for as many as 40% of all firearms acquisitions nationwide,²³ and background checks are not required.

Second, if the incidence of serious criminal activity among gun purchasers with a prior criminal history is deemed unacceptable, 2 additional interventions may be worthy of consideration. One is to expand the criteria for denial of firearm purchase, which has been shown to reduce the risk of violent and firearm-related crime among those directly affected by about 25%.⁷ The second is to work aggressively for the conviction of persons charged with prohibiting offenses when supported by the facts. More than 75% of the handgun purchasers with prior misdemeanor convictions who were later convicted of crimes that prohibited gun ownership had been charged with prohibiting offenses before purchasing their guns.

When records of gun purchases are retained, the same data that are now used to screen for prohibiting criminal activity among prospective gun purchasers can be used to screen for gun ownership among persons who have committed a prohibiting criminal act. Risk for criminal recidivism is highest after an index event and declines steadily, and a person recently convicted of a felony or violent misdemeanor who has previously purchased firearms—and is now prohibited from possessing them—might be given a high priority for intervention in a comprehensive violence prevention program. Two existing programs could serve as models, but neither has been subjected to a rigorous outcome evaluation. The Federal Bureau of Investigation and the Bureau of Alcohol, Tobacco, Firearms and Explosives have successfully retrieved hundreds of firearms from prohibited persons who acquired them when the 3-day waiting period mandated by federal law expired before their background checks were completed.²⁴ Since 2006, the California Department of Justice’s Armed and Prohibited Persons System has identified prior handgun purchasers among newly prohibited persons. Hundreds of firearms have been retrieved.²⁵

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