

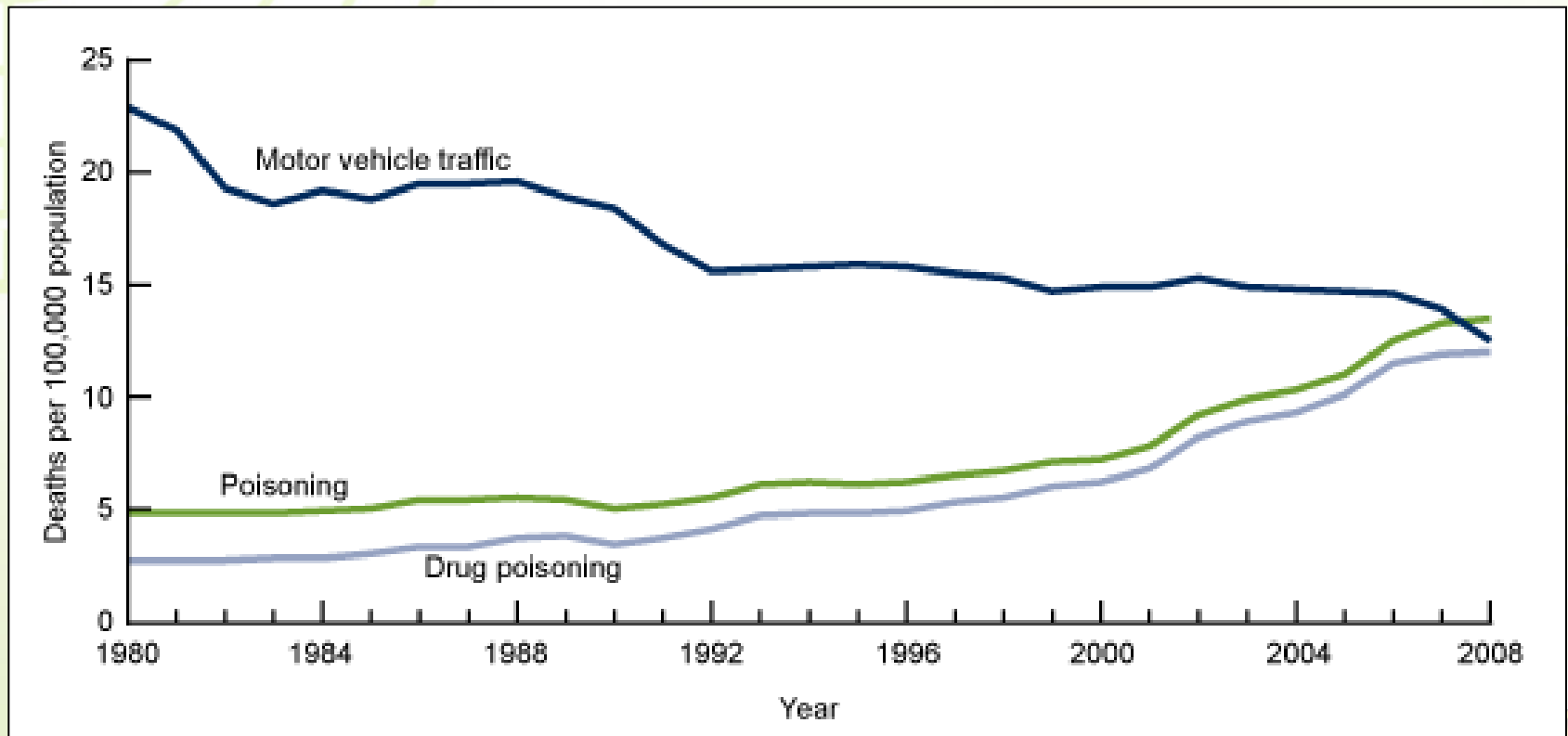
Prescription Drug Abuse: Colorado and Nationwide

Eric Lavonas, MD

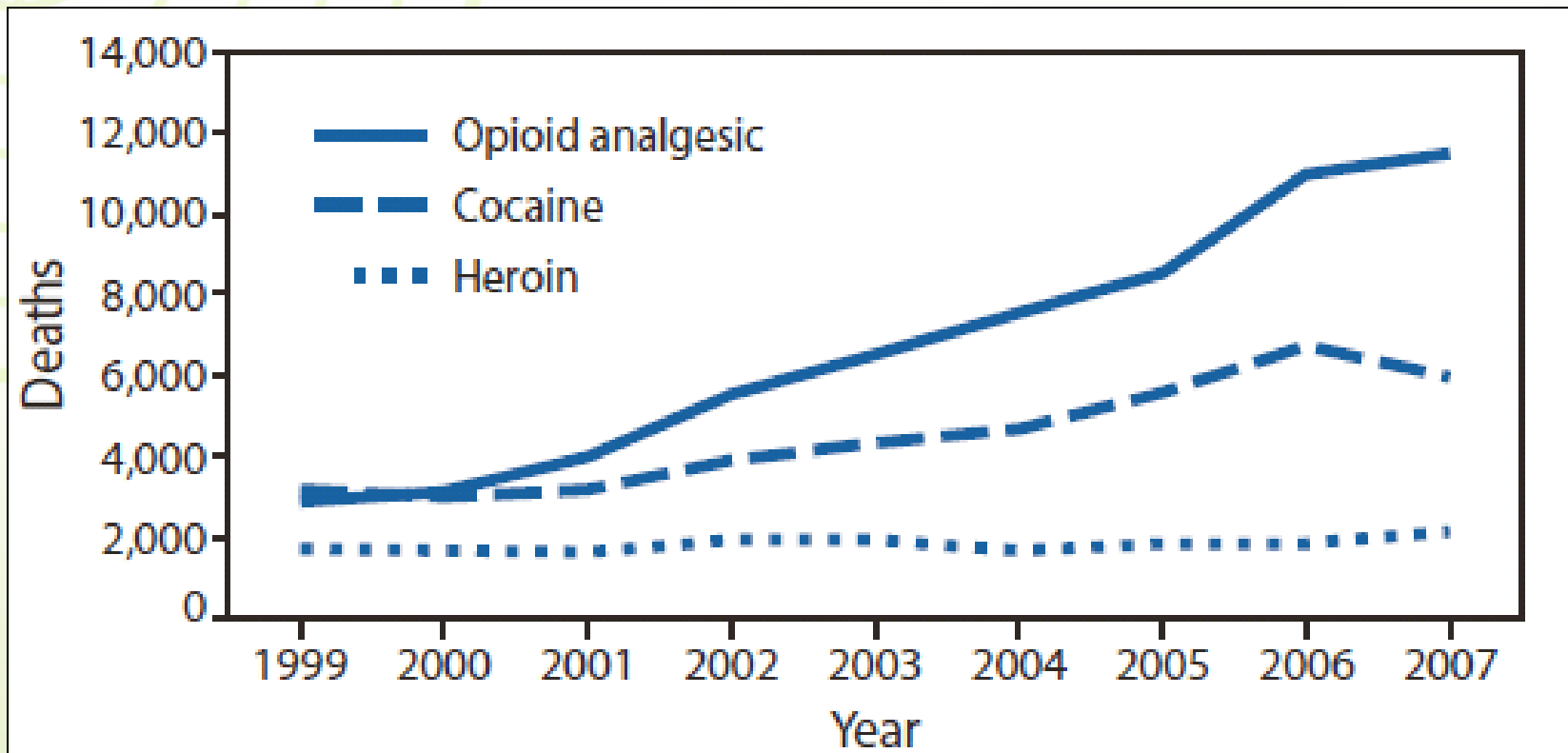
Associate Director, Rocky Mountain Poison and Drug Center
Associate Professor, University of Colorado School of Medicine



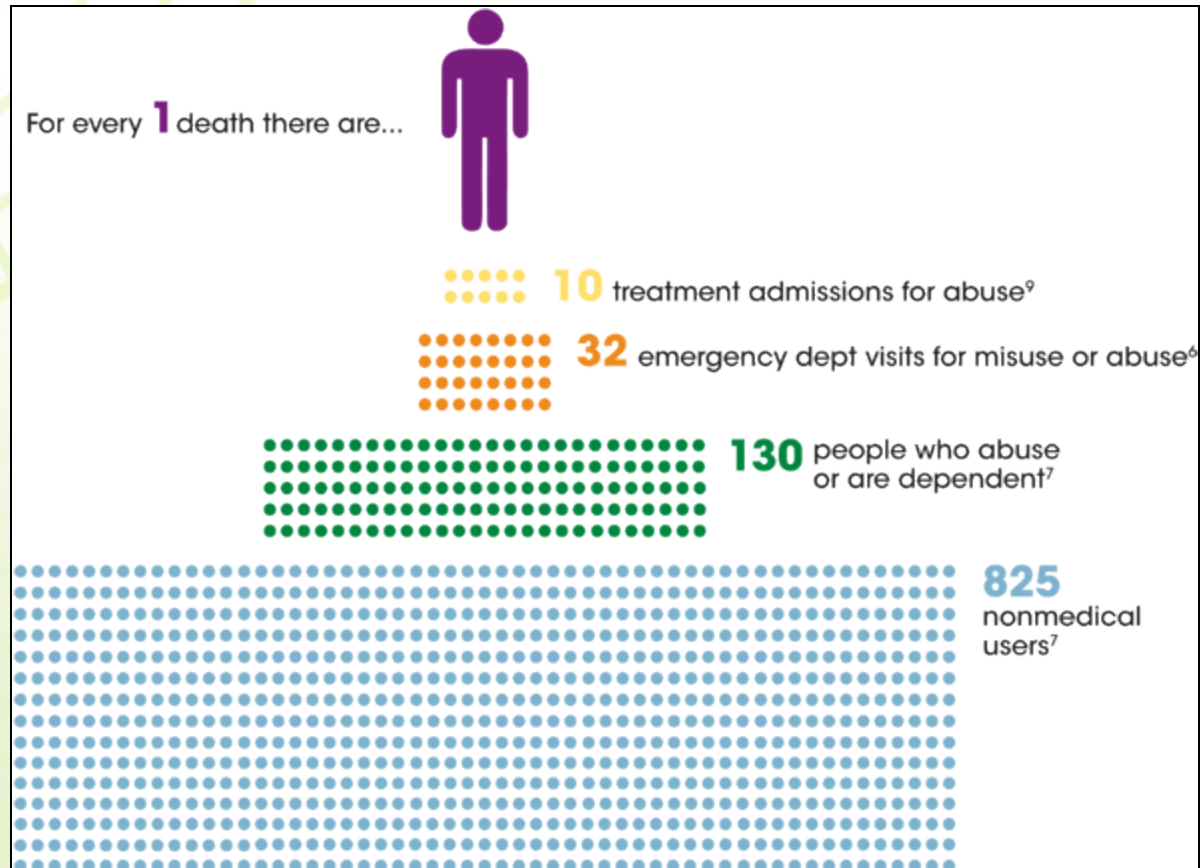
What's the Problem?



What's the Problem?



What's the Problem?



Opioid Pain Relievers

Active Ingredient	Common Brand Names
Hydrocodone	Vicoden, Lortab, Norco
Oxycodone	OxyContin, Tylox, Percocet
Morphine	MS Contin
Oxymorphone	Opana
Hydromorphone	Dilaudid, Exalgo
Tapentadol	Nucynta
Tramadol	Ultram
Buprenorphine	Subutex, Suboxone
Fentanyl	Duragesic, Actiq, Fentora
Methadone	Methadose

Benzodiazepines

Active Ingredient	Common Brand Names
Alprazolam	Xanax
Clonazepam	Klonopin
Diazepam	Valium
Lorazepam	Ativan
Temazepam	Restoril
Chlordiazepoxide	Librium
Clorazepate	Tranxene

Stimulants

Active Ingredient	Common Brand Names
Amphetamine / dextroamphetamine	Adderall
Methylphenidate	Concerta, Ritalin, Daytrana

Let's Not Forget...

Active Ingredient	Common Brand Names
Dextromethorphan	Coricidin, Robitussin
Bupropion	Wellbutrin
Quetiapine	Seroquel
Zolpidem	Ambien, Intermezzo,
Zopiclone / Eszopiclone	Lunesta

The RADARS System

- Operated by Rocky Mountain Poison and Drug Center – Denver Health
- Measures rates of abuse, misuse, and diversion of prescription opioids and stimulants
 - Also street price
- Product-specific
- Geographic (3 digit Zip code level)
- Timely



RADARS® System Mosaic Approach

College
Survey

Early
Experimenters



RADARS[®] System Mosaic Approach

**College
Survey**

**Early
Experimenters**

**Poison
Center**

Acute Events



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**OTP
Opioid Tx
Program**

**Patients in
Treatment**

**SKIP
Survey of Key
Informant Pts**

**Patients in
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**Criminal Justice/
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**Street
Price**

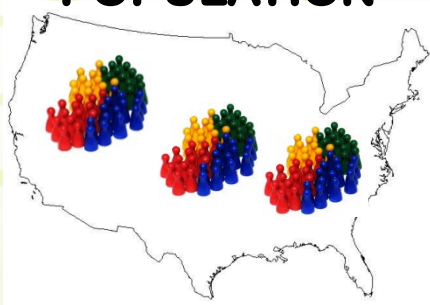
Users/Buyers



RADARS System Denominators

COUNTS BY SYSTEM

UNITED STATES POPULATION



= **POPULATION RATE**

- Tried and true
- Disease burden on whole population
- Does not account for drug availability

COUNTS BY SYSTEM

URDD



=

UNIQUE RECIPIENTS OF DISPENSED DRUG (URDD) RATE

- Number of unique people filling prescription for drug
- Accounts for availability of drug in community
- Relates events to corresponding patient benefit

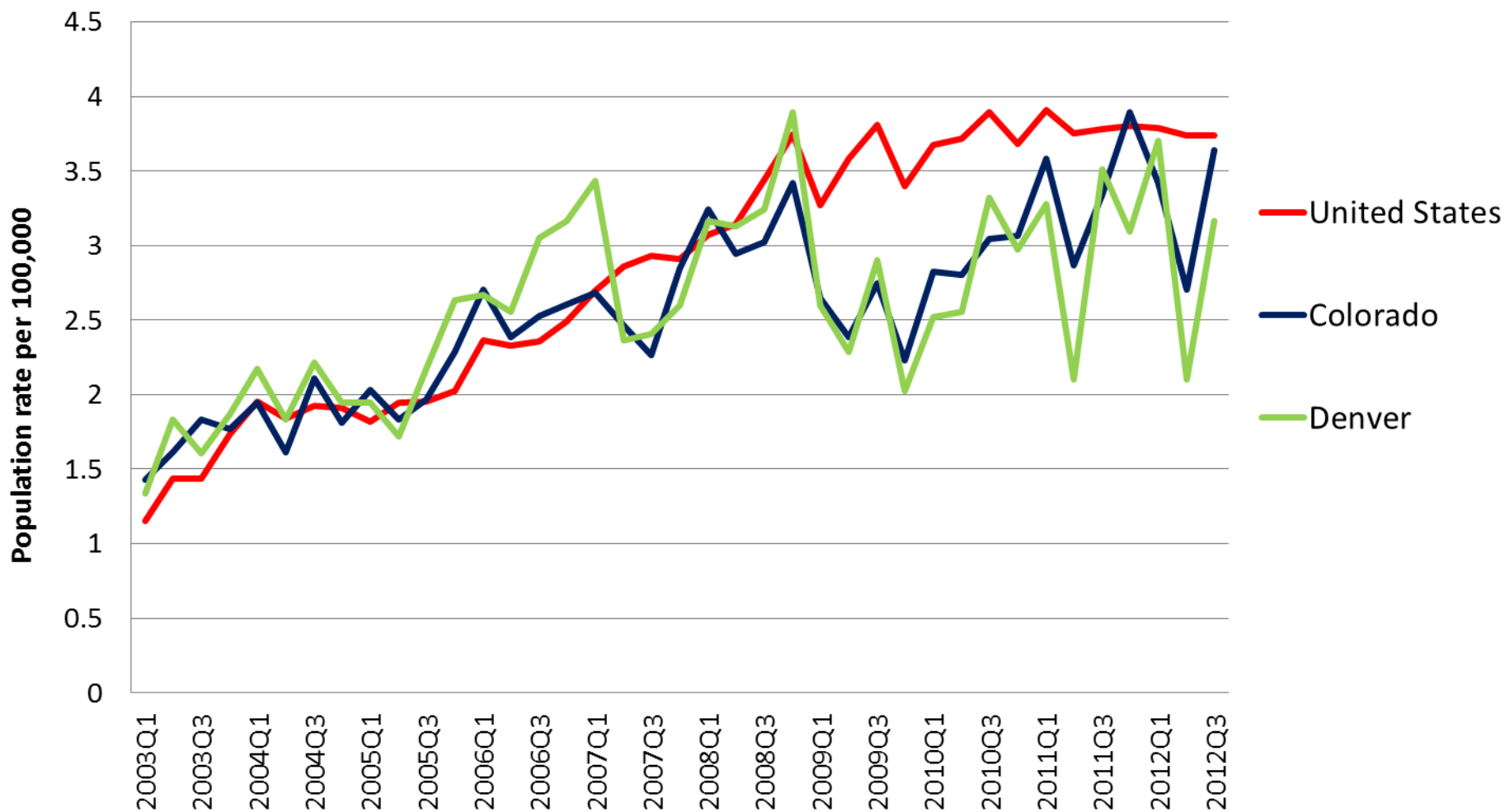
RADARS[®] System Colorado Data Prescription Opioids



The RADARS® System Poison Center Program

Population Rates per 100,000 by region

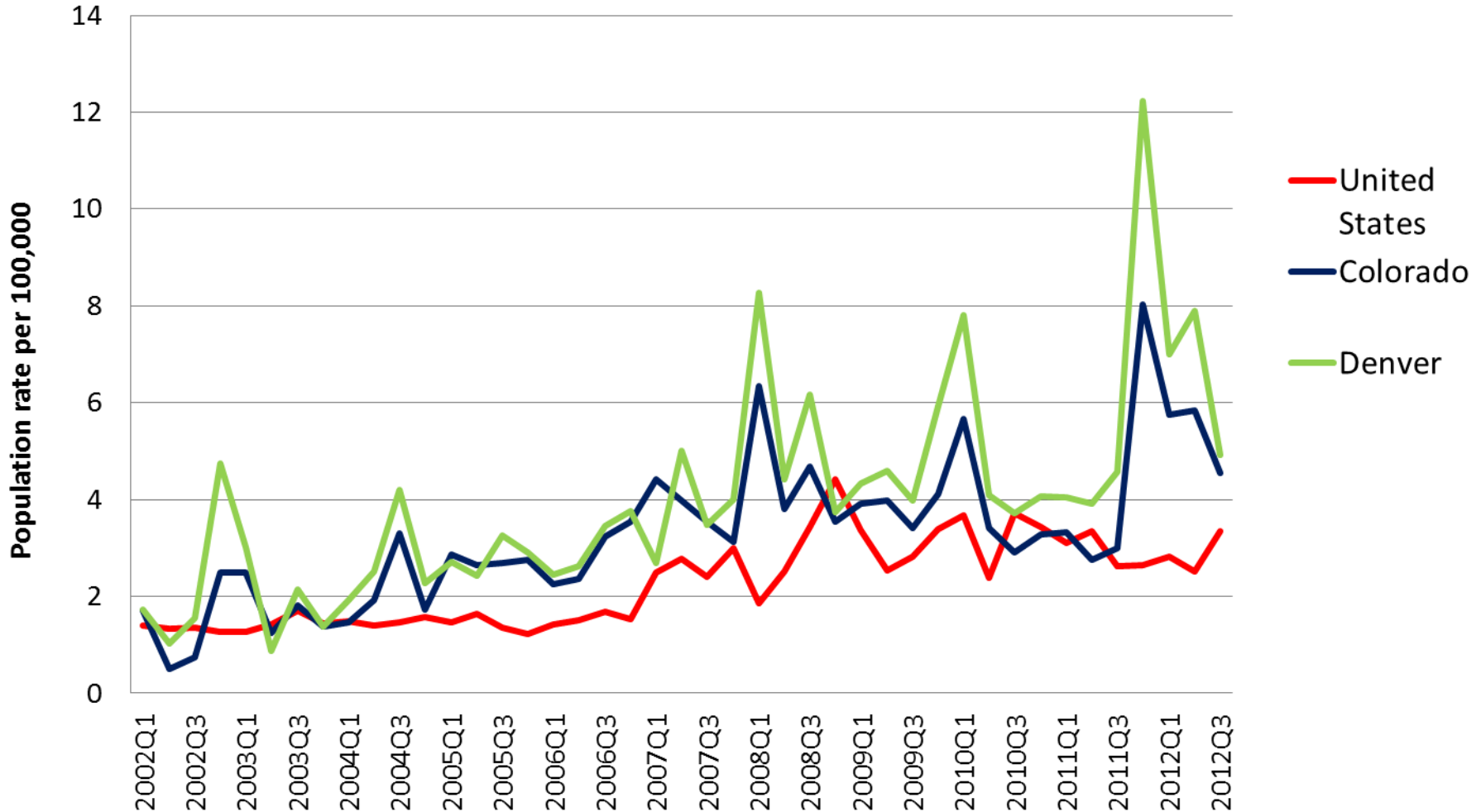
1st Quarter 2003 through 3rd Quarter 2012



The RADARS® System Drug Diversion Program

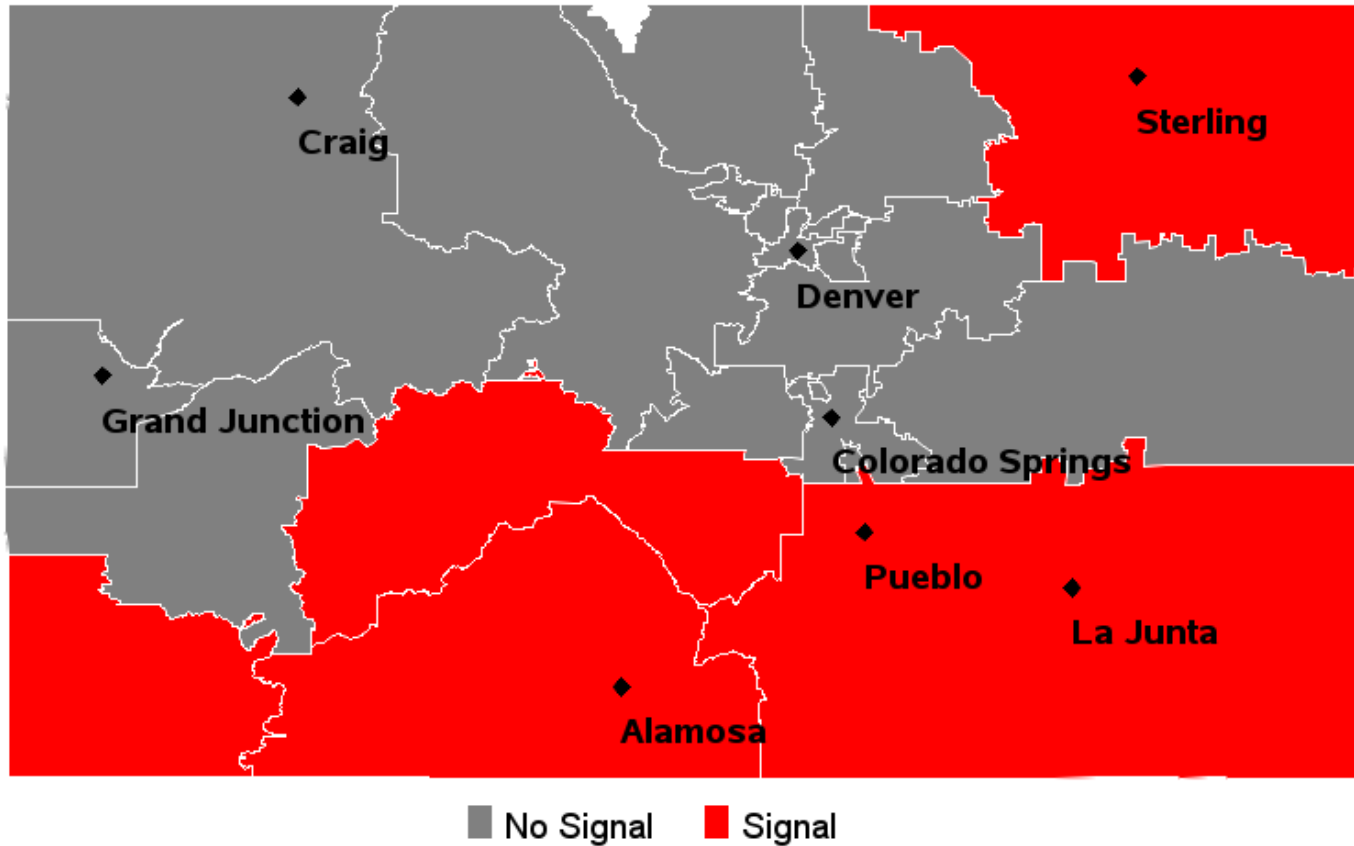
Population Rates per 100,000 by region

1st Quarter 2002 through 3rd Quarter 2012



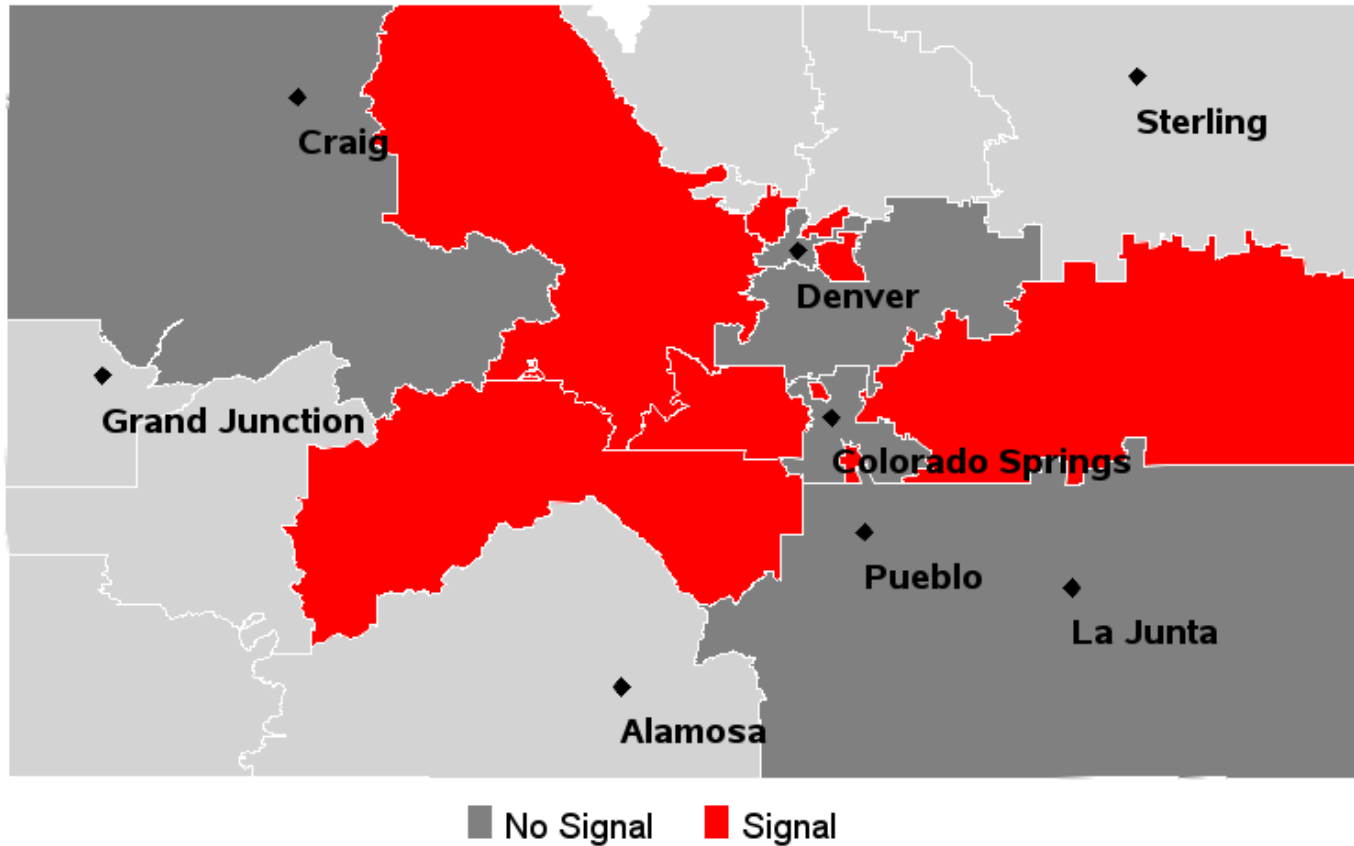
Poison Center Oxycodone Signals

3rd Quarter 2011 – 2nd Quarter 2012



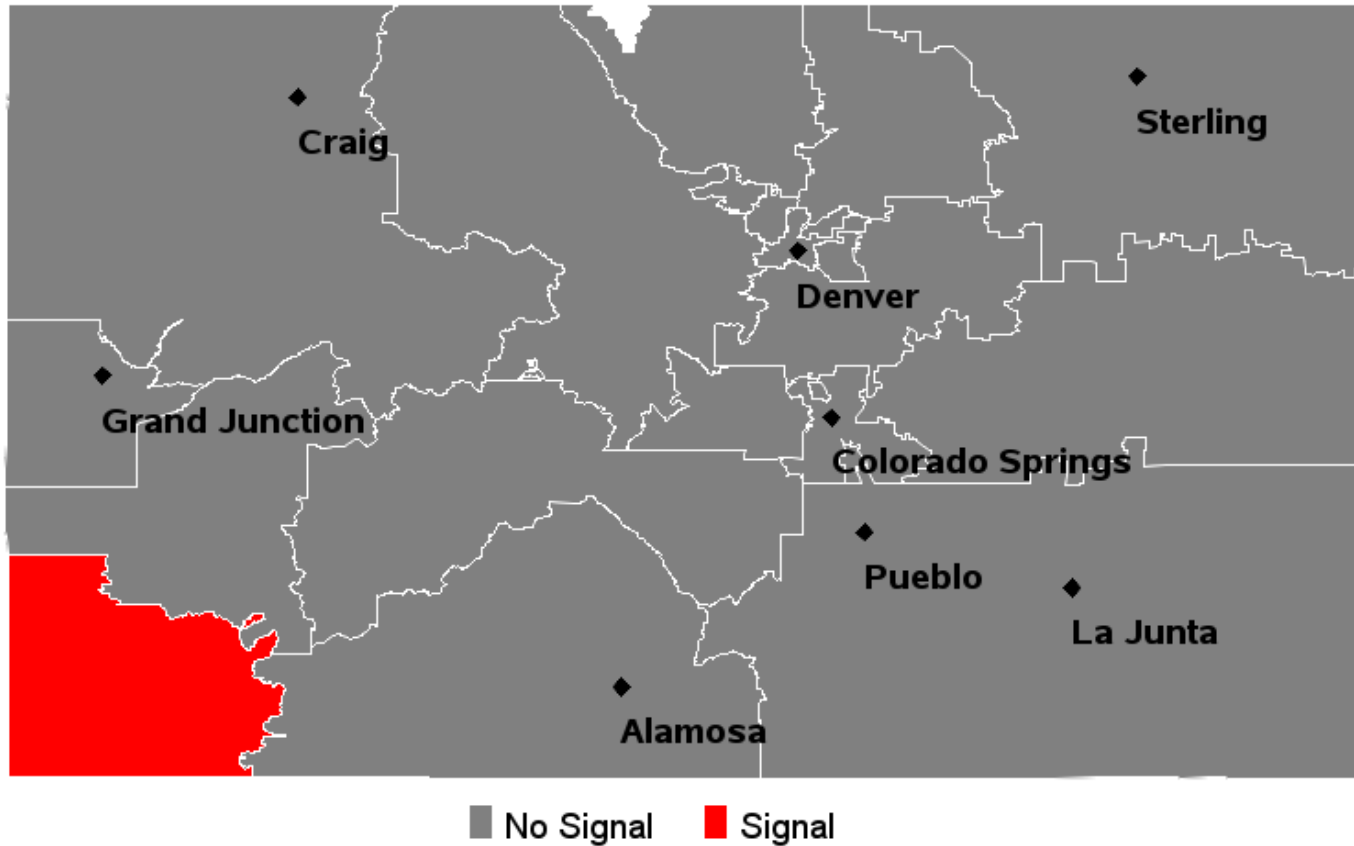
Drug Diversion Oxycodone Signals

3rd Quarter 2011 – 2nd Quarter 2012



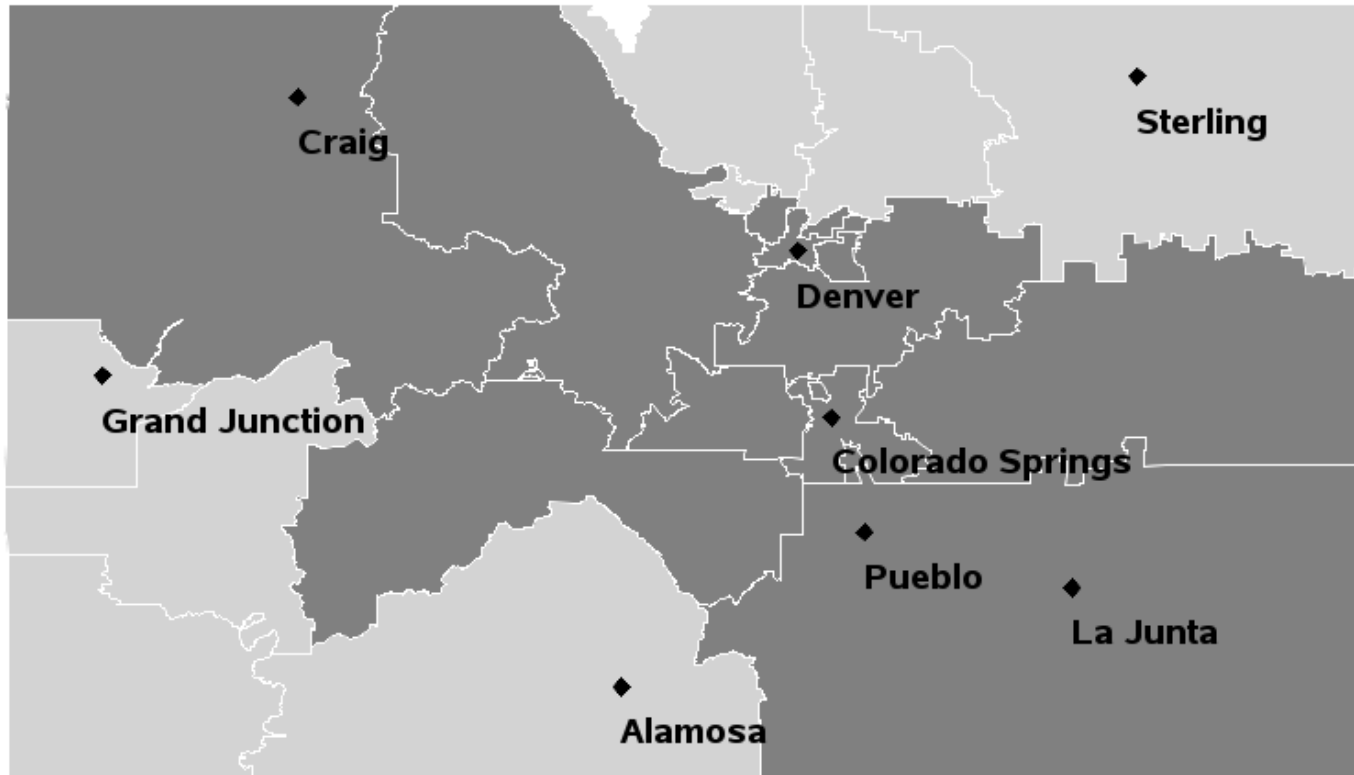
Poison Center Hydrocodone Signals

3rd Quarter 2011 – 2nd Quarter 2012



Drug Diversion Hydrocodone Signals

3rd Quarter 2011 – 2nd Quarter 2012

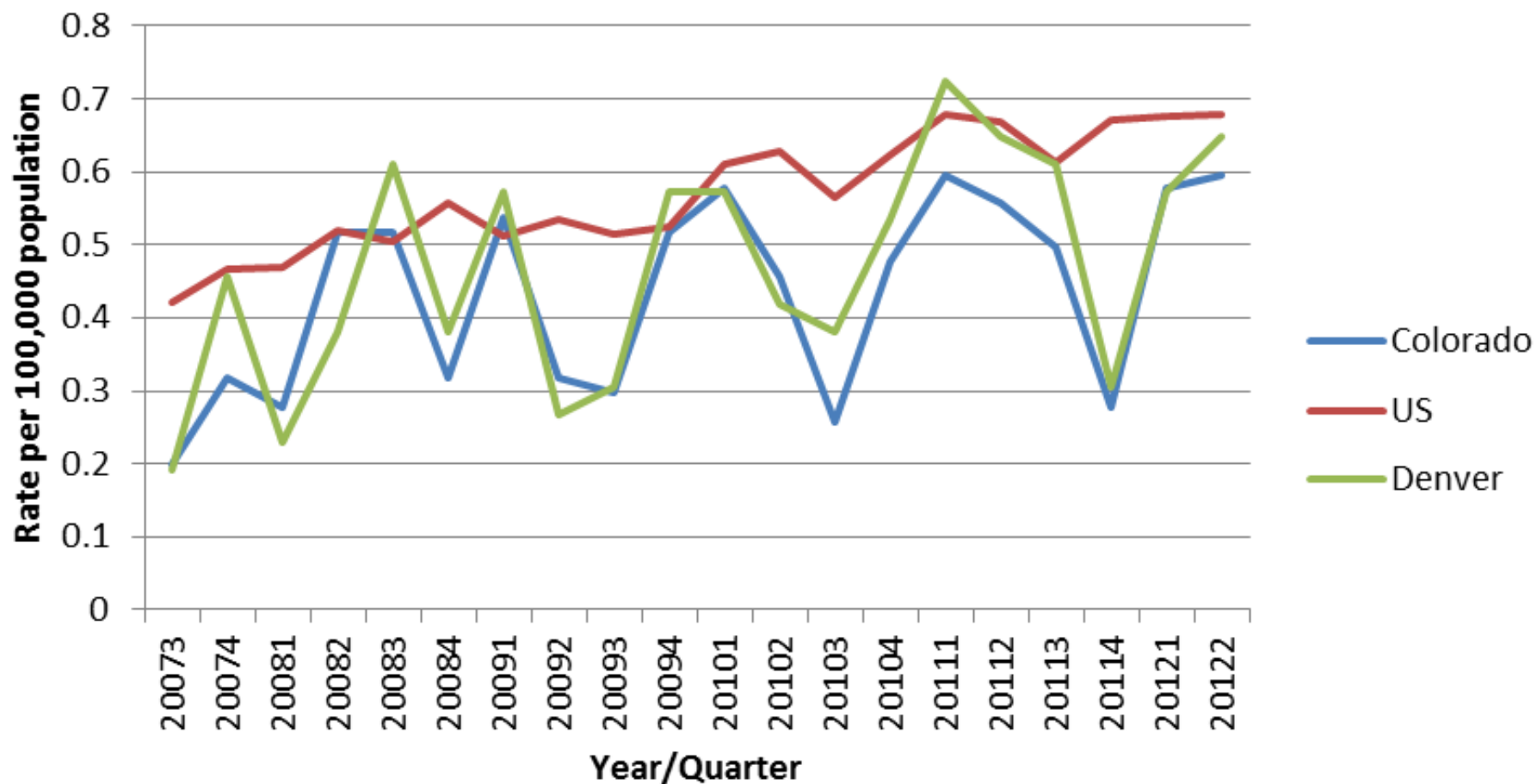


■ No Signal

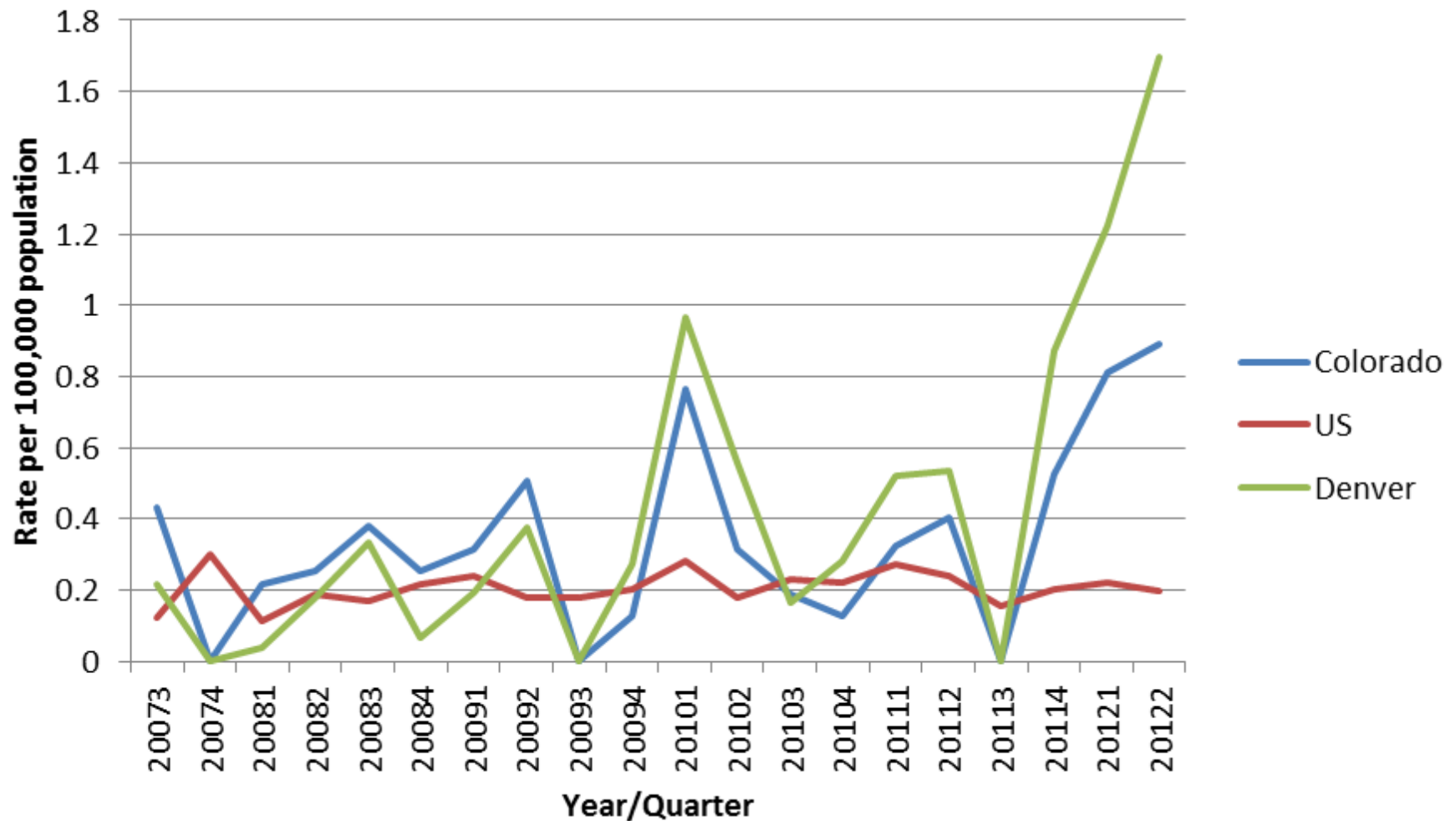
RADARS® System Colorado Data Stimulants



**The RADARS® System Poison Center Program
Intentional Exposures per 100,000 population
by location
From 3rd quarter 2007 to 2nd quarter 2012**



The RADARS® System Drug Diversion Program
Diversions per 100,000 population
by location
From 3rd quarter 2007 to 2nd quarter 2012



Colorado Summary

- Opioid abuse
 - Poison Center calls related to abuse are **similar to or lower than** national rates
 - Drug diversion investigations are similar to or higher than national rates
 - Oxycodone signals are detected in several Colorado regions
 - Minimal signals related to hydrocodone abuse

Colorado Summary: Opioids

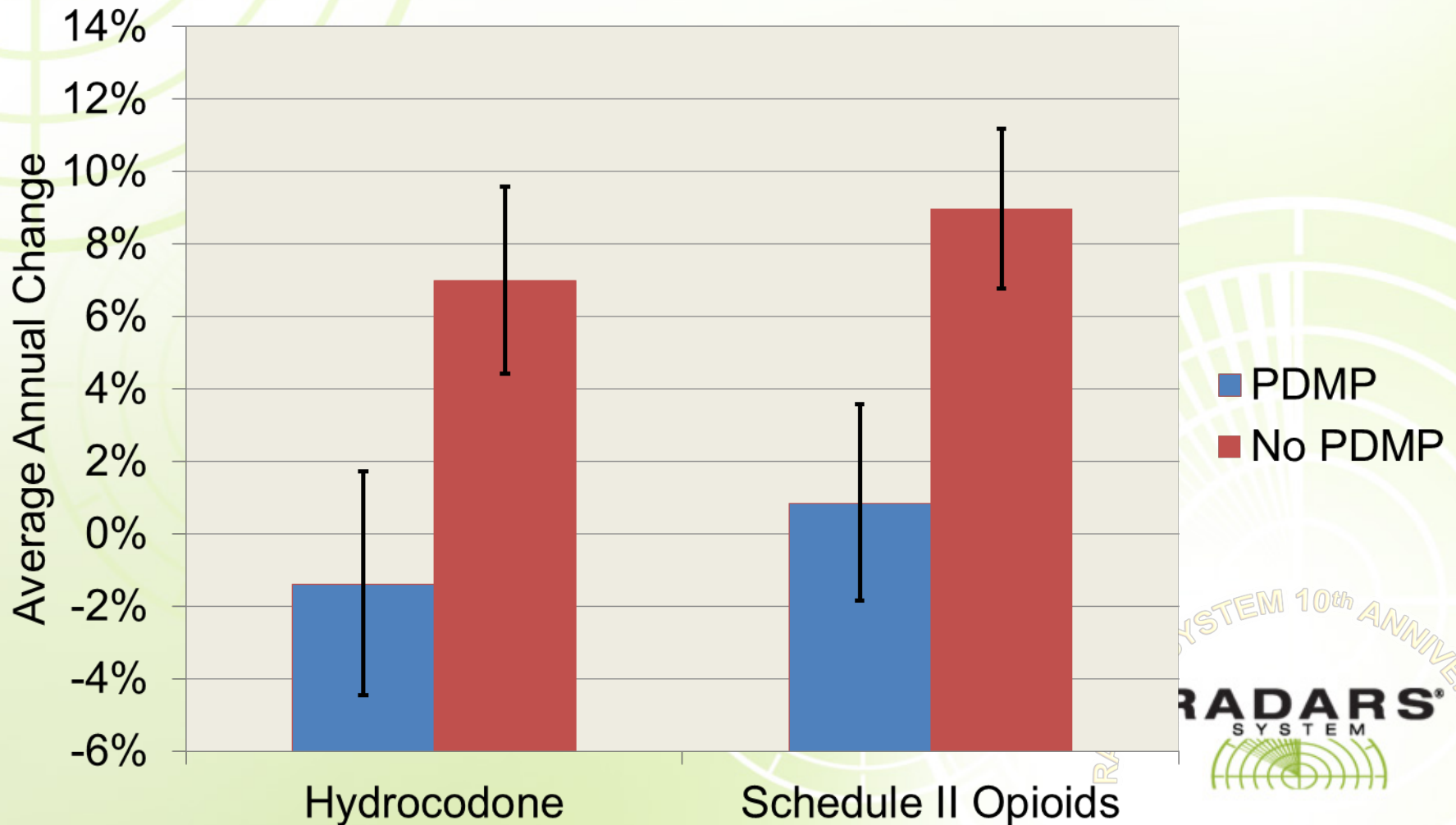
- Poison center call rates are **similar to or below** national rates
- Drug diversion investigation are **similar to or slightly higher than** national rates
- Oxycodone signals are detected in several regions
- Few hydrocodone signals

Colorado Summary: Stimulants

- Poison center call rates are consistently **at or below** national rates
- Drug diversion investigation rates have increased rapidly in the past 12 months, and now **greatly exceed** national rates

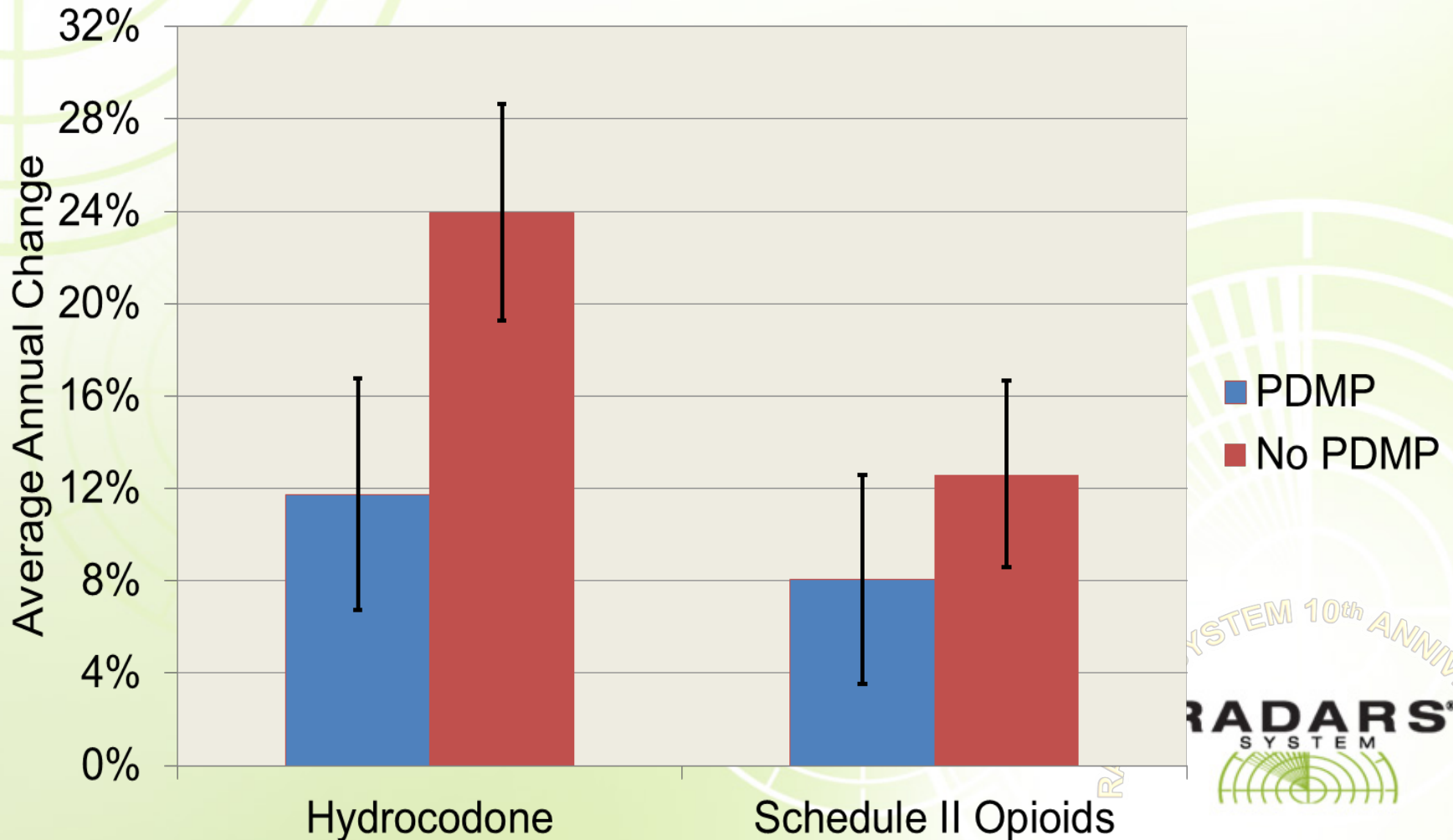
Prescription Drug Monitoring Programs

Intentional Abuse Reports – Poison Center Program



Prescription Drug Monitoring Programs

Prescription Opioid Abuse Mentions – Treatment Programs



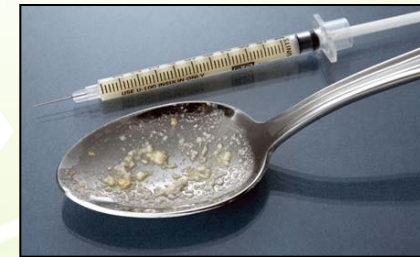
Abuse Deterrent OxyContin



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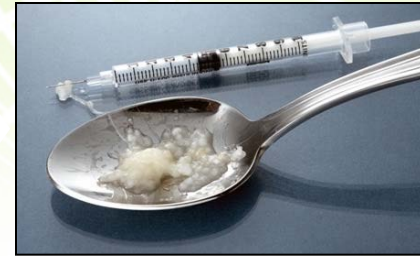
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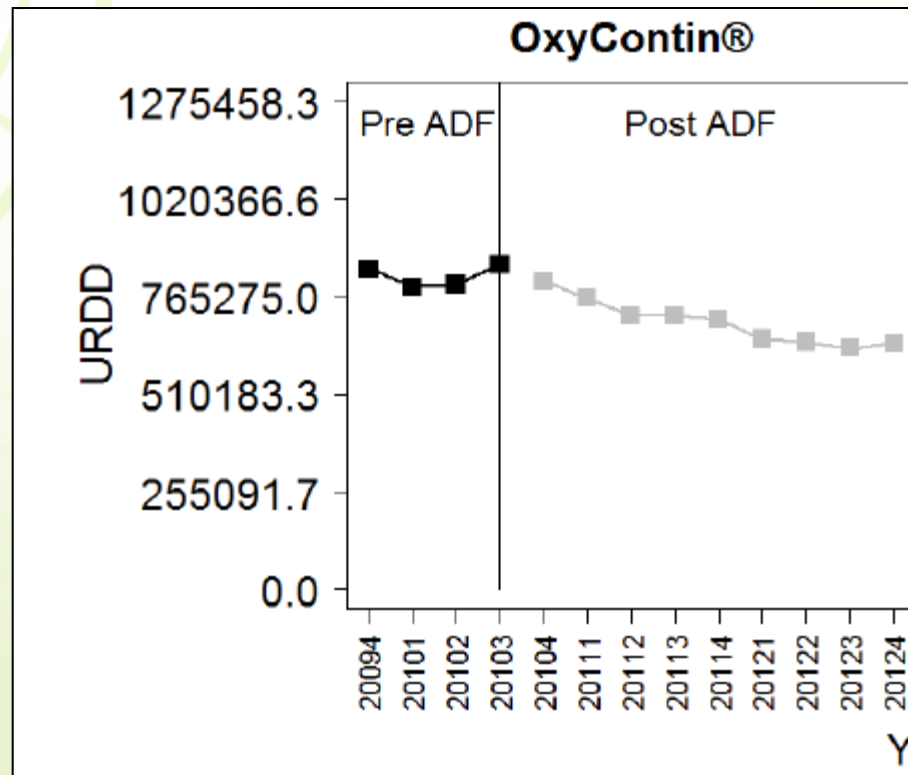
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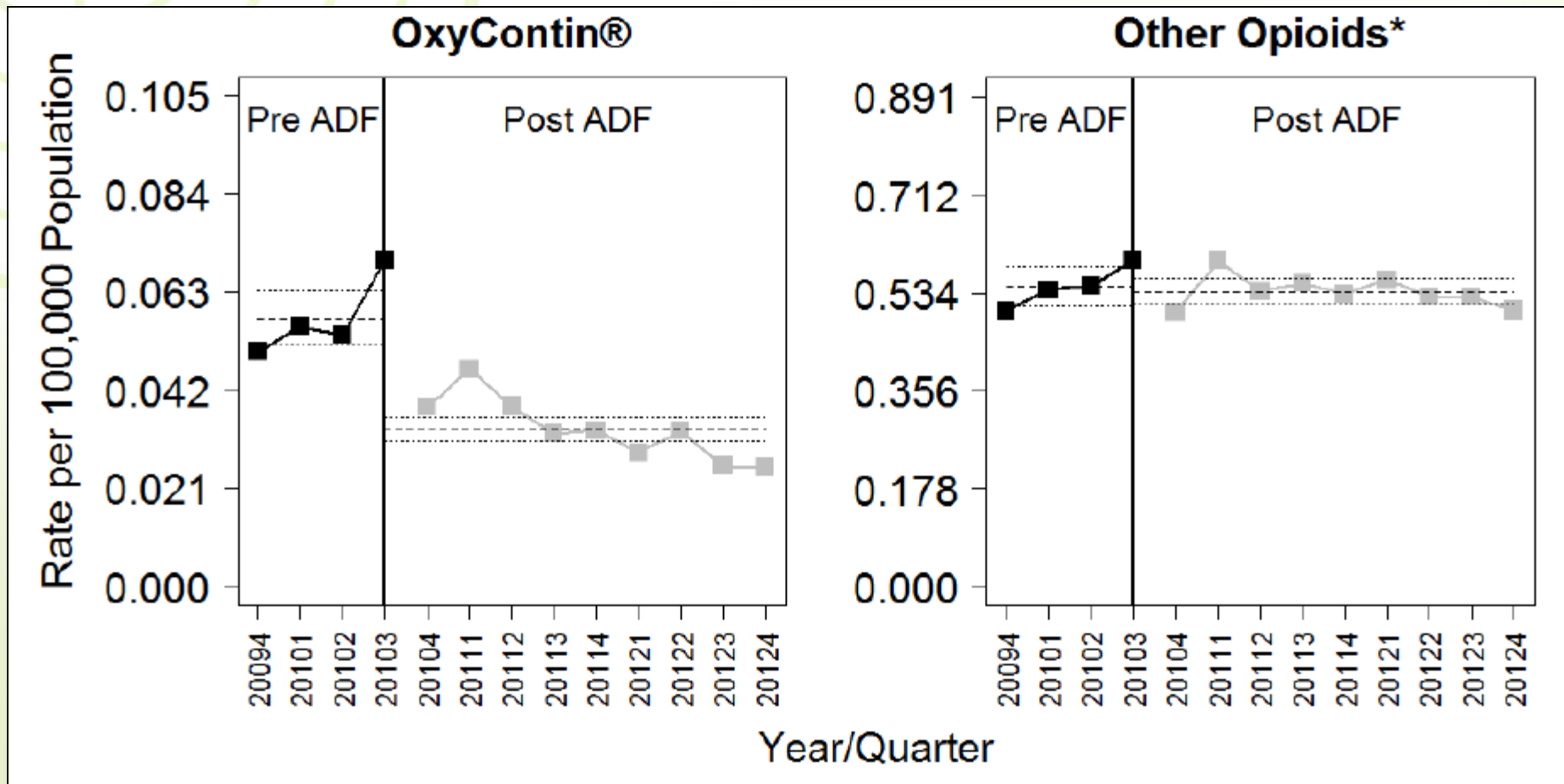
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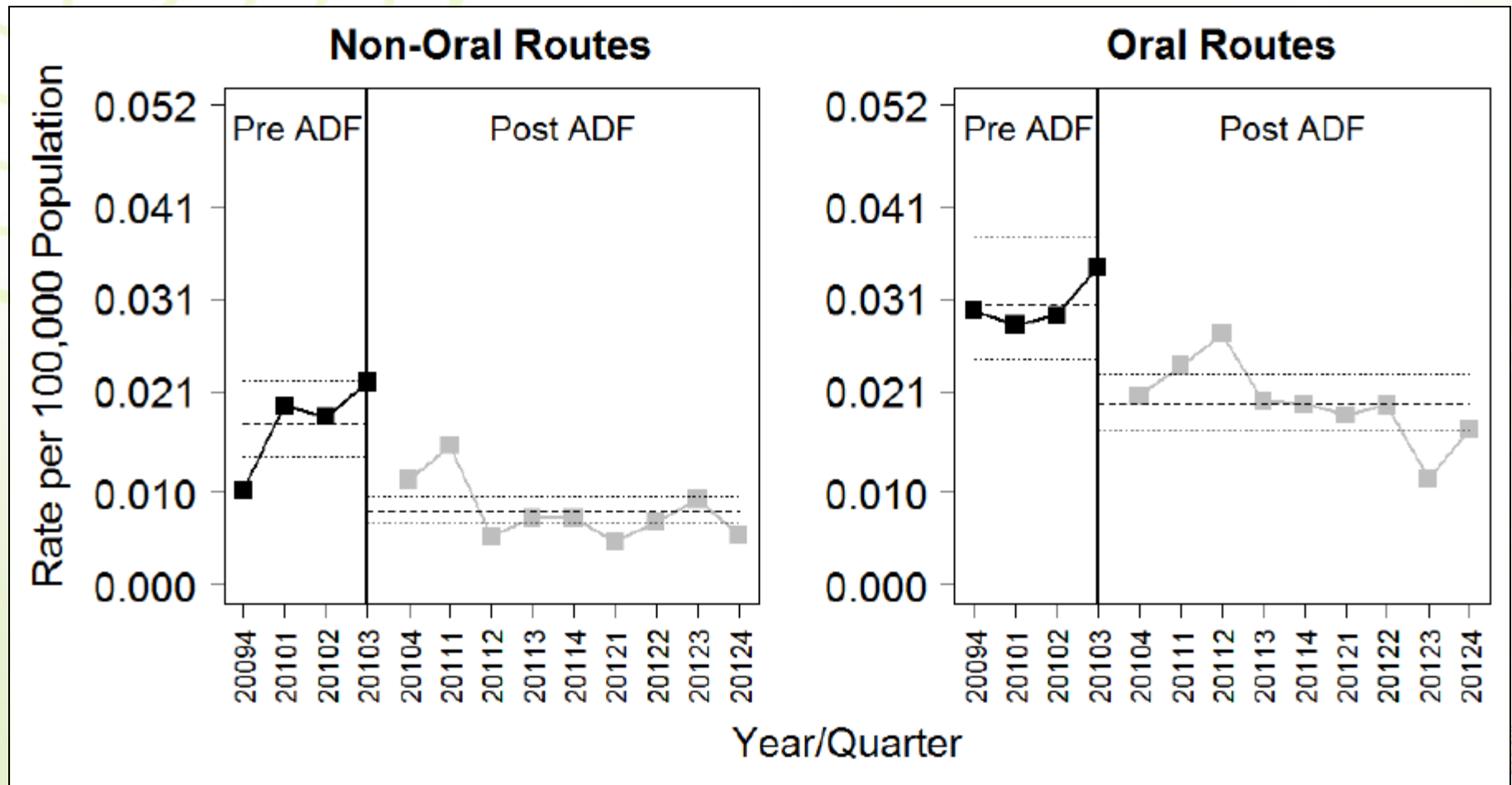
Sales Decreased 15%



Intentional Abuse Calls to Poison Centers Down 42%



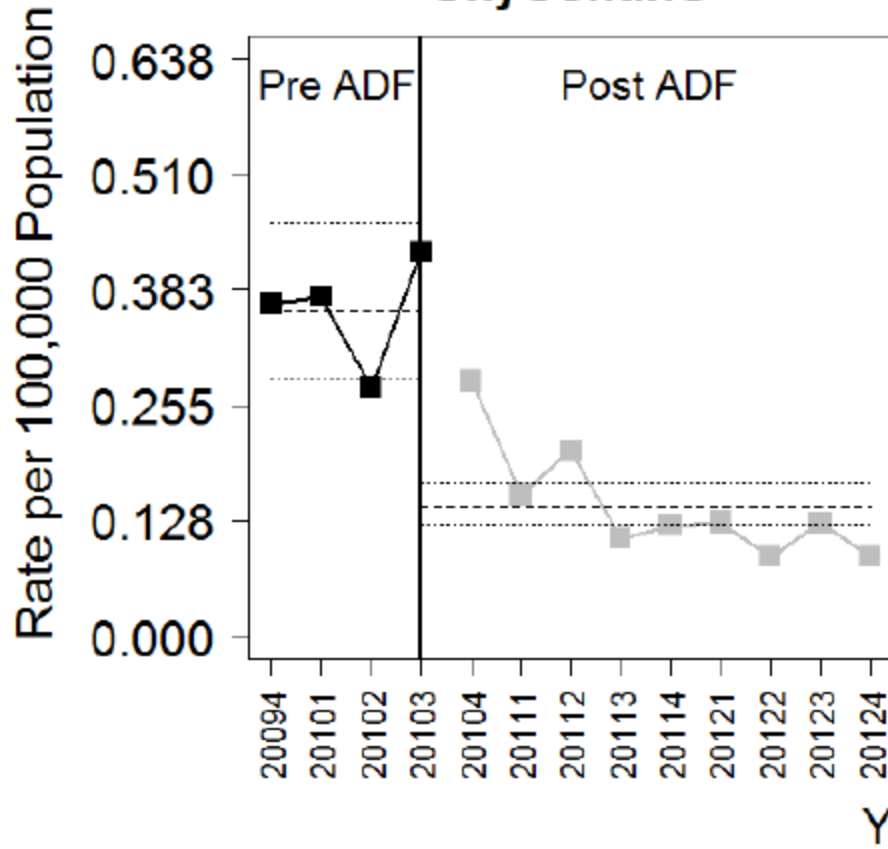
More Decrease by Non-Oral Routes than Oral Routes



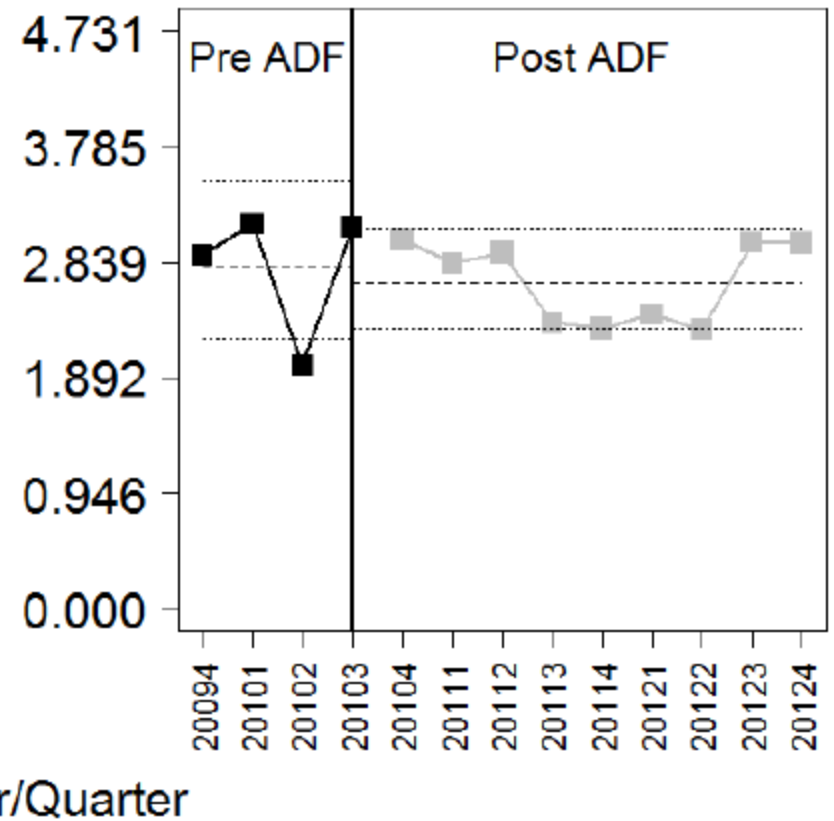
54% vs 35%; interaction $p = 0.093$

Drug Diversion Cases Down 60%

OxyContin®



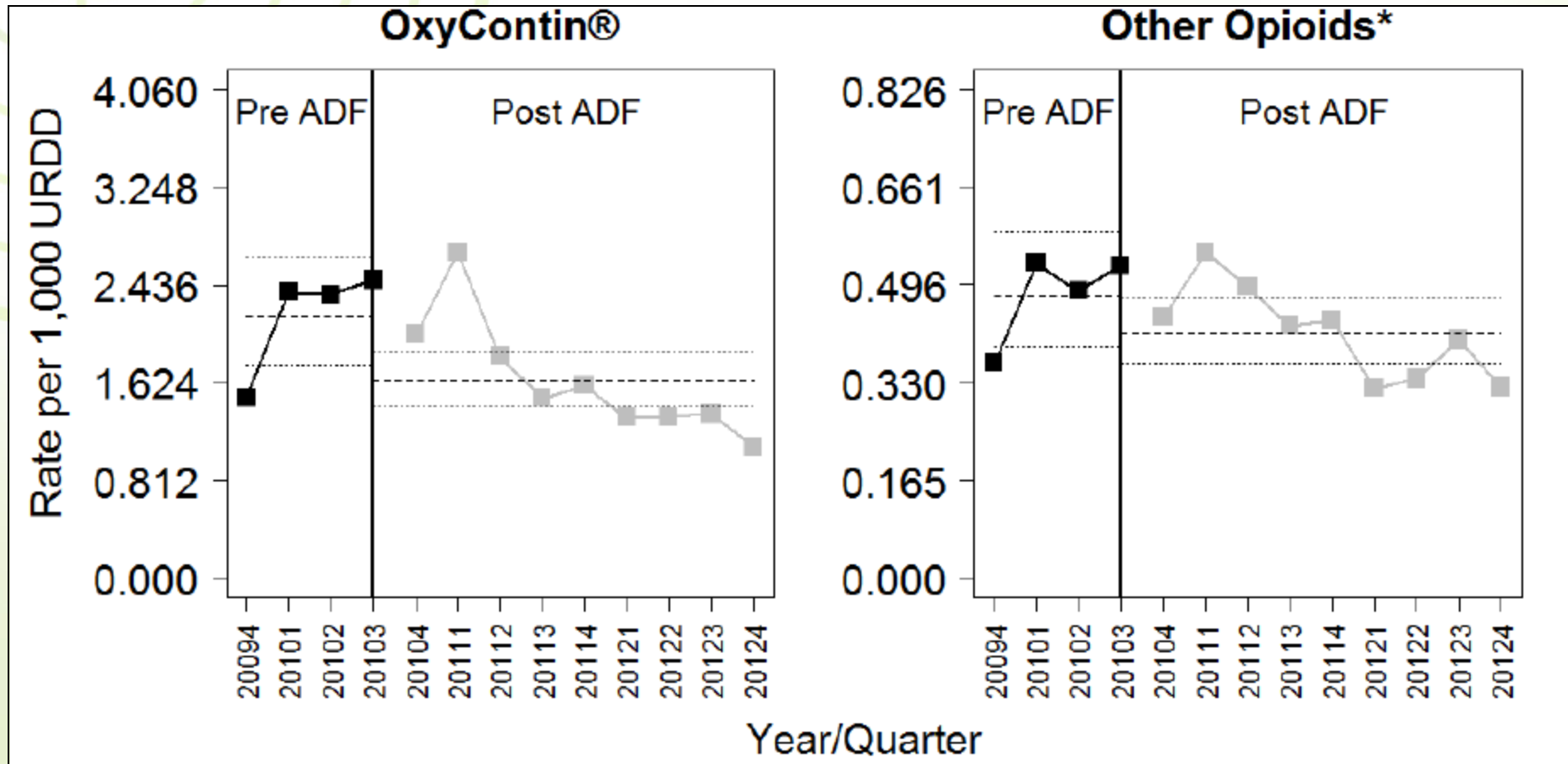
Other Opioids*



ADF is Worth Less on the Street

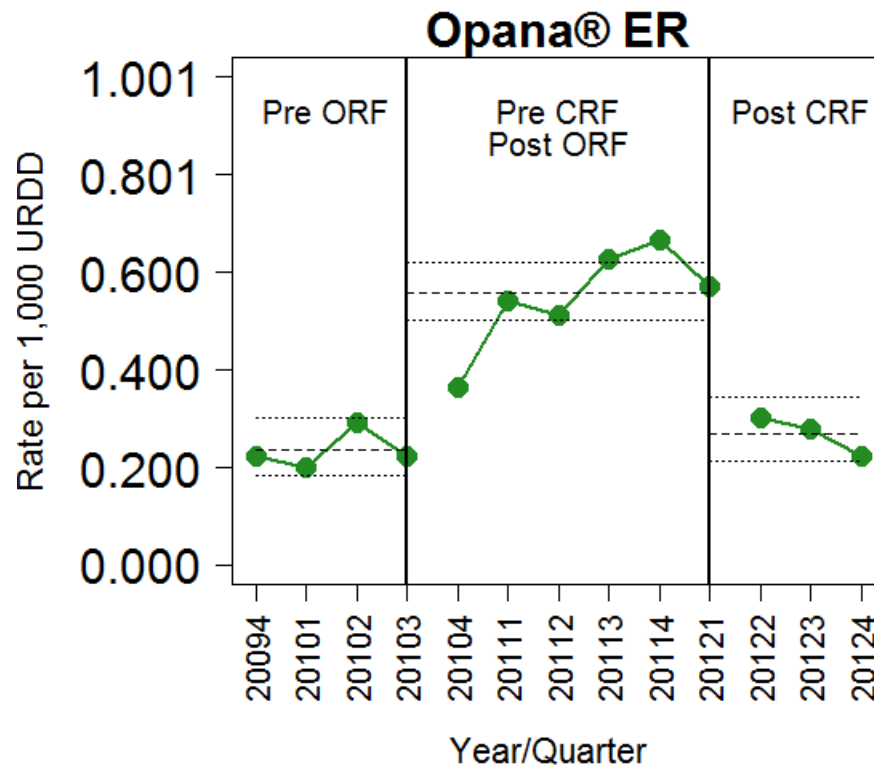
Product	Street Price Median (IQR) \$US / mg
OxyContin OC (non-ADF)	\$1.00 (\$0.63, \$1.25)
OxyContin OP (ADF)	\$0.63 (\$0.50, \$1.00)

Endorsements by Patients Entering Treatment Down 24%

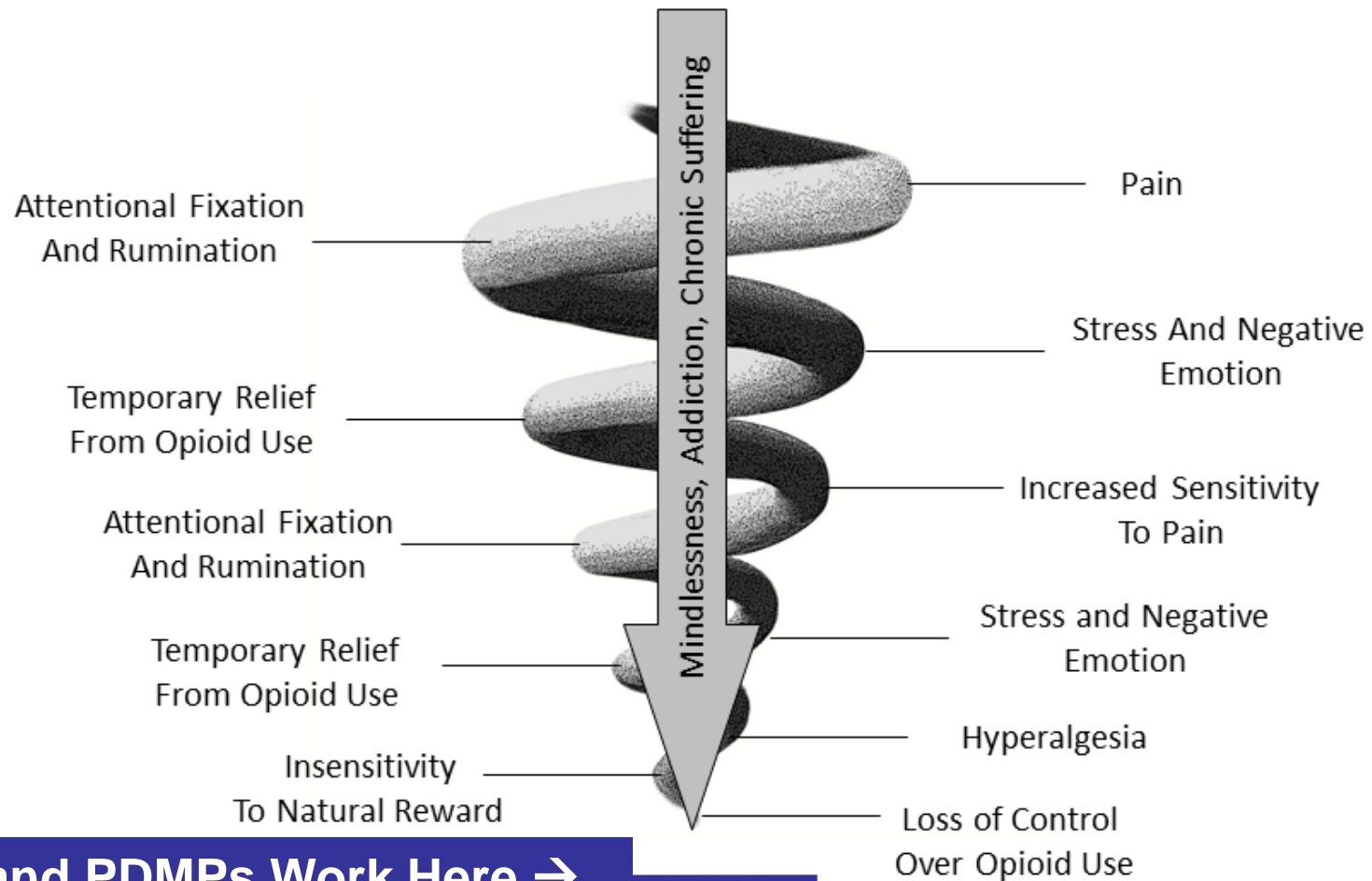


Squeezing the Balloon

The RADARS System Poison Center Program Intentional Abuse Cases: Opana ER Rate per 1,000 URDD



Downward Spiral of Chronic Pain, Stress, and Addiction



Other Interventions

- Community awareness
- Provider education
- Resilience training
- Enhanced PDMPs
- Improved access to treatment
- Drug courts



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