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The diversion of non-scheduled psychoactive prescription drugs in the United States

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Disclosure

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Background

Diversion - the unlawful channeling of regulated pharmaceutical drugs from legal sources to illicit markets:

- doctor shopping
- pharmacy theft
- forged prescriptions
- “pill mills”

Controlled substances are the most frequently diverted medications.

Objectives

- The reduction in the diversion of Rx opioids in the US since 2010 was accompanied by an increase in heroin and illicit fentanyl use.
- Gabapentin, a non-controlled GABA analogue used to treat neuropathic pain, is increasingly abused by opioid-dependent people (Buttram et al. 2016)
- We searched a national database for patterns of diversion of other non-scheduled psychoactive medications.

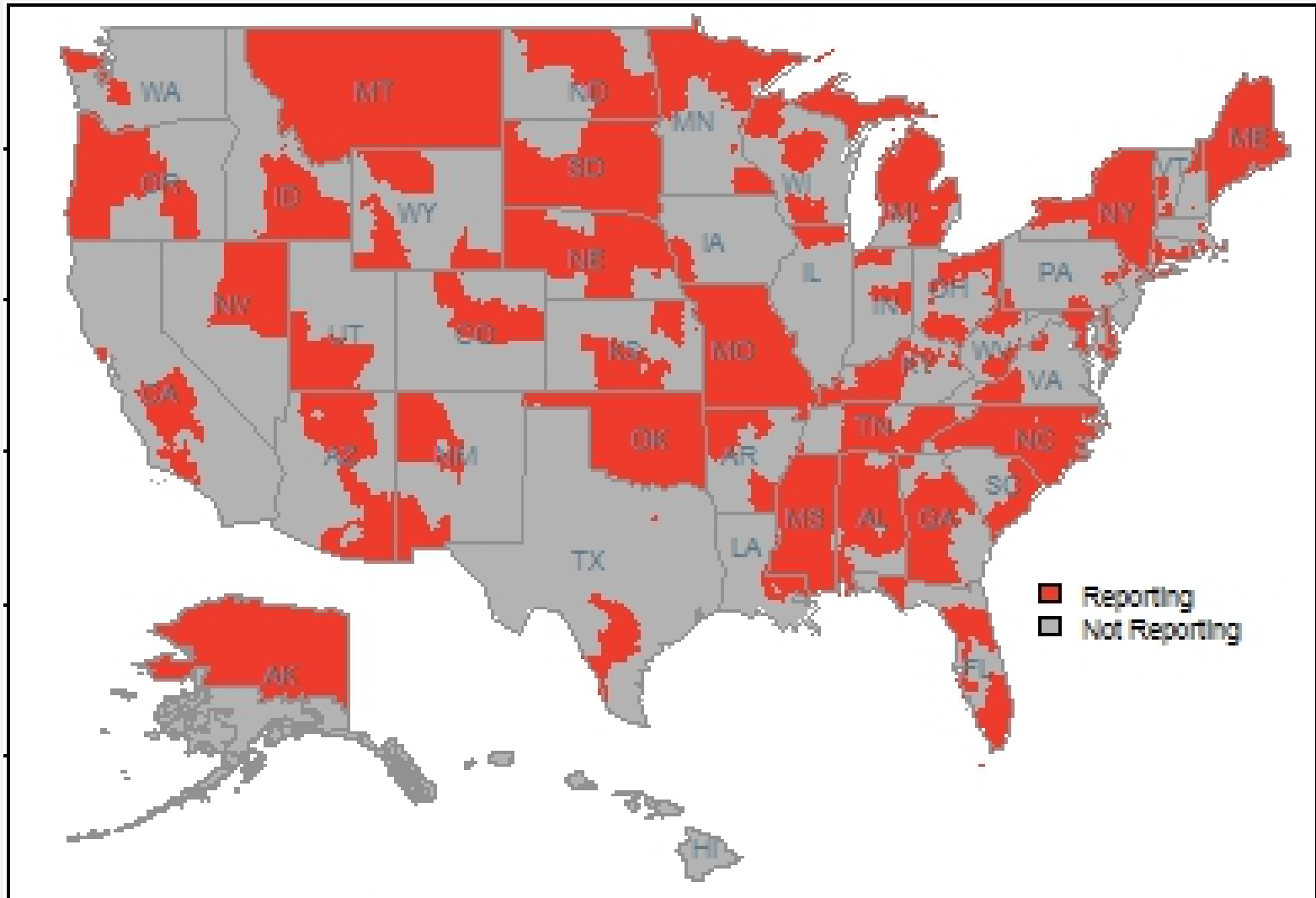
National Diversion Survey

To identify the diversion rates for selected drugs among a national sample of 250 law enforcement jurisdictions.

Rates are calculated per 100,000 population.

Mean population covered by the program
2002-2017 = 147 million.

Drug Diversion Program 2017 Geographic Coverage



Drug Diversion Program Methods

- Quarterly survey conducted since 2002
- Captures the total new cases officially logged during the previous quarter
- Queries the number of cases that included each target drug
- Space is provided to include data on other diverted drugs not listed

Top non-scheduled drugs 2002-2017

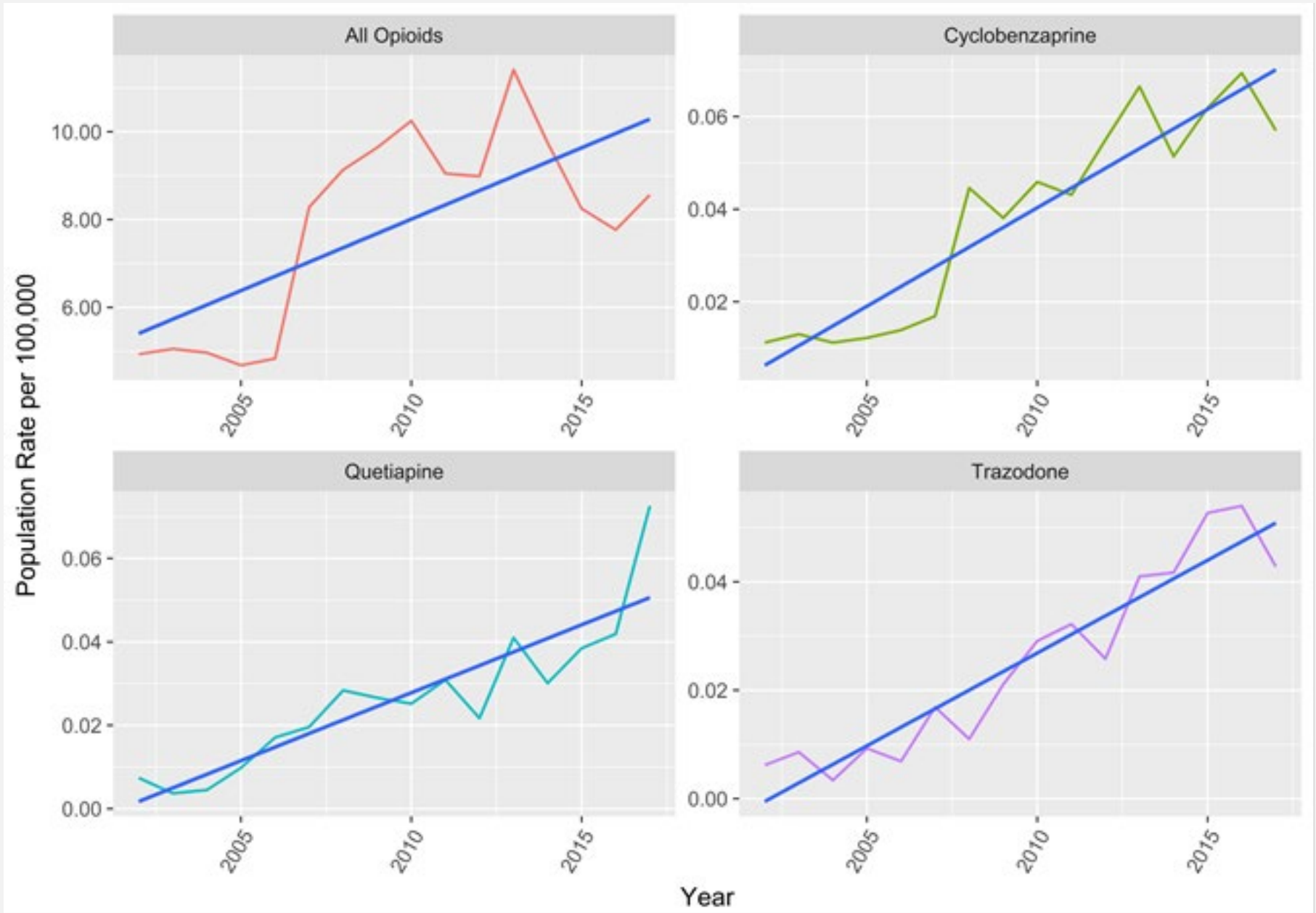
(excludes gabapentin, previously reported)

Drug	# Cases
1. Gabapentin (antineuralgic)	983
2. Cyclobenzaprine (muscle relaxant)	791
3. Quetiapine (antipsychotic)	532
4. Trazodone (antidepressant)	498
5. Sertraline (antidepressant)	194
6. Olanzapine (antipsychotic)	192
7. Methocarbamol (muscle relaxant)	163
8. Fluoxetine (antidepressant)	157
9. Buspirone (anxiolytic)	155
10. Clonidine (anxiolytic)	142
11. Hydroxyzine (antihistamine/ sedative)	142
12. Amitriptyline (antidepressant)	136

Results

- Cyclobenzaprine is prescribed off label for the treatment of pain; has sedative effects; is tracked by the DEA; street prices are reported.
- Quetiapine is prescribed off label for the treatment of anxiety and insomnia; has sedative effects; ER admissions for abuse reported; street prices are reported.
- Trazodone is prescribed off label for the treatment of insomnia and opioid withdrawal symptoms; sedative effects; prescriptions doubled between 2001 and 2014; street prices not apparent.

Diversion rates per 100,000 pop. and trend lines



Results

- Diversion rates for cyclobenzaprine, quetiapine and trazodone increased five to tenfold over the period.
- All trend lines, $p < .0001$.
- Regional clustering of cases was not observed.
- Internet searches and blogs indicate that all three medications are used for self-treatment of opioid withdrawal symptoms.

Discussion

Study strengths:

- 16 year period; consistent data collection procedures
- Extensive geographic and population coverage

Limitations:

- Not all geographic areas are covered
- Diversion of unscheduled medications drugs is likely underreported because they are not targets for law enforcement and are not listed on the survey

Discussion

- Increasing rates of diversion of trazodone, cyclobenzaprine and quetiapine are likely due to:
 - the ongoing opioid epidemic
 - tighter controls over scheduled medications
 - high availability and low street prices for non-scheduled drugs

Discussion

- There are potentially dangerous interactions with alcohol and other Rx and illicit drugs
- Prescribers need to be aware of diversion and misuse
- More research needed to identify specific populations and contexts for misuse

Thank you!

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