

Firearm Injury Encounters in the Veterans Health Administration (VHA), 2010-2015

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Introduction

Firearm violence is an issue of public health concern leading to more than 30,000 deaths and 80,000 nonfatal injuries in the United States annually.¹ To date, firearm-related studies among Veterans have focused primarily on suicide and attempted suicide.²⁻⁵ Herein, we examine firearm violence among VHA enrollees for all manners/intents, including assault, unintentional, self-inflicted, undetermined and other firearm-related injury encounters in both the inpatient and outpatient settings.

Methods

Inpatient and Outpatient encounters with one or more ICD-9-CM firearm external-cause-of-injury codes (E-codes) from 1/1/2010-9/30/2015 were extracted from the VHA's Praedico™ Public Health Surveillance System, including demographics, era of service/eligibility, encounter type, and deaths. Firearm E-codes were classified for manner/intent based on the CDC's Web-based Injury Statistics Query and Reporting System (WISQARS™) matrix.⁶ Outpatient/emergency department (ED) data were exclusively from VHA facilities (a single pediatric patient seen as a humanitarian emergency was excluded from the dataset). Inpatient data included VHA facilities and some records received from non-VHA facilities. VHA rate of hospitalization for firearm-related admissions was calculated using the total VHA acute-care admissions for the same time period as the denominator.

Results

During the time frame examined, 5,205 unique individuals were seen with a firearm E-code. Of these, 4,221 were seen in the outpatient/ED setting only, 597 in the inpatient setting only, and the remaining 387 had encounters in both the outpatient/ED and inpatient settings. VHA firearm admission rate was 1.63 per 10,000 VHA admissions, compared to a national rate of 1.96 per 10,000 in 2010.⁷ Table 1 shows the breakdown of encounters by manner/intent. Unintentional was the most common firearm injury manner/intent. Overall, the median age at initial encounter was 54 (range 19-100 years), and 96% were male. The highest percentage served in the Persian Gulf War Era (2,136, 41%), followed by Vietnam Era (1,816, 35%) and Post-Vietnam Era (716, 14%). The greatest number of patients with a firearm-coded encounter resided in Texas (453), California (349), Florida (326), Arizona (214) and Ohio (212).

Conclusions

Unintentional injuries were the most common form of firearm injury among VHA enrollees, representing over half of all outpatient/ED firearm encounters and more than twice the number of firearm hospitalizations compared with any other manner/intent. Limitations include that not all U.S. Veterans are VHA enrollees; miscoding and misclassification of firearm-related injuries may have occurred; and data from non-VHA outpatient/ED encounters and some non-VHA hospitalizations are not available to our surveillance system for analysis. Additional study is needed to further understand

the epidemiology of firearm-related injuries among Veterans and inform VHA leadership and providers.

Table 1. VHA Firearm-coded Inpatient and Outpatient Encounters by Category of Manner/Intent, January 2010- September 2015.

Manner/Intent (ICD-9 E-codes)	Unintentional (E922.0-3, 8, 9)	Self-inflicted (E955.0-4)	Assault (E865.0-4, E975.4)	Undetermined (E985.0-4)	Other (E970, E928.7)	Total
Outpatient/ED Encounters*	6,329	4,084	1,151	721	387	12,587
Hospitalizations	333	161	136	115	33	768
Median Length of Stay, Days (range)	4 (1-368)	8 (1-189)	5 (1-170)	5 (1-153)	5 (1-103)	5 (1-368)
Non-VHA Hospitalizations (%)	51 (15)	43 (27)	36 (26)	4 (3)	7 (21)	141 (18)
Deaths*	3	6	2	1	1	13
Unique Individuals	3,110	901	721	511	342	5,205
Median Age, Years (range)	55 (19-99)	50 (21-92)	53 (19-97)	53 (21-92)	55 (19-100)	54 (19-100)
Males (%)	3,017 (97)	855 (95)	698 (97)	504 (99)	322 (94)	5,023 (96)
Era of Service/Eligibility						
WWII (12/7/41-12/31/46)	55	12	20	3	11	101
Pre-Korean (1/1/47-6/26/50)	9	2	0	3	1	14
Korean (6/27/50-1/31/55)	81	12	10	11	13	123
Post Korean (2/1/55-8/4/64)	54	15	7	10	9	89
Vietnam (8/5/64-5/7/75)	1,073	287	260	169	121	1,816
Post-Vietnam (5/8/75-8/1/90)	447	111	113	61	45	716
Persian Gulf (8/2/90-present)	1,271	441	276	233	119	2,136
Active Duty	62	6	18	15	10	110
Other/None†	58	15	17	6	13	101

Note: Manner/Intent categories are not mutually exclusive. Encounters and hospitalizations may have been coded for more than 1 manner/intent.

*Only a single encounter per patient, per day was included.

†During the firearm-coded hospitalization. Cause of death was not reviewed to determine whether directly or indirectly related to the firearm injury event.

‡Other/None: includes Canadian Army Veteran (CAV), Civilian Health and Medical Program of the VA (CHAMPVA)—Spouse or dependent, Humanitarian Emergency, Other Non-Veterans, and Tricare. A single pediatric patient seen as Humanitarian Emergency was excluded from the analysis.

Keywords

Veterans; Firearms; Injury; Surveillance

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