

# Increasing Abuse of Gabapentin and Pregabalin as Reported to US Poison Centers 2006 through 2014

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## Abstract

### Increasing Abuse of Gabapentin and Pregabalin as Reported to US Poison Centers 2006 through 2014

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**Aims:** To determine if abuse of gabapentin and pregabalin are changing over time and to describe the outcomes of poison center cases involving abuse.

**Methods:** Data from the National Poison Data System (NPDS) from January 2006 through December 2014 were queried for gabapentin and pregabalin product codes and were utilized to determine if the category of intentional abuse cases were increasing in the US. The total number of cases of intentional abuse where the exposure was to gabapentin, pregabalin or both was computed and divided by the estimated population of the US and scaled per 100,000 population. A Poisson regression model was used to determine the percent change per quarter in the intentional abuse population rates.

**Results:** Of 4,152 intentional abuse cases exposed to gabapentin or pregabalin (n=2,279, 54.9%) were male. The median age of the 3,907 cases in which age was reported was 30 years (IQR: 21-42). A total of 1,325 (31.9%) exposures involved only a single substance. The rate in first quarter 2006 was 0.0144 per 100,000 population while the rate for fourth quarter 2014 was 0.0618 per 100,000 population, representing a 4.3-fold increase. Using Poisson regression, intentional abuse population rates increased at a rate of 4.0% (95% CI: 3.6-4.3%) per quarter. The medical outcomes were death (n=18, 0.4%), major effect (n=254, 6.1%), and moderate effect (n=1,238, 29.8%), with the balance being minor effects.

**Conclusions:** Population-based rates of intentional gabapentin and pregabalin abuse have increased since 2006. A high proportion of cases had an outcome that was moderate, major, or death. Continued monitoring and increased awareness of these rates is warranted.

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## Introduction

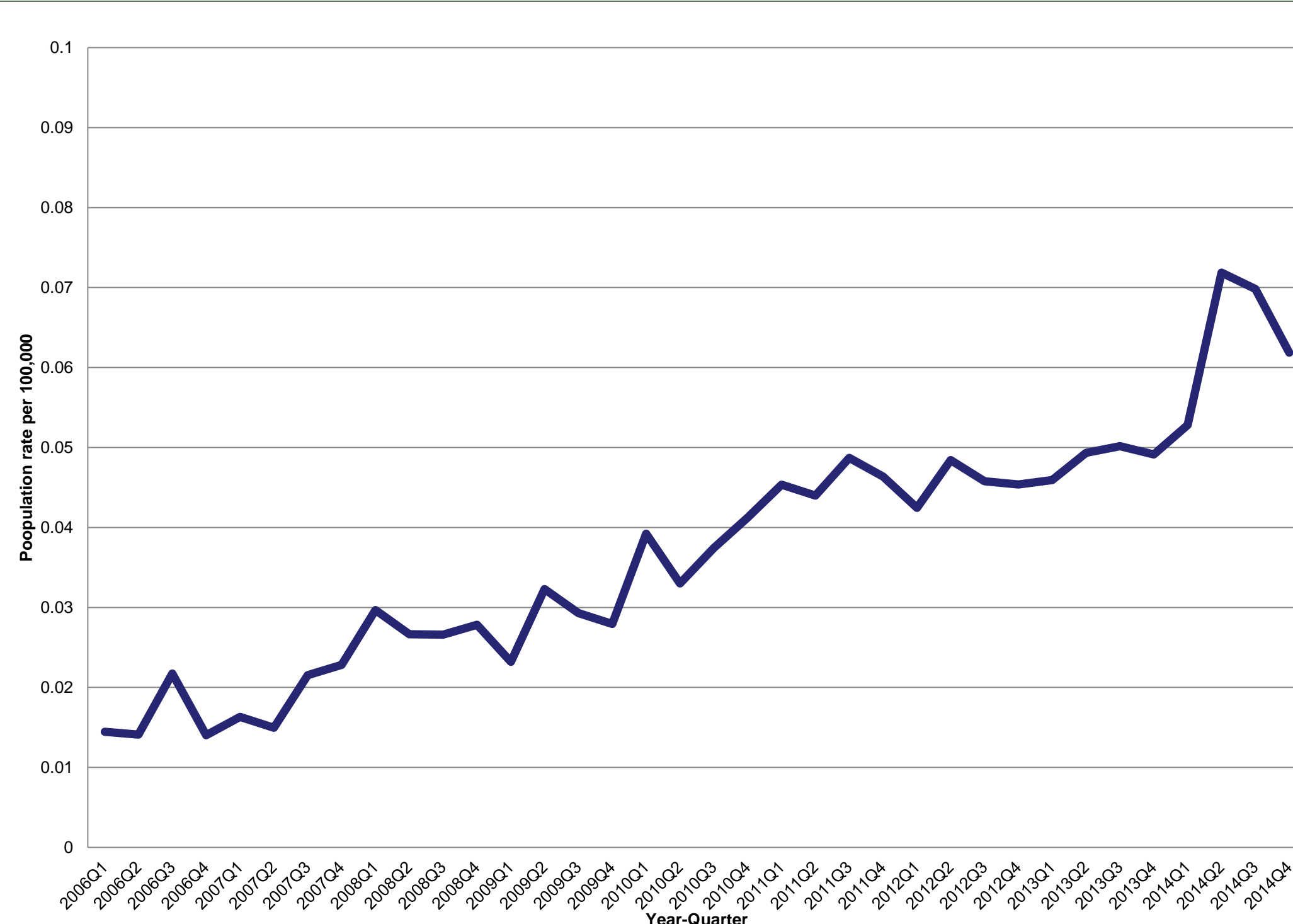
Rising abuse of prescription opioids has been a concern in the United States for over a decade, prompting numerous interventions such as state prescription monitoring plans, closing of "pill mills" in Florida, increased regulatory efforts by the FDA, and numerous guidance documents on appropriate opioid prescribing. As opioids become more difficult to obtain, abuse of other drugs may increase.<sup>1</sup> Gabapentin was first approved by the FDA in 1993 and pregabalin in late 2004.<sup>2,3</sup> Like opioids, both gabapentin and pregabalin can produce euphoria. The aim of this analysis was to quantify and characterize the trends in rates of abuse of gabapentin and pregabalin as reported to poison centers in the United States. Exposures classified as intentional abuse from 2006-2014 were examined. In addition, fatalities were examined to determine the frequency with which these drugs were used alone.<sup>4-13</sup>

## Methods

- Data from NPDS from January 2006 through December 2014 were queried for gabapentin and pregabalin product codes
- The total number of cases of intentional abuse exposures to gabapentin or pregabalin was computed and divided by the estimated population of the US (scaled per 100,000 population)
- A Poisson regression model was used to determine the percent change in the intentional abuse population-based rates per quarter
- The percent of total fatalities that were multi-substance exposures was determined for gabapentin and pregabalin

## Results

### Quarterly Gabapentin or Pregabalin Intentional Abuse Rates per 100,000 Population



### Demographics of NPDS Intentional Abuse Exposures to Gabapentin or Pregabalin 2006-2014 (n=4,152)

Age (years), median (IQR), n	30 (21-42), 3,907
Gender, n (%)	
Male	2,279 (54.9%)
Female	1,869 (45.0%)
Unknown	4 (0.1%)
Medical outcome, n (%)	
Death	18 (0.4%)
Major effect	254 (6.1%)
Moderate effect	1,238 (29.8%)
Minor effect	1,317 (31.7%)
No effect	455 (11.0%)
Not followed, judged as nontoxic exposure (clinical effects not expected)	11 (0.3%)
Not followed, minimal clinical effects possible (no more than minor effect possible)	287 (6.9%)
Unable to follow, judged as a potentially toxic exposure	473 (11.4%)
Unrelated effect, the exposure was probably not responsible for the effect(s)	99 (2.4%)
Number of substances, median (IQR)	2 (1-3)

### NPDS Fatalities Gabapentin and Pregabalin 2006-2014

	Gabapentin	Pregabalin
Single Substance	4 (1.7%)	1 (1.3%)
Multiple Substance	229 (98.3%)	77 (98.7%)
Total	233	78

## Results (continued)

- Only 1,325 (31.9%) of the intentional abuse exposures involved a single substance
- The rate in first quarter 2006 was 0.0144 per 100,000 population while the rate for fourth quarter 2014 was 0.0618 per 100,000 population, a 4.3-fold increase
- Using Poisson regression, intentional abuse population-based rates increased at a rate of 4.0% (95% CI: 3.6-4.3%) per quarter
- The medical outcomes were death (n=18, 0.4%), major effect (n=254, 6.1%), and moderate effect (n=1,238, 29.8%) with the remainder being minor effects or cases not followed

## Conclusions

- Population-based rates of gabapentin and pregabalin intentional abuse reported to US poison centers have increased since 2006
- A high proportion of cases had an outcome that was moderate, major, or death
- Most of the fatalities involving gabapentin and pregabalin were multi-substance exposures

## Discussion

Continued monitoring and increased awareness of rising abuse rates for gabapentin and pregabalin is warranted.

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None

## Conflict of Interest

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