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Surveillance for Opioid Overdose in the Veterans Health Administration, 2004-2014

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Objective

To examine inpatient admissions for opioid overdose among U.S. Veterans using national-level surveillance data.

Introduction

Drug poisoning, or overdose, is an epidemic problem in the United States[1,2]. In keeping with national trends, a recent study combining U.S. Veterans Health Administration (VHA) data with the National Death Index showed increases in opioid overdose mortality from 2001 to 2009[3]. One of the challenges in monitoring the overdose epidemic is that collecting cohort data to analyze overdose rates can be labor-intensive. Moreover, analysts are often unable to collect real-time data on overdose events. To explore solutions to these challenges, we examined opioid overdose by using Veteran healthcare data already being collected for syndromic surveillance.

Methods

We analyzed data from the VHA Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE) platform for January 2004 through June 2014. After evaluating both inpatient and outpatient data, we restricted the analysis to admissions with a principal diagnosis of opioid poisoning in order to reflect severe acute events. We included any admissions with a principal diagnosis of 965.00 (opium alkaloids unspecified), 965.01 (heroin), 965.02 (methadone), or 965.09 (other opiates and related narcotics). We calculated opioid poisoning rates per 1,000 inpatient admissions by age group and U.S. Census region.

Results

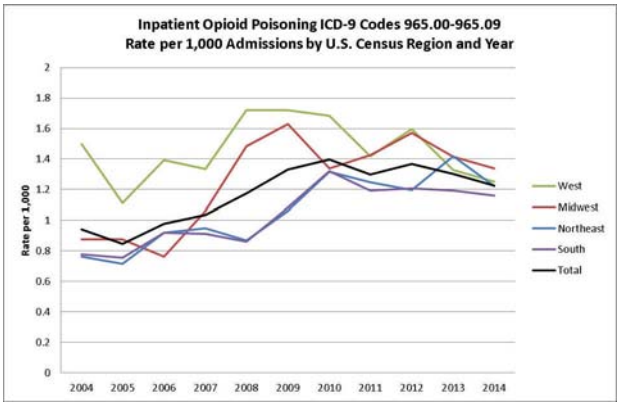
A total of 6,317 admissions with a principal diagnosis of opioid poisoning were reported out of 5,459,815 admissions. Death was the final outcome for 64 (1.0%) opioid admissions. Rates of opioid poisoning were highest among younger Veterans, and lowest among Veterans age 65 years and older (Table). Trends over time showed increases for all except 45–54 year olds (p=0.16; p <=0.02 for all other groups), for whom the opioid poisoning rate was initially highest during the study period. Overdose rates were highest in the Western United States, where trends were stable over time (p=0.46) compared with increases in other regions (p<0.01). Total rates appear to have peaked in 2010 and subsequently plateaued (Figure).

Conclusions

We found that surveillance data could effectively be mined for evaluating opioid poisoning among Veterans. Although we focused on principal diagnosis, trends in all opioid poisoning ICD-9 codes and supplemental E codes indicating causes of injuries paralleled our current findings. As a proof of concept similar to assessing suicidal ideation using telephone triage data[4], we have used routine VHA surveillance data as a timely way to assess the opioid epidemic among Veterans. VHA is committed to reducing opioid morbidity through treatment and education[5].

Opioid Poisoning Admissions, ICD-9 Codes 965.00-965.09, by Age

Age Category	Opioid Admissions	Total Admissions	Average Annual Rate per 1,000 Admissions
Less than 35 years old	469	194,192	2.27
35-44 years	468	273,526	1.72
45-54 years	1,679	876,579	1.91
55-64 years	2,507	1,787,170	1.39
65-74 years	799	1,086,959	0.72
75 years and older	395	1,241,389	0.32



Keywords

opioids; overdose; trends; regional variation

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