

# Prescription Opioid Dependence and Addiction: Experience in the United States

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**Richard C. Dart, MD, PhD**

**Director, Rocky Mountain Poison and Drug Center**

**Professor, University of Colorado**

# Prescription Opioid Misuse & Diversion

- Outline of Presentation
  - Brief RADARS® System Methodology
  - Trends with abuse deterrent formulations & market changes
- Researched Abuse, Diversion And Addition Related Surveillance (RADARS® System)
  - Denver Health
  - Non-profit
  - Funded by subscriptions from pharmaceutical companies

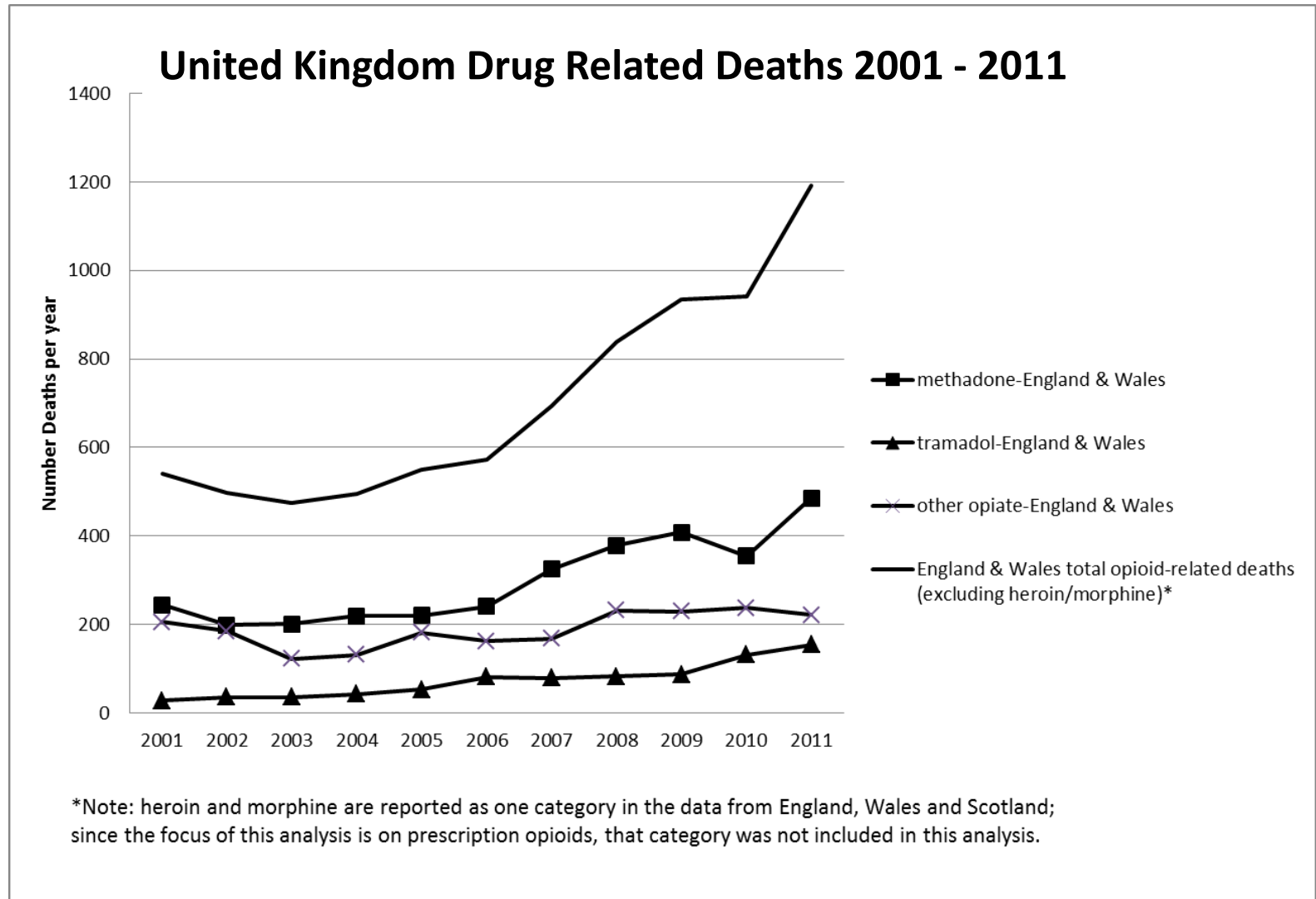
## Drug-Related Fatalities Top Deaths From Motor Vehicle Accidents

By [Join Together Staff](#) | September 19, 2011 | [2 Comments](#) | Filed in [Drugs & Prescription Drugs](#)



# Current Data on Prescription Opioid Abuse in Colorado and the United States

# Prescription Opioid Deaths - International Challenge



M



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# RADARS System Mosaic

**Acute Events**

53 Poison  
Centers  
46 States

**Drug  
Transactions**

Criminal Justice  
280 investigator  
50 states

**Entering  
Treatment**

OTP  
73 programs  
33 states

**Entering  
Treatment**

SKIP  
125 practices  
50 states

**New  
Initiates**

College Survey  
2000 students  
50 States

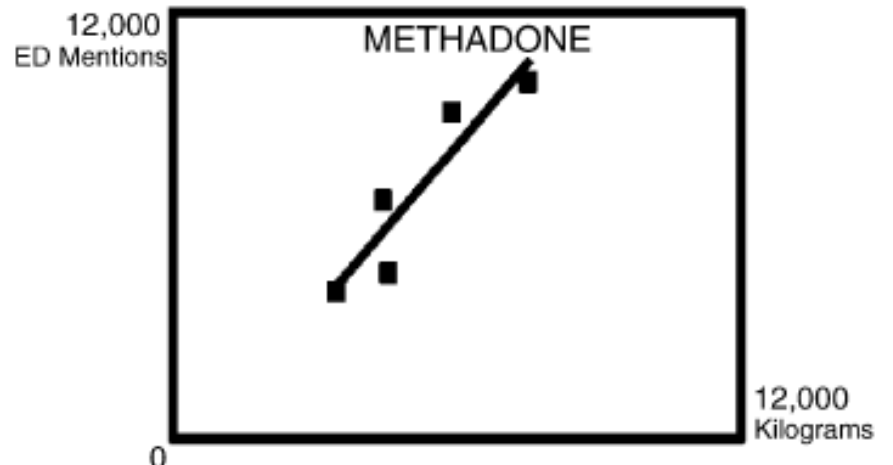
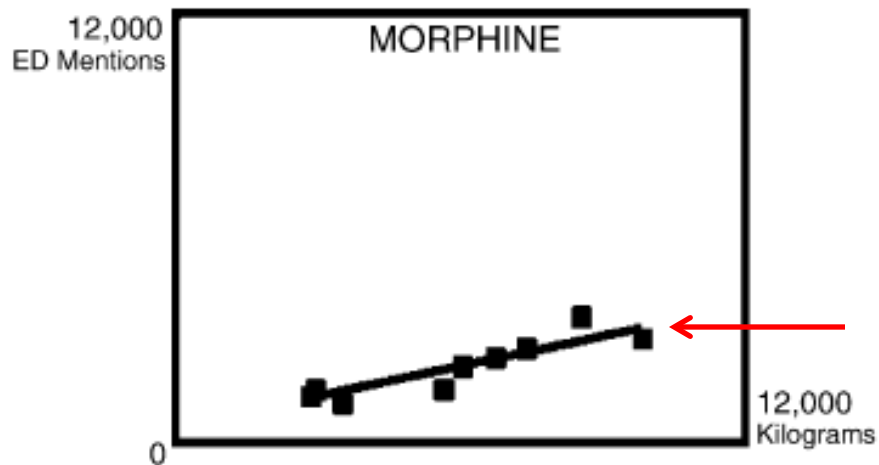
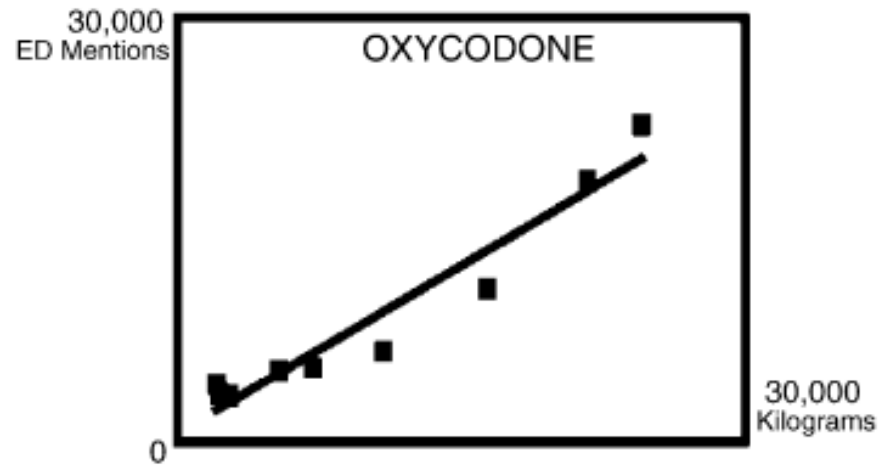
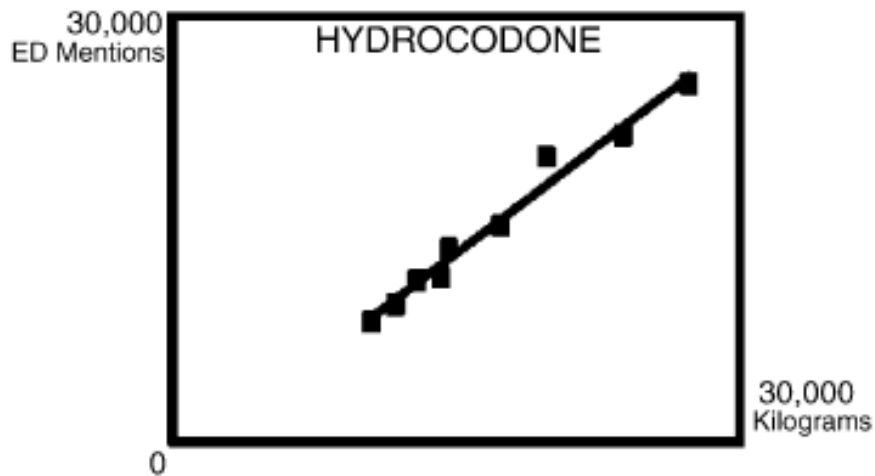
**Illicit Market  
Price**

StreetRx.com  
Users/Buyers  
50 states



**WHICH OPIOIDS ARE ABUSED AND  
DIVERTED?**

# More Drug Production = More Drug Abuse





# What Drugs Are Abused?

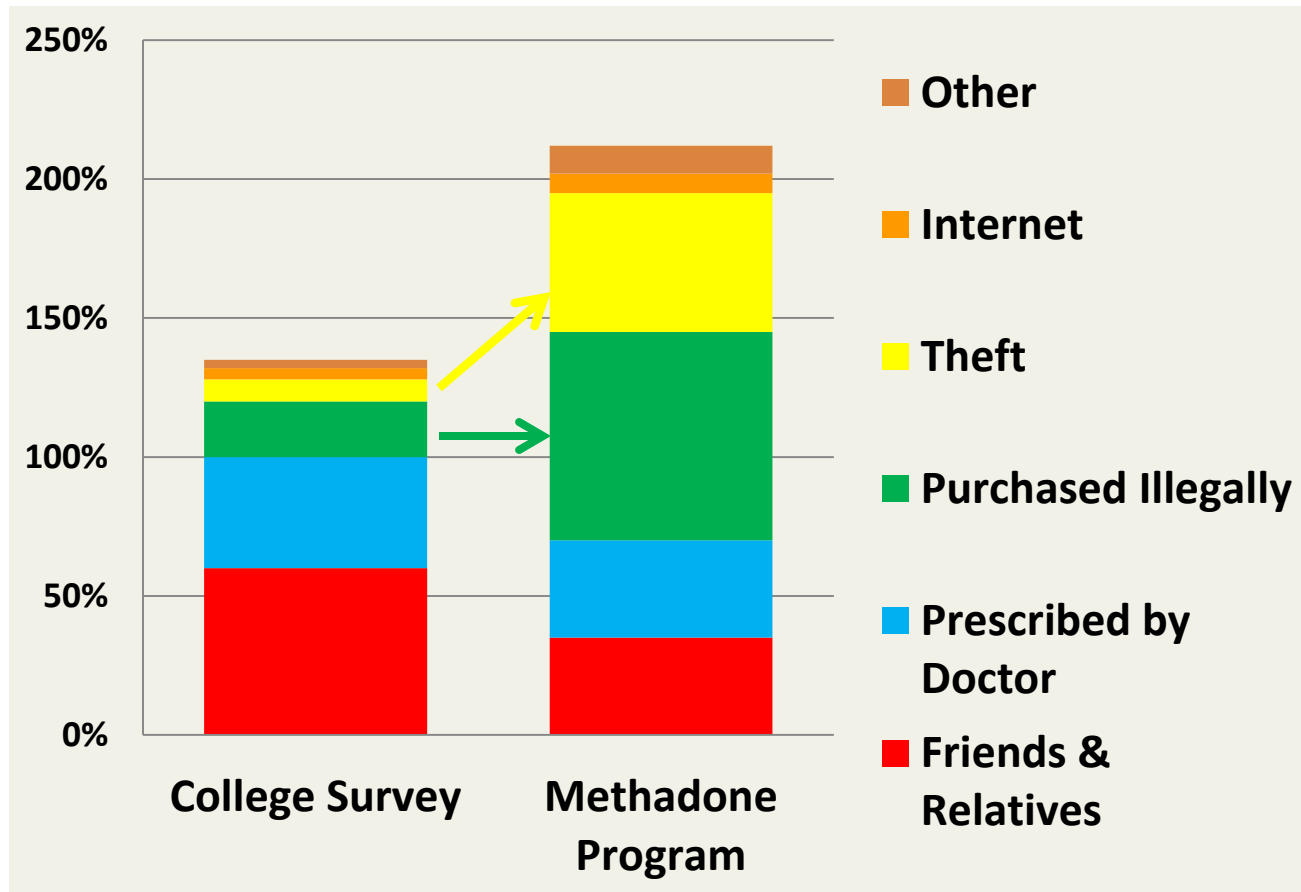
## 2011 Rate (Ranked Highest-Lowest)

Poison Center		Opioid Treatment		Survey of Key Informant Pts		Drug Diversion		College Survey	
Pop	URDD	Pop	URDD	Pop	URDD	Pop	URDD	Pop	URDD
Hydrocodon	Methadone	Oxycodon	Methadone	Hydrocod	Hydromorp hone	Oxycodon	Methadone	Hydrocodo ne	Methadone
Oxycodone	Bupren	Hydrocodo	Hydromorp hone	Oxycodon	Methadone	Hydrocodo ne	Hydromorp hone	Oxycodon	Hydromorp hone
Tramadol	Morphine	Methadone	Morphine	Morphine	Morphine	Morphine	Buprenorph ine	Morphine	Morphine
Methadone	Hydromorp hone	Morphine	Buprenorph ine	Hydromorp hone	Buprenorph ine	Buprenorph ine	Morphine	Tramadol	Fentanyl
Morphine	Fentanyl	Hydromorp hone	Fentanyl	Methadone	Fentanyl	Methadone	Oxycodon	Fentanyl	Buprenorph ine
Bupren	Tramadol	Buprenorph ine	Oxycodon	Buprenorph ine	Oxycodon	Hydromorp hone	Fentanyl	Methadone	Oxycodon
Fentanyl	Oxycodone	Fentanyl	Hydrocodo	Fentanyl	Hydrocodo ne	Tramadol	Hydrocodo ne	Buprenorph ine	Hydrocodo ne
Hydromorph one	Hydrocodo	Tramadol	Tramadol	Tramadol	Tramadol	Fentanyl	Tramadol	Hydromorp hone	Tramadol

**WHERE DO ABUSERS GET THEIR  
DRUGS?**

# RADARS<sup>®</sup> System

## Source of Abused Opioid, 2008



# Underground Website Lets You Buy Any Drug Imaginable

BY ADRIAN CHEN, GAWKER 

06.01.11 2:25 PM

 Like 11k

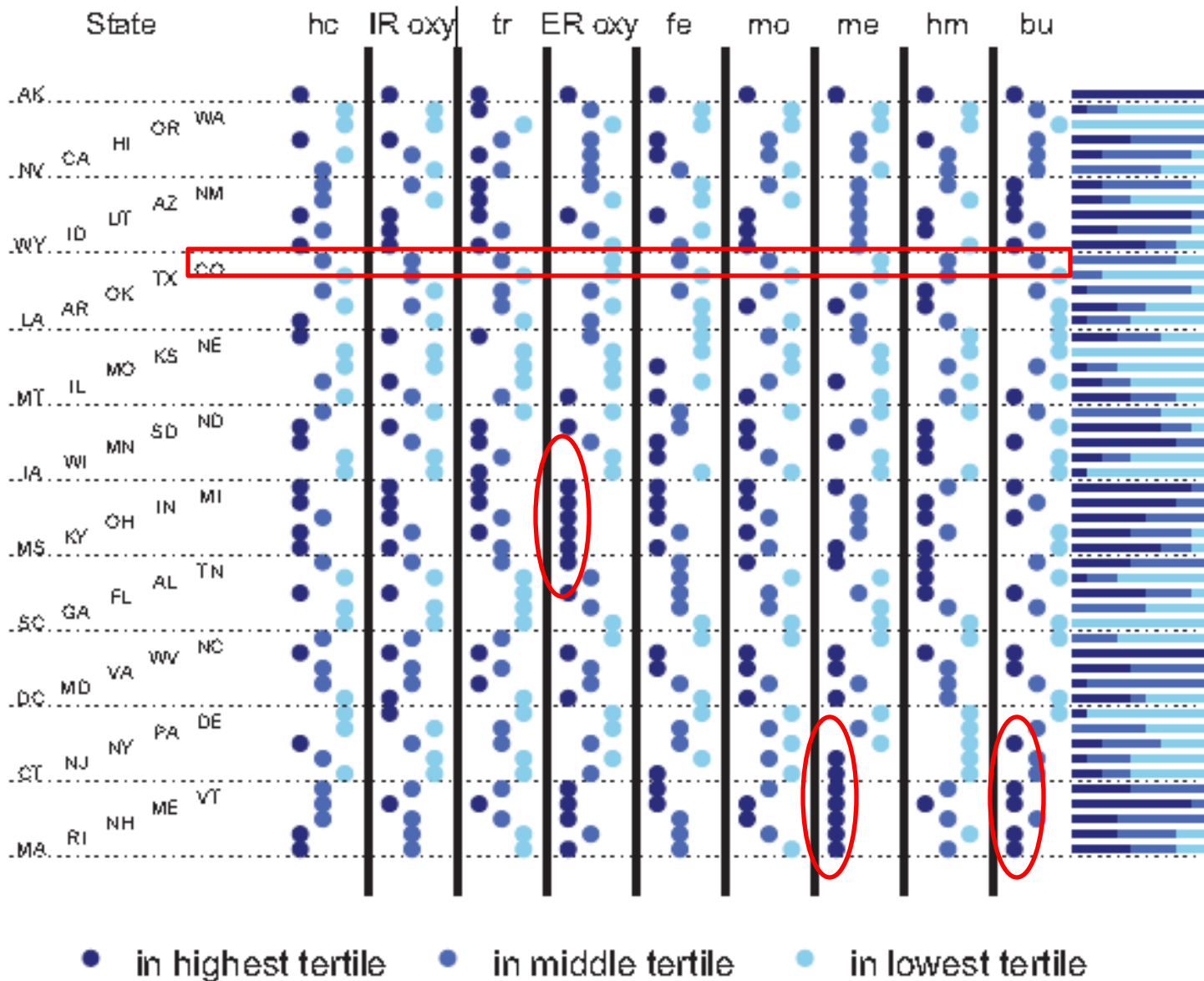
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**WHERE DO DRUG DIVERSION AND  
ABUSE OCCUR?**

# Abuse Occurs in Every 3 Digit Zip Code



# Colorado Ranking for Opioid Analgesics

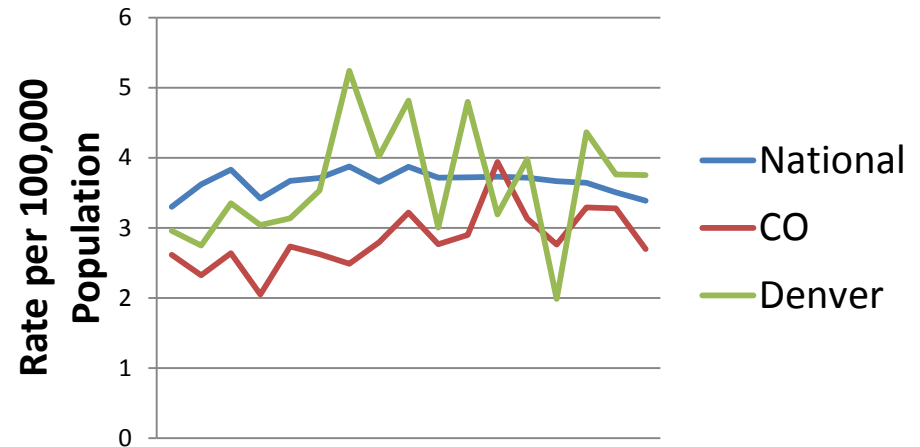
Program	Population rate	URDD rate	# states covered
OTP+SKIP	19	23	46
PC	32	35	46
DD	19	22	48
CS	7	11	45



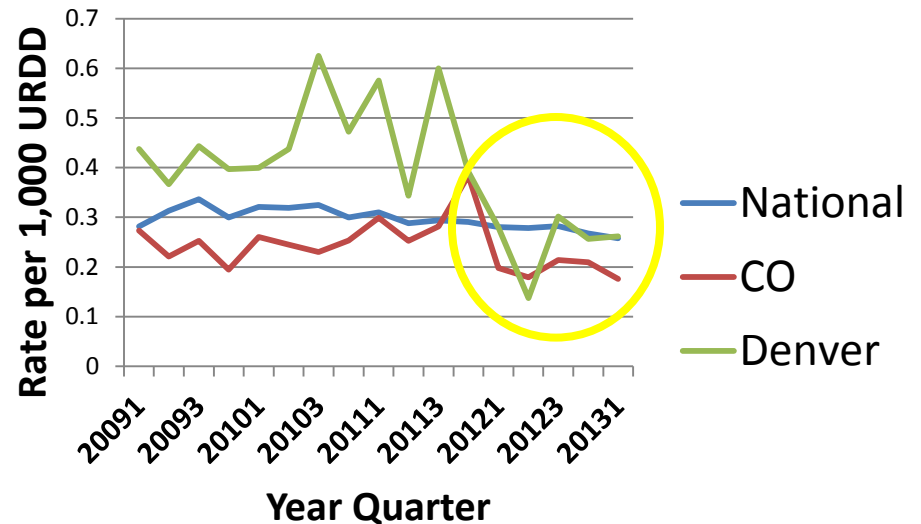
# Poison Center Program

## Prescription Opioids Combined, 2009 – 2013

**Population**



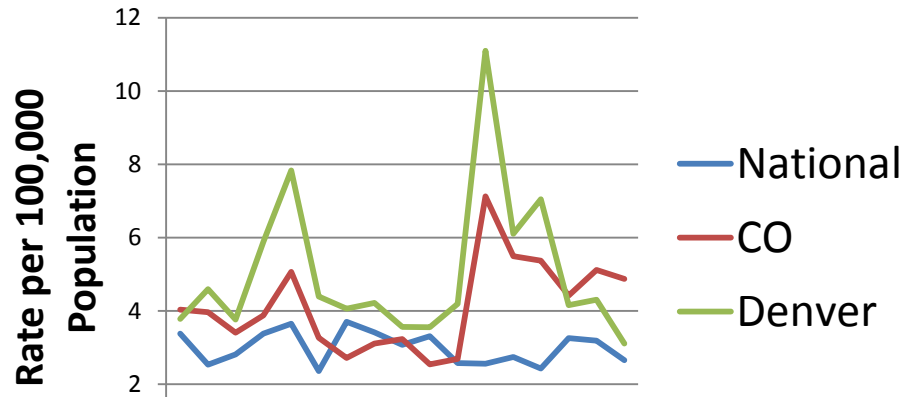
**URDD**



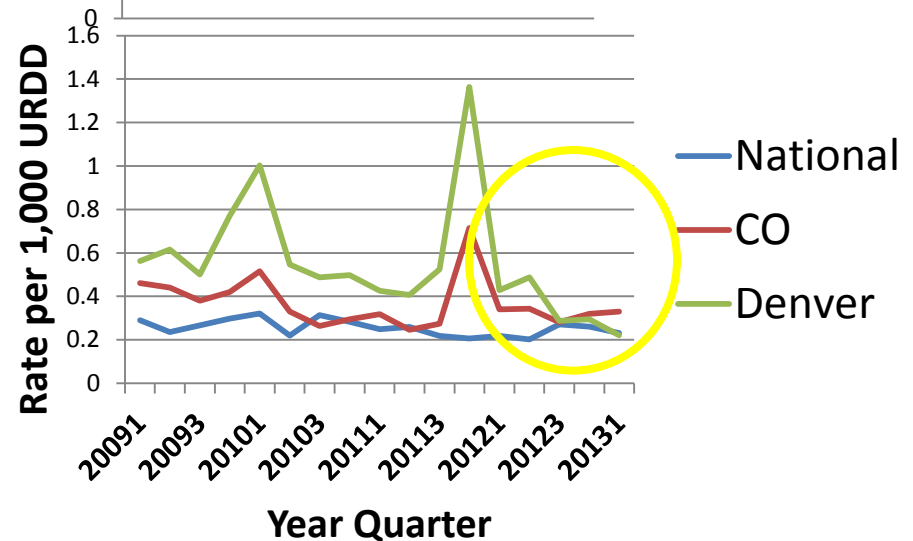
# Drug Diversion Program

## Prescription Opioids Combined, 2009-2013

Population



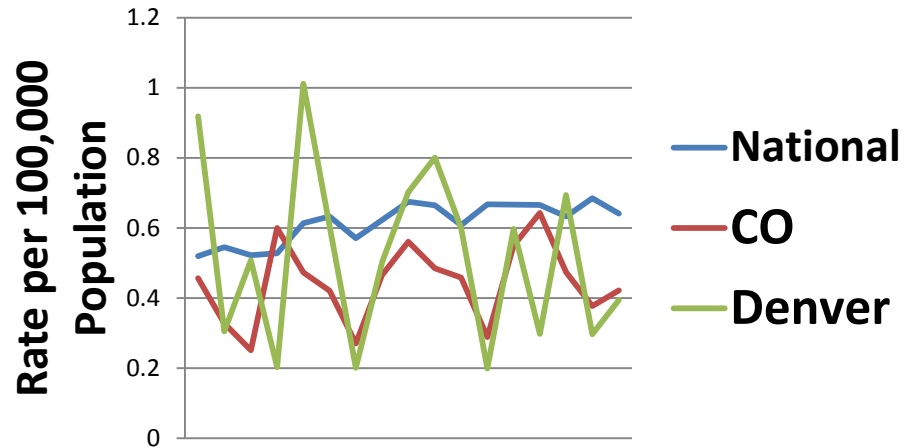
URDD



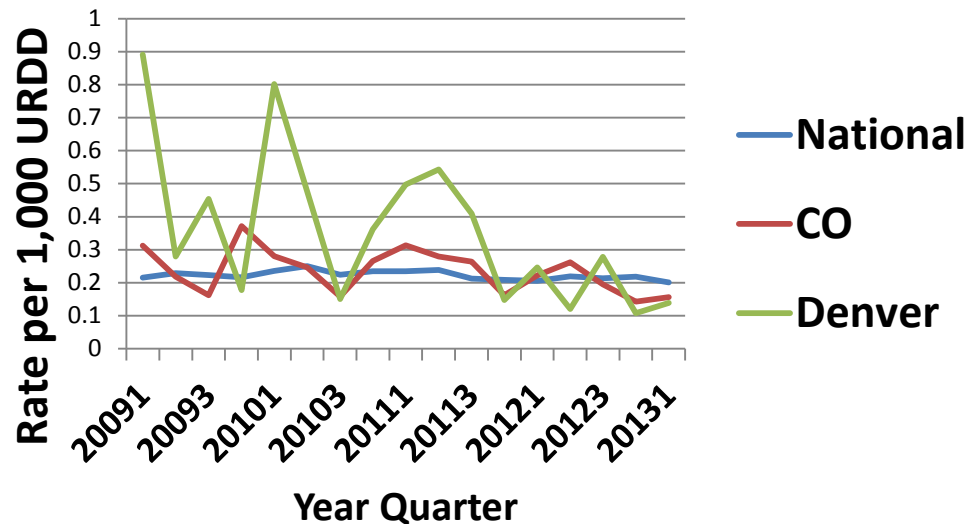
# Poison Center Program

## Prescription Stimulants Combined, 2009 – 2013

Population



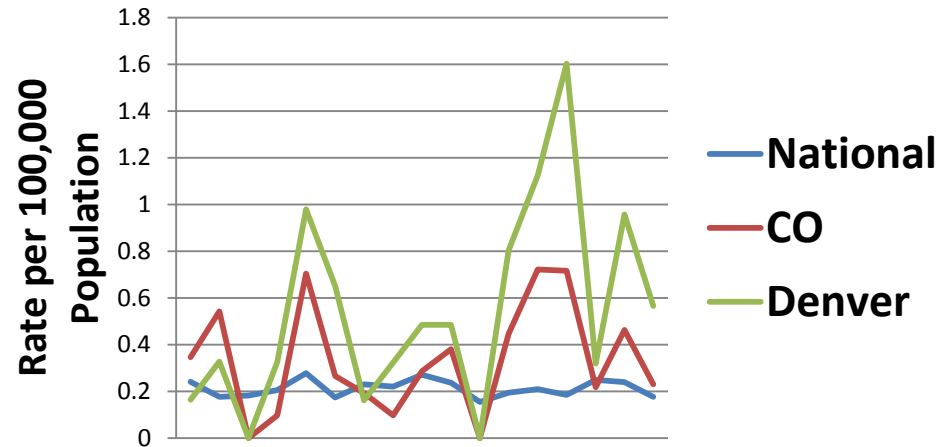
URDD



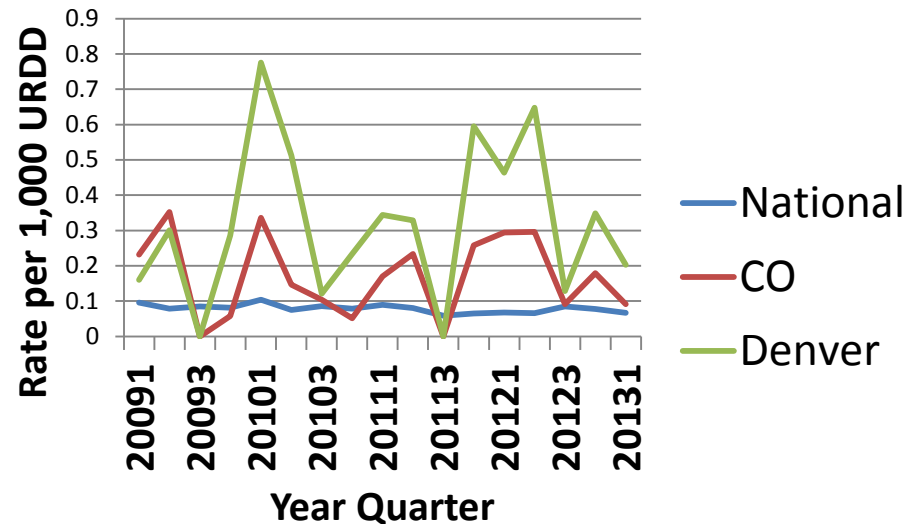
# Drug Diversion Program

## Prescription Stimulants Combined, 2009-2013

Population



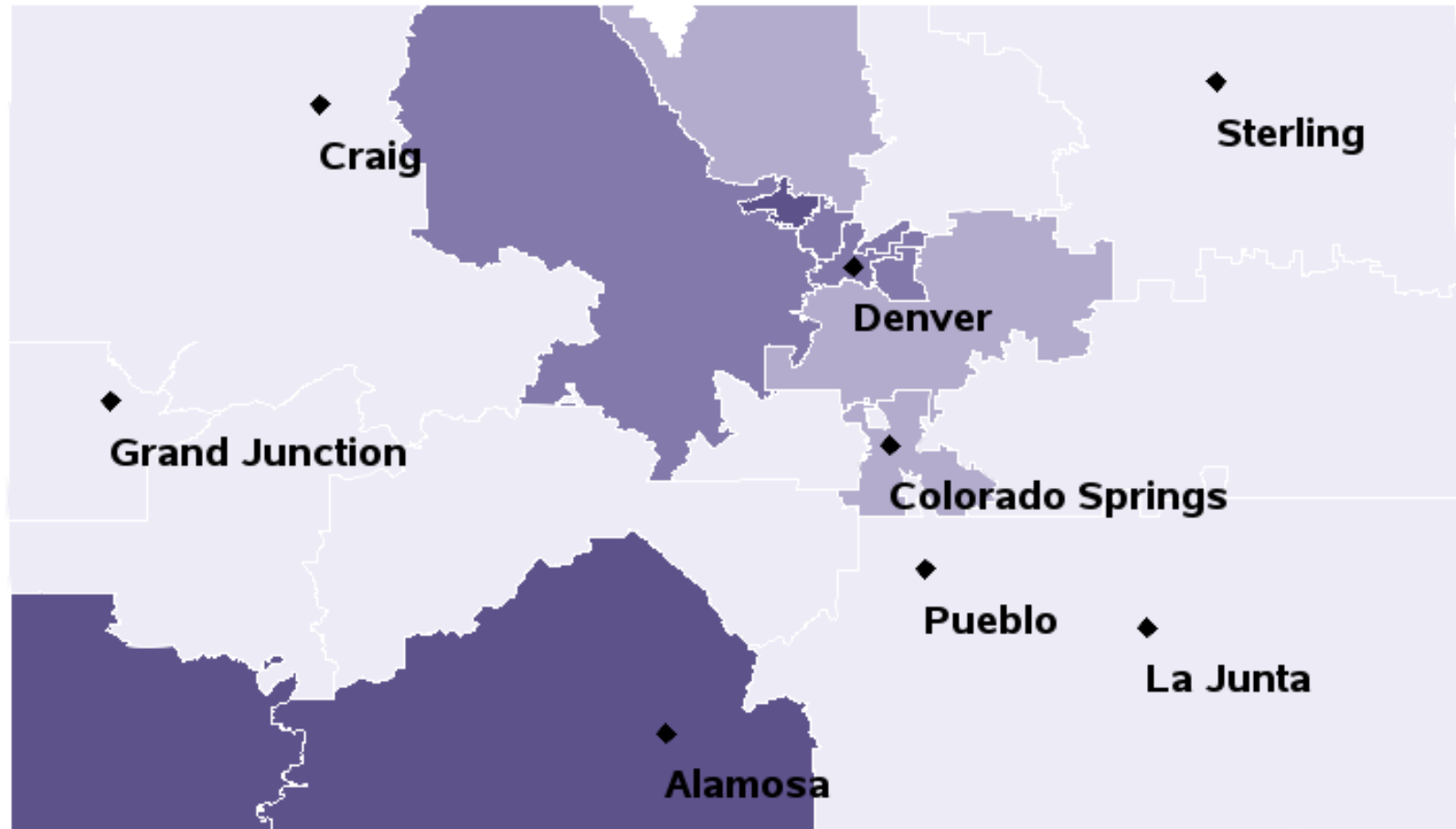
URDD



# Stimulants Rank Table

Program	Population rate	URDD rate	# states covered
PC	41	38	46
DD	25	22	40
CS	13	9	38

# Rocky Mountain Poison and Drug Center Oxycodone 12 months ending March 31, 2013



Population rate per 100,000

0.000 - 0.000

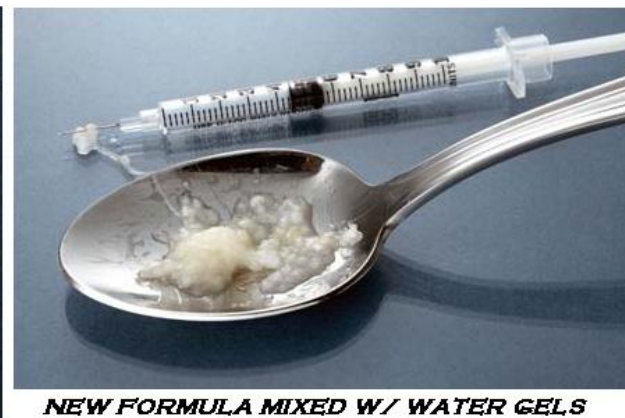
0.193 - 0.252

0.095 - 0.156

0.413 - 0.756

# Abuse Deterrent Formulations

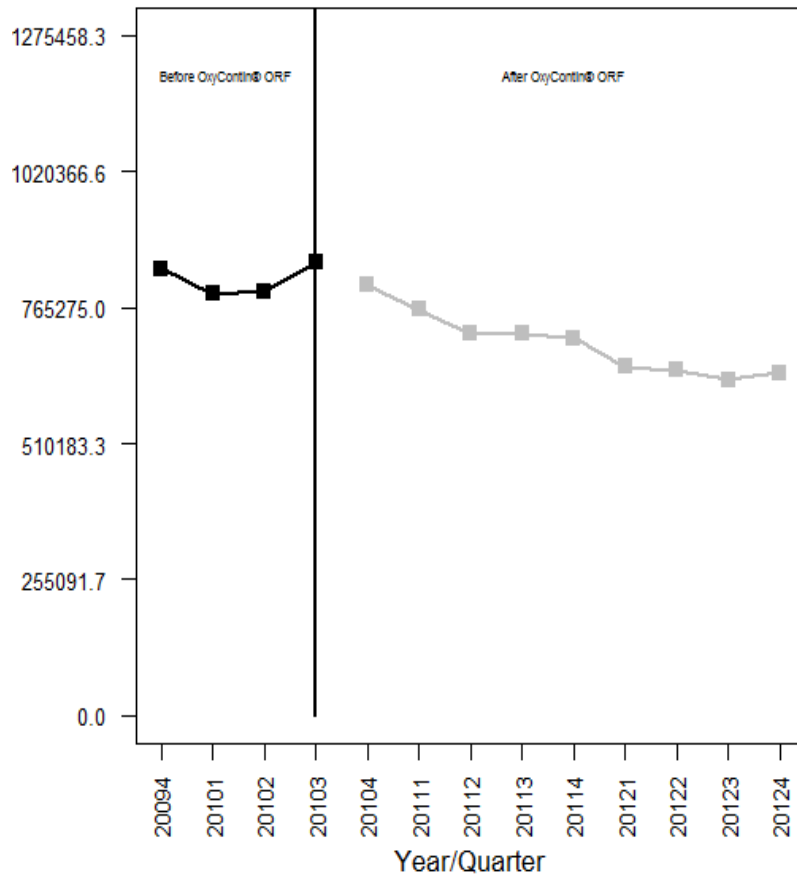
OxyContin, Opana, Exalgo, Nucynta



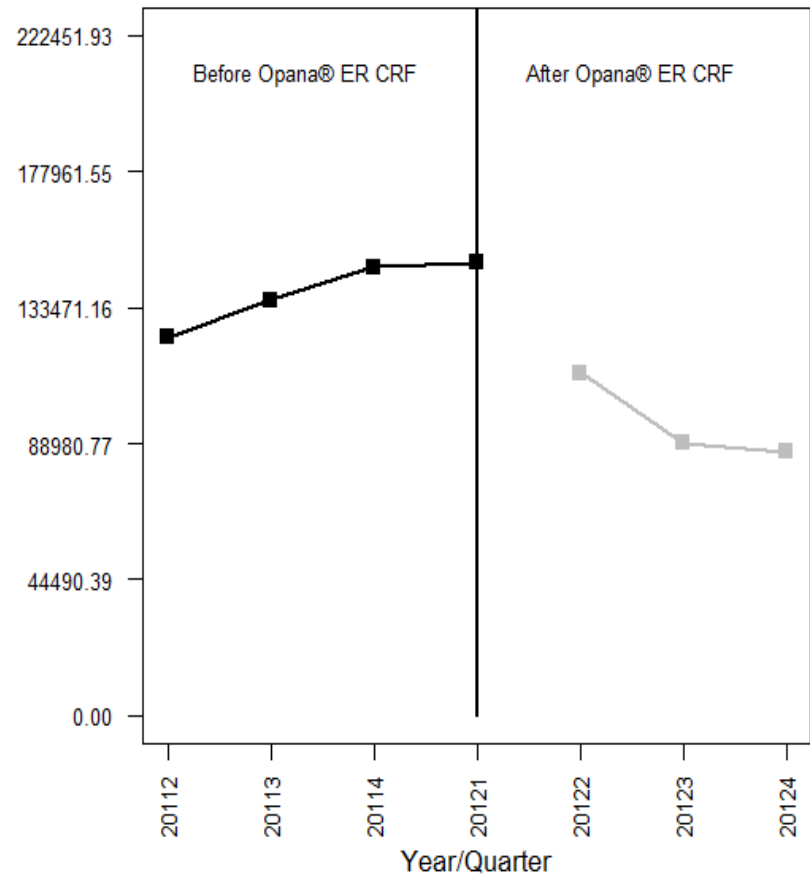


# Unique Recipients of Dispensed Drugs

**OxyContin®**



**Opana® ER**



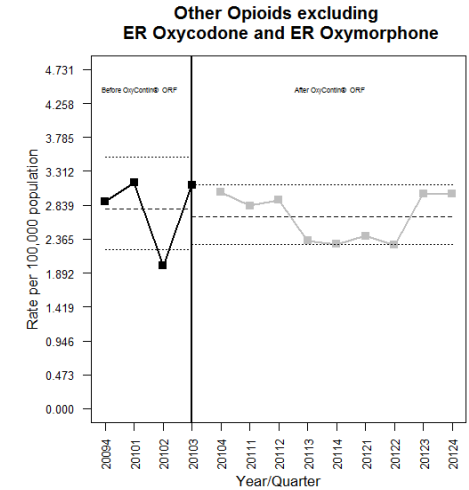
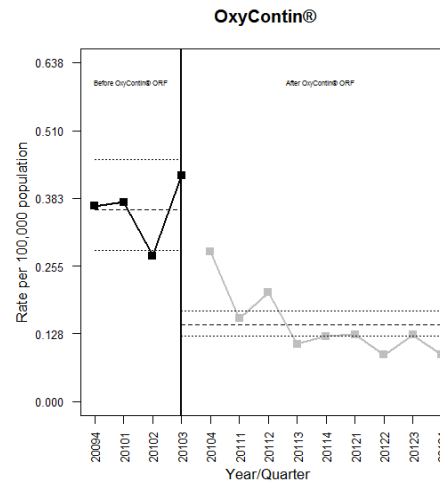
# Tamper Resistant Strategies

- Hard coatings which resist crushing
- Polymers which turn to viscous gel when heated
- Polymers which resist dissolving in water and alcohol
- Nasal tissue irritants
- Novel delivery systems (patches, implants, etc.)

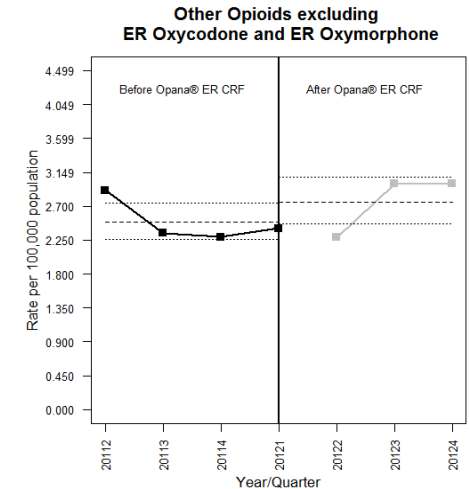
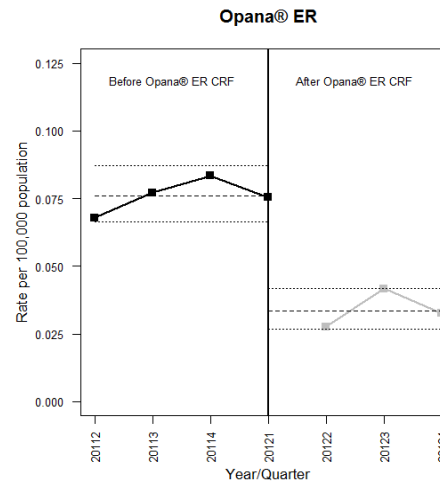
# Drug Diversion Program

## Abuse Deterrent Formulations

OxyContin

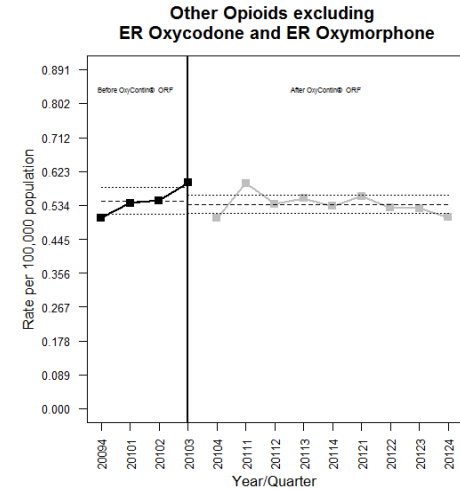
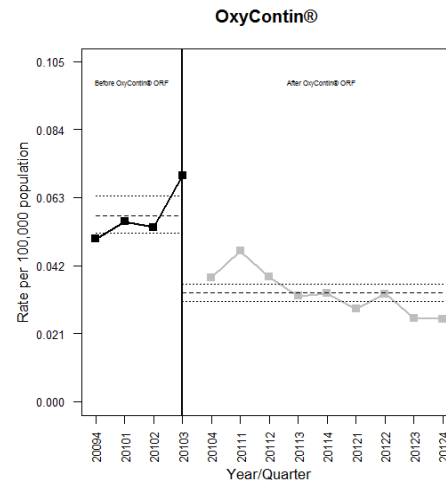


Opana ER

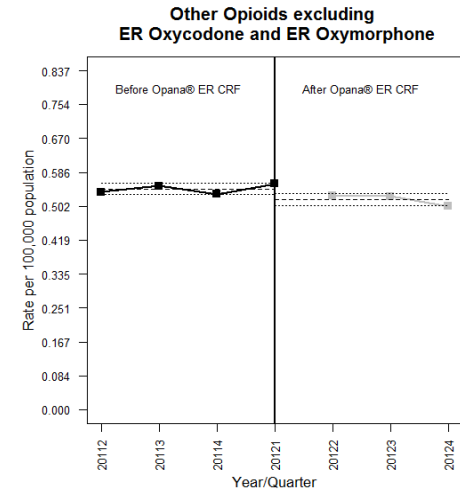
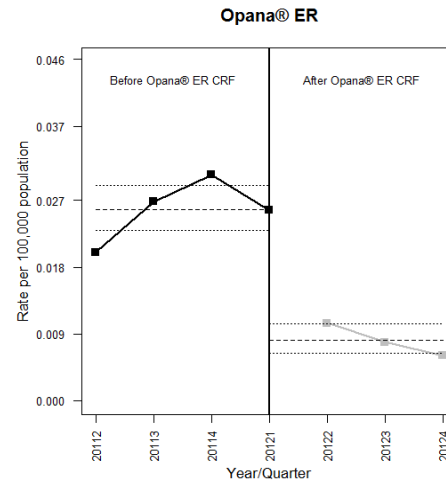


# Poison Center Program Abuse Deterrent Formulations

OxyContin



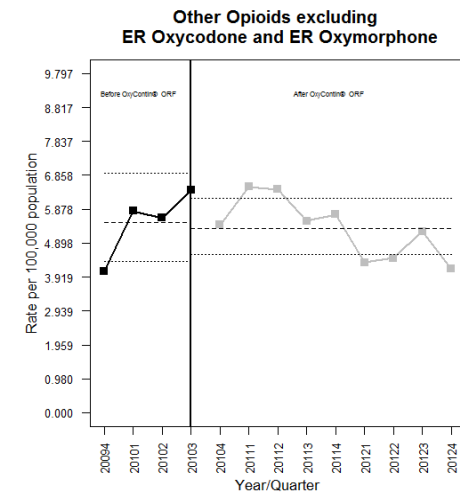
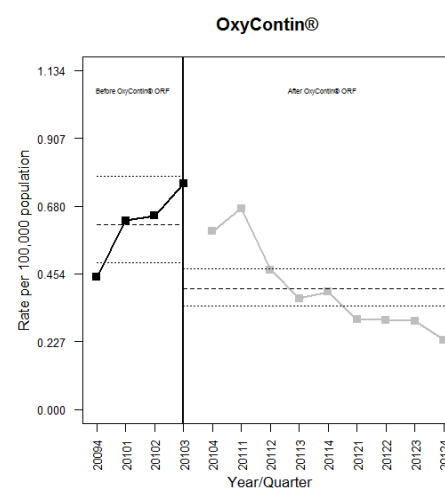
Opana ER



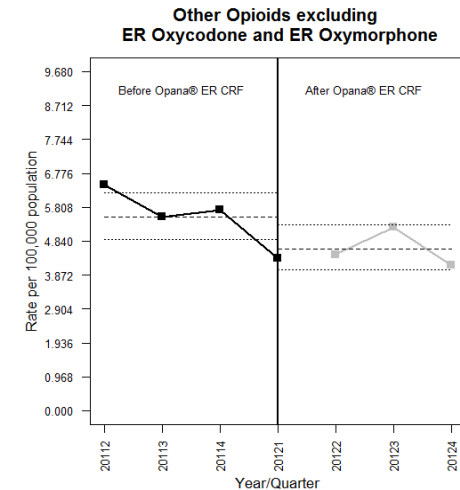
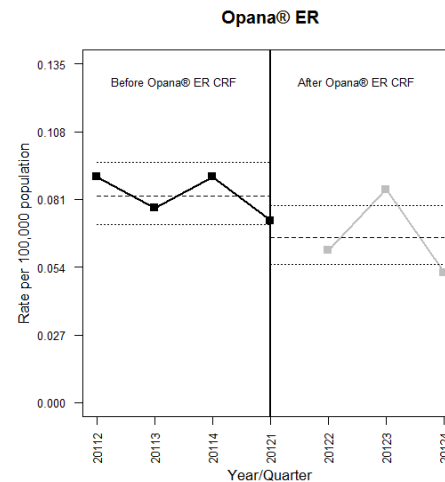
# Treatment Programs

## Abuse Deterrent Formulations

OxyContin



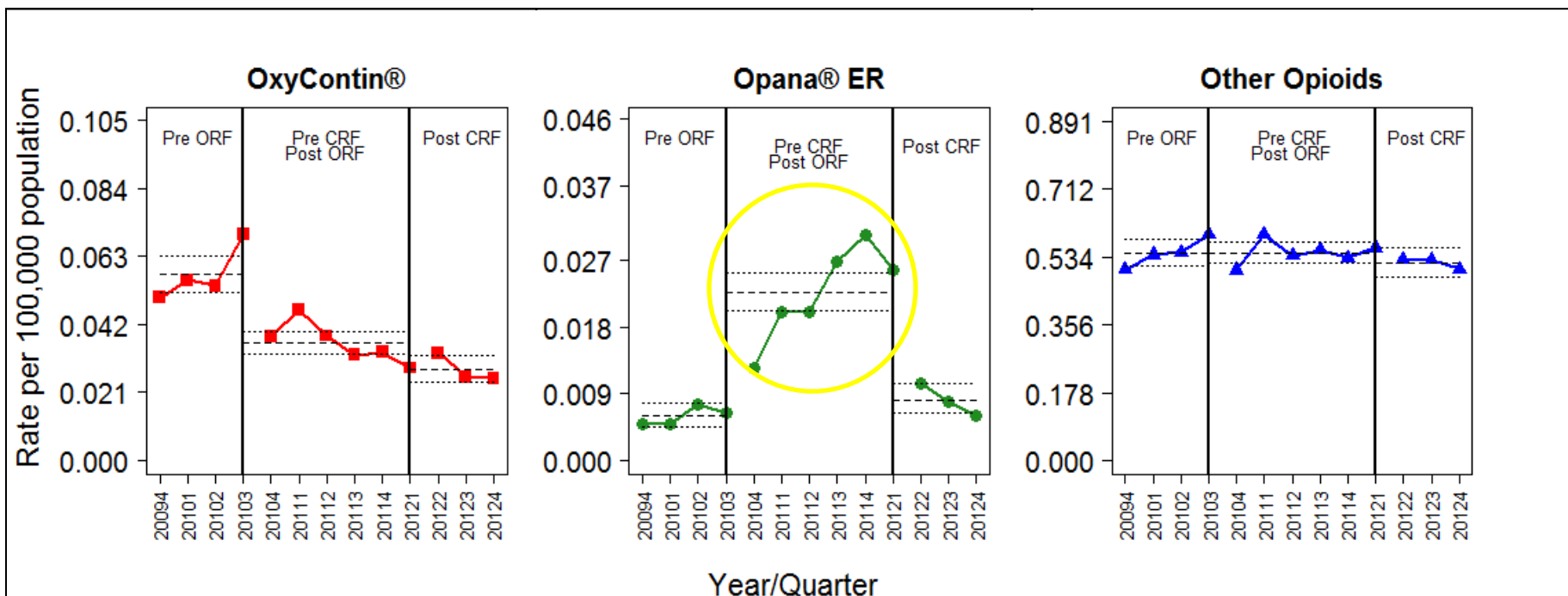
Opana ER



# Poison Center Program

## Contacts Involving Intentional Abuse

### OxyContin®, Opana® ER, Other Opioids



ORF = OxyContin ADF, CRF = Opana ER ADF

**Intentional Abuse:** An exposure resulting from intentional improper or incorrect use of a substance where the victim was likely attempting to gain a high, euphoric effect or some other psychotropic effect.

# Lessons

- Where does prescription drug abuse occur – Everywhere!
- Hydrocodone and oxycodone are the most prevalent drugs abuse
- Hydromorphone and oxymorphone are most likely to be abused when drug supply is considered
- Abuse deterrent formulations appear to be effective
  - State Attorneys General
  - FDA



# Concepts

- Participants in the system
  - Demand: Patient vs. “Patient”
  - Supply: Prescriber, Pharmacist, Pharmaceutical company
- Prescription monitoring plans
- Relationship between licit and illicit drugs - Squeezing the balloon
- Community intervention – addresses them all
  - Lazarus project, North Carolina
    - OD death rate 46.6 per 100,000 in 2009 to 29.0 in 2010.
    - In 2008, 82% of OD decedents received an opioid analgesic prescription from a Wilkes prescriber, but only 10% in 2010.
  - Project UNITE
    - Eastern Kentucky
  - Florida pill mills

