

Buprenorphine Data from The RADARS[®] System

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Buprenorphine in the Treatment of Opioid Addiction: Reassessment 2010

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Statement of Disclosure

- The Researched Abuse, Diversion and Addiction Related Surveillance (RADARS[®]) System was initiated in 2002 and is owned and operated independently by Denver Health and Hospital Authority, a not-for-profit safety net hospital.
- The RADARS System is supported by pharmaceutical company subscribers.

Research Questions

1. What are recent time trends for buprenorphine misuse, abuse and diversion?
2. What are the consequences of concurrent buprenorphine and benzodiazepine misused and abuse?
3. What is the nature of accidental pediatric buprenorphine exposures?



About the RADARS[®] System

Six Views on Prescription Drug Abuse

Law Enforcement

- Drug Diversion
- Criminal justice perspective

Survey of Key
Informant Patients

- Dependent/addicted patients
- Health care provider perspective

Poison Center

- Acute incident – calling for care advice
- All ages and geographic regions

Opioid Treatment
Program

- Dependent/addicted patients
- Patient perspective

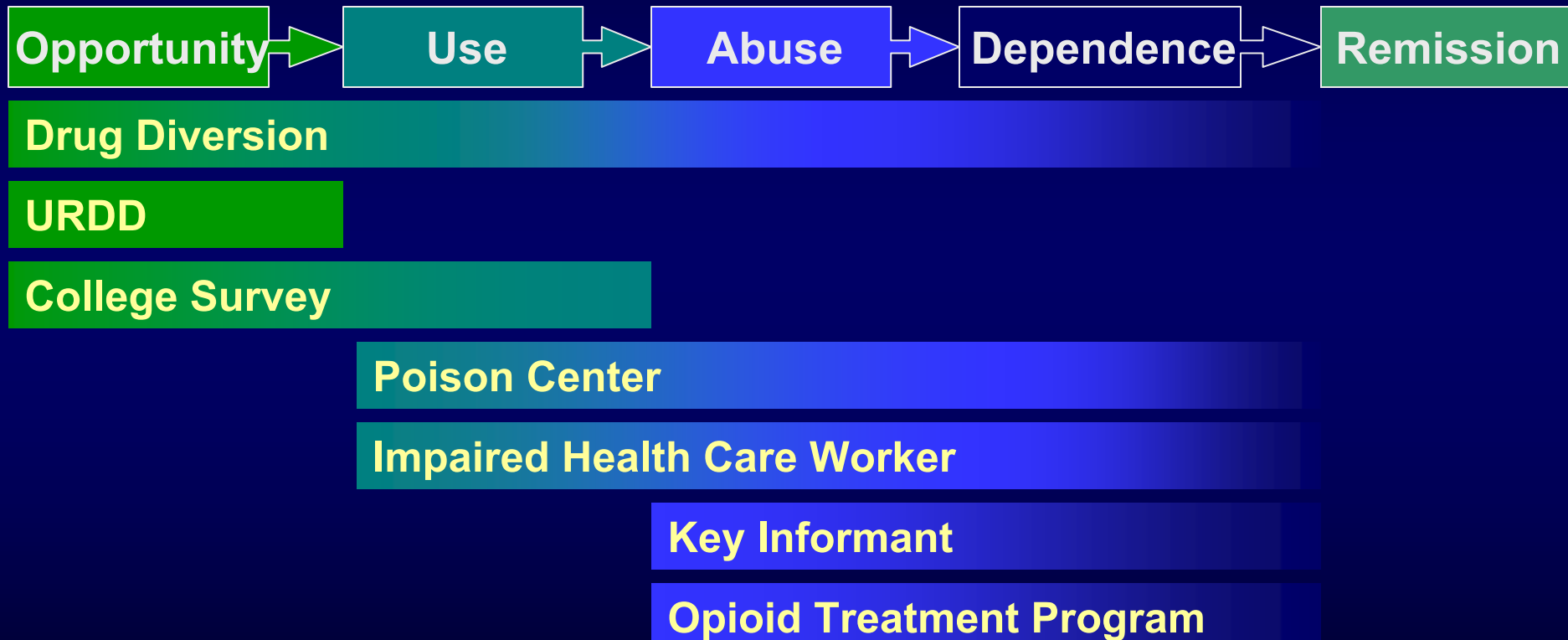
Impaired Health
Care Worker

- Subset of all signal detection systems
- Early adopter group?

College Survey

- Experimentation
- Early abuse perspective

Drug Dependence Pathway



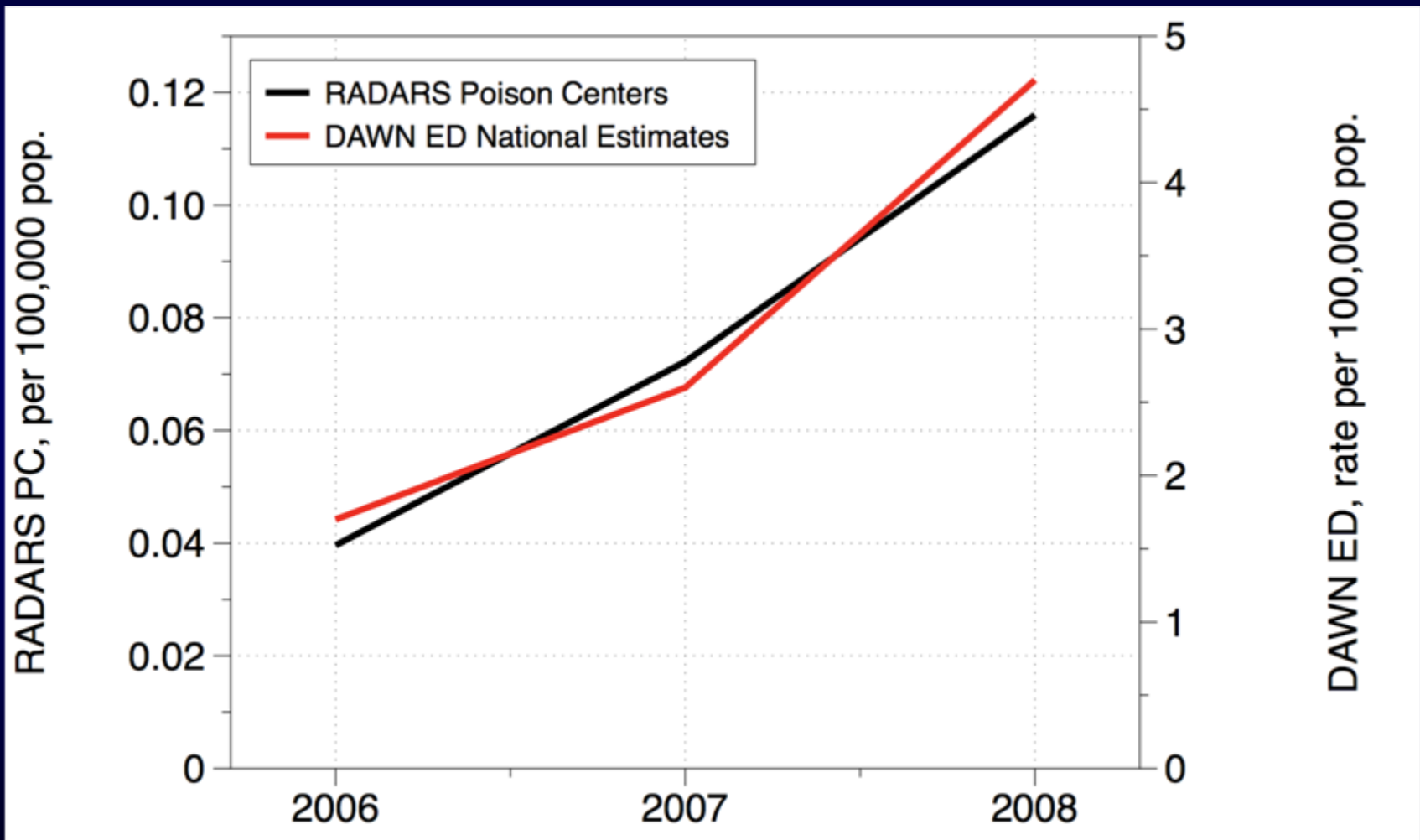
Source: Chilcoat HD, Johanson CE. Vulnerability to Cocaine Abuse. Higgins ST, Ed. *Cocaine Abuse: Behavior, Pharmacology, and Clinical Applications*. San Diego, CA: Academic Press; 1998: 313-341.
Institute of Medicine – Committee on Opportunities in Drug Abuse Research. *Pathways of Addiction*. Washington, DC: National Academy Press; 1996.

Time Trends in Buprenorphine Misuse, Abuse and Diversion

*Data from The RADARS[®] System
Poison Centers, Outpatient Treatment Programs, and
Drug Diversion, 2002-2009*

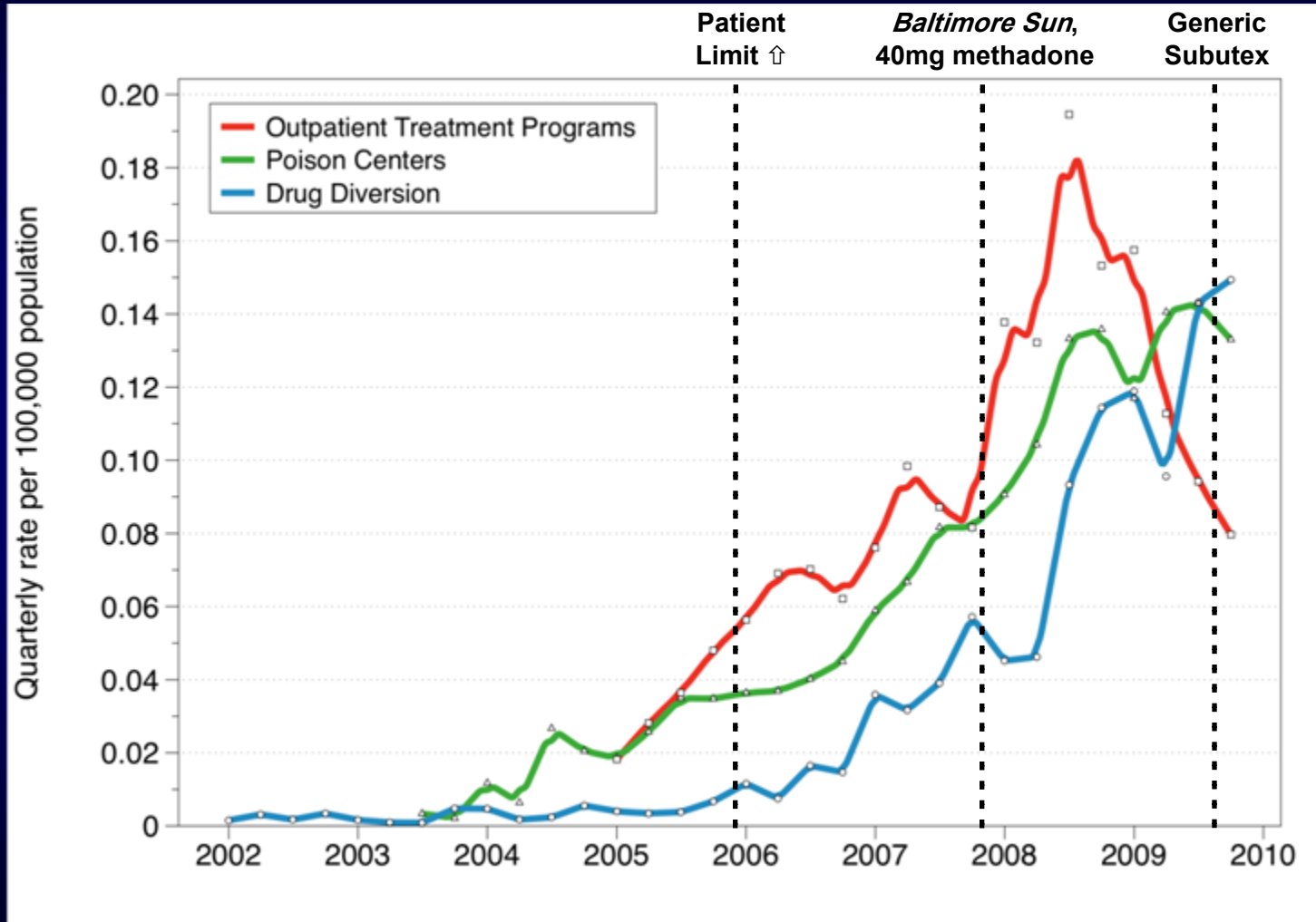
Buprenorphine Indicators

RADARS PC Calls and DAWN ED Mentions

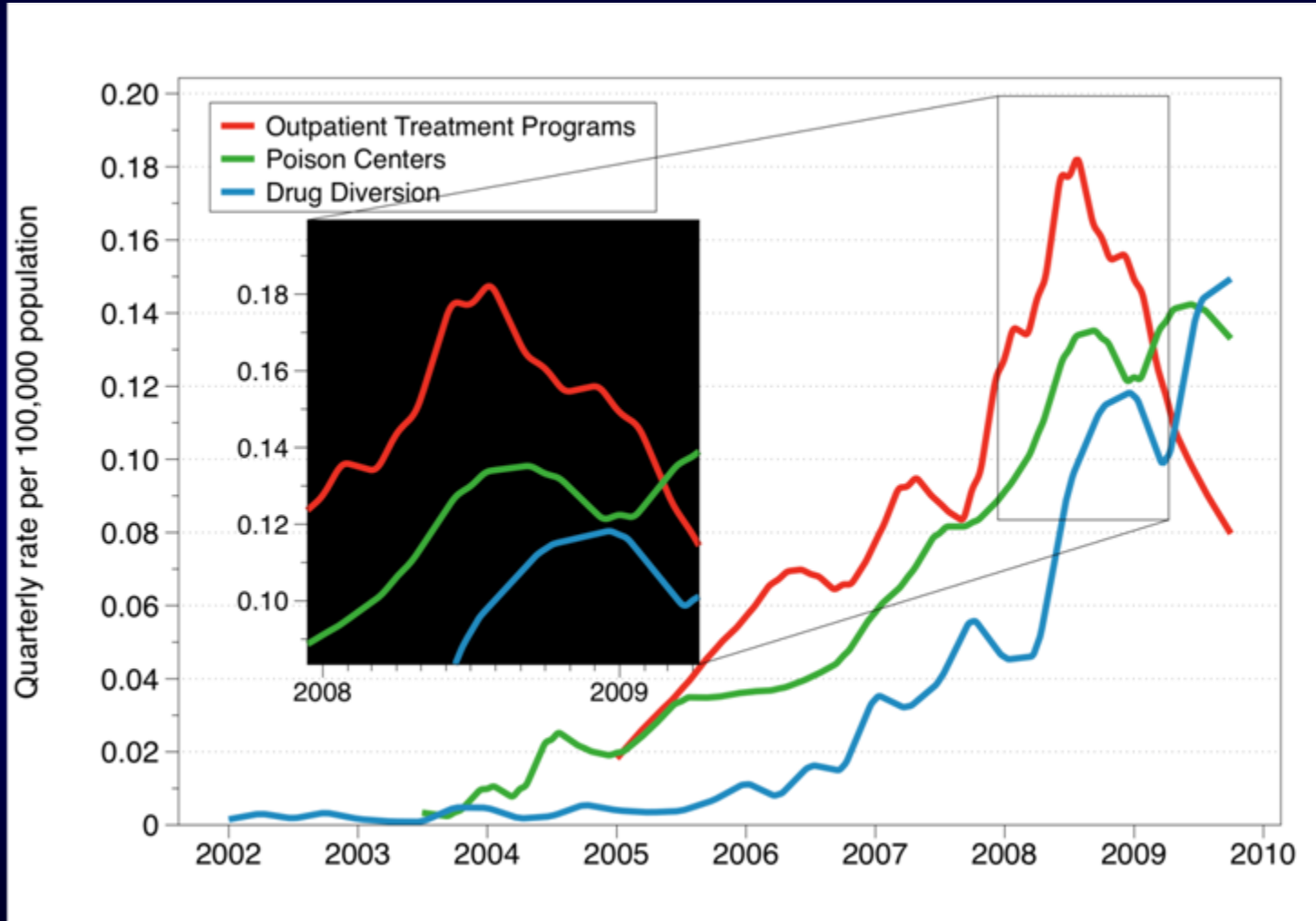


PC = poison centers; ED = emergency department; pop. = population

Rates per 100,000/quarter

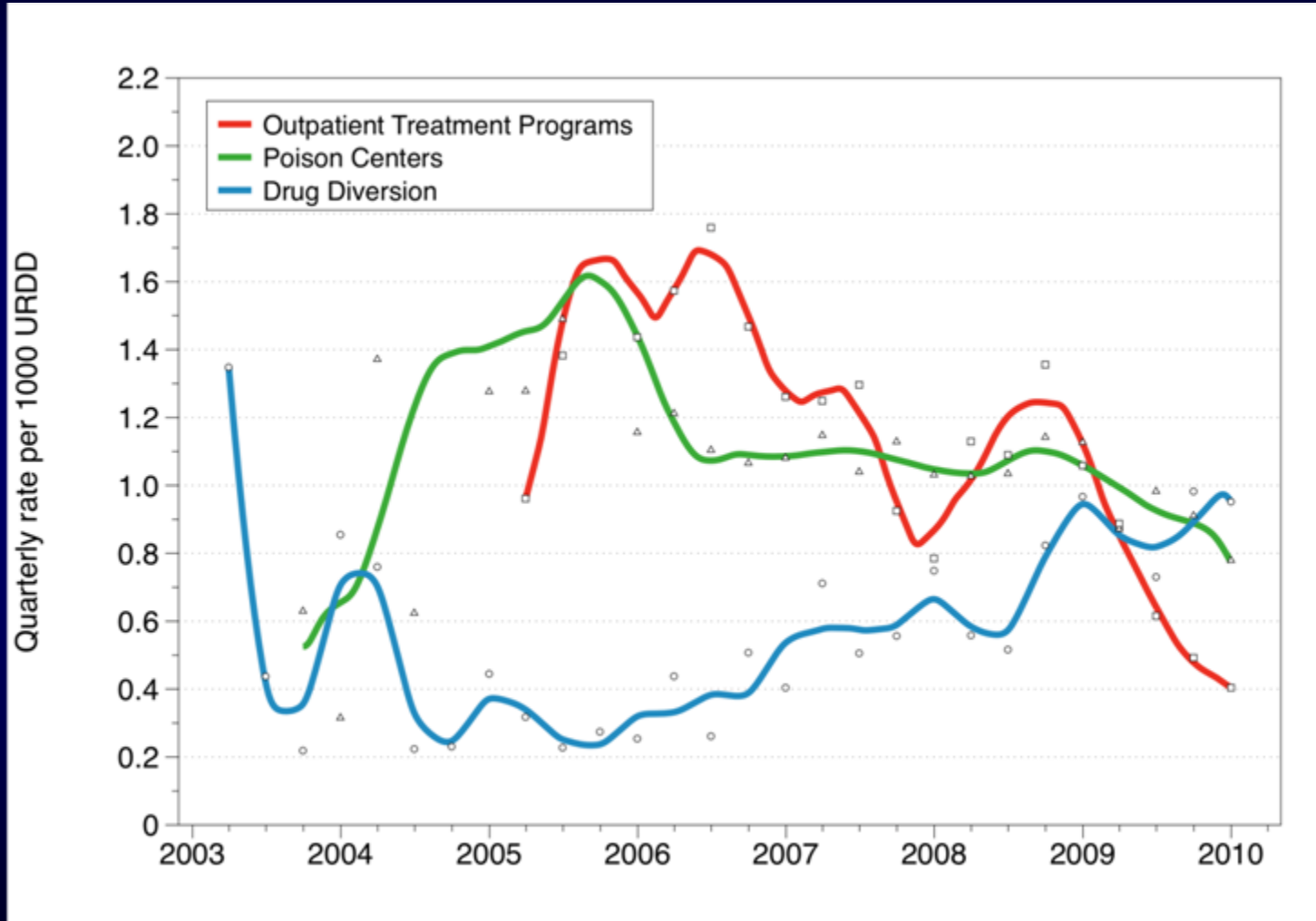


Rates per 100,000/quarter



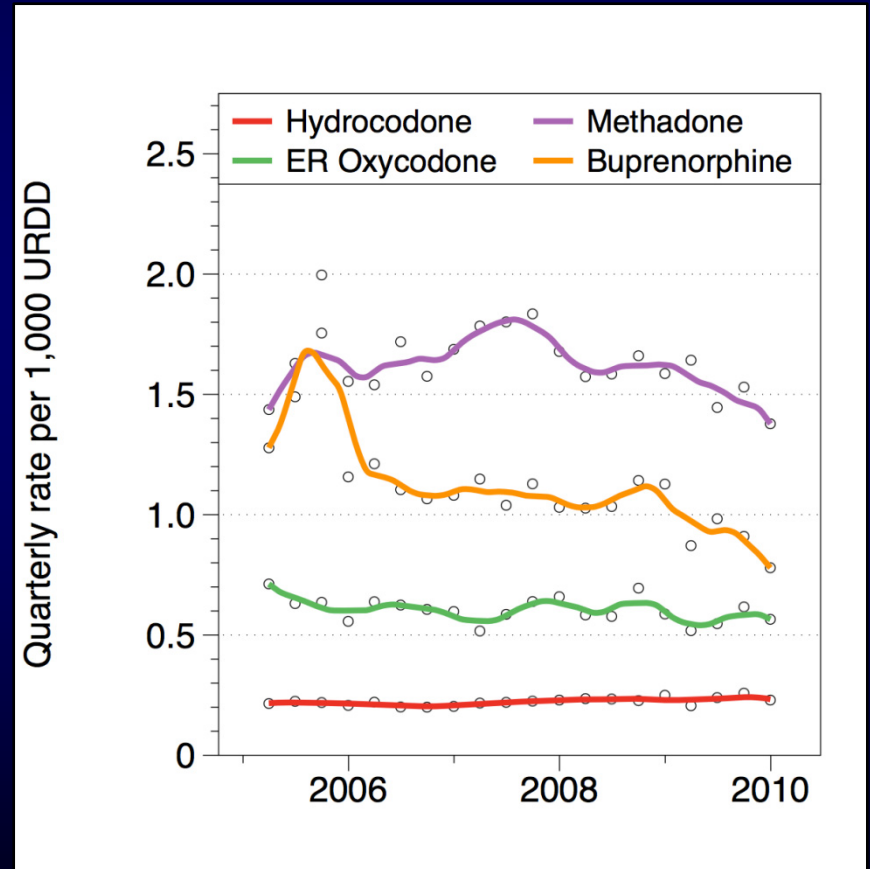
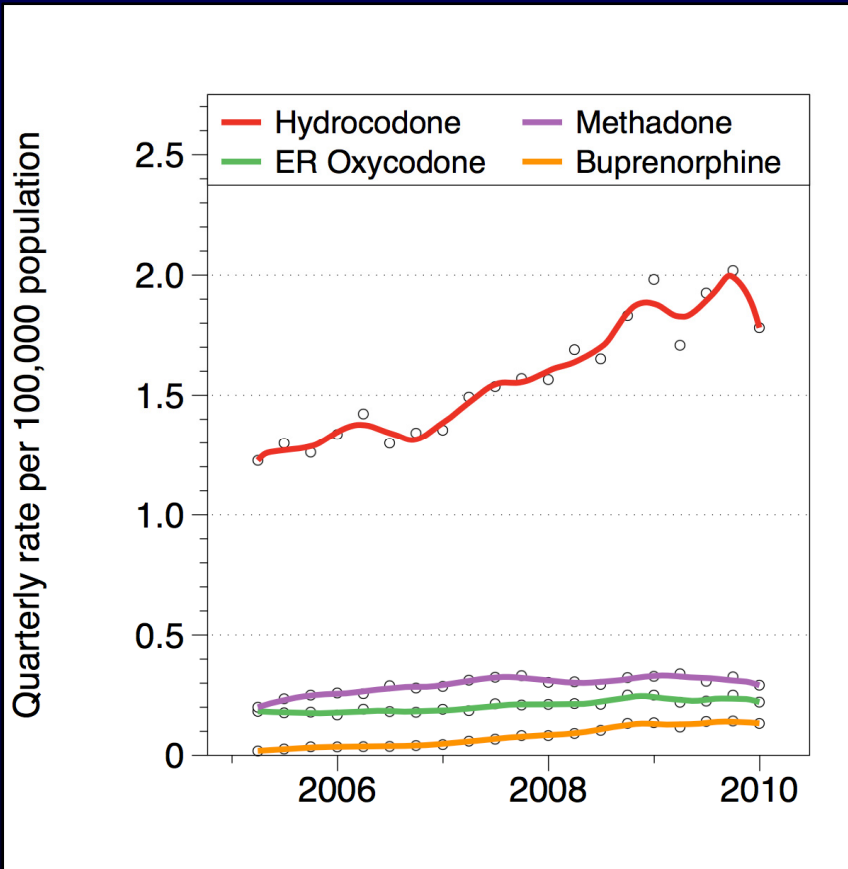
Rates per 1000 URDD/quarter

Unique recipient of dispensed drug (URDD)



Population vs. URDD Rates

RADARS[®] System Poison Centers, 2005-2010



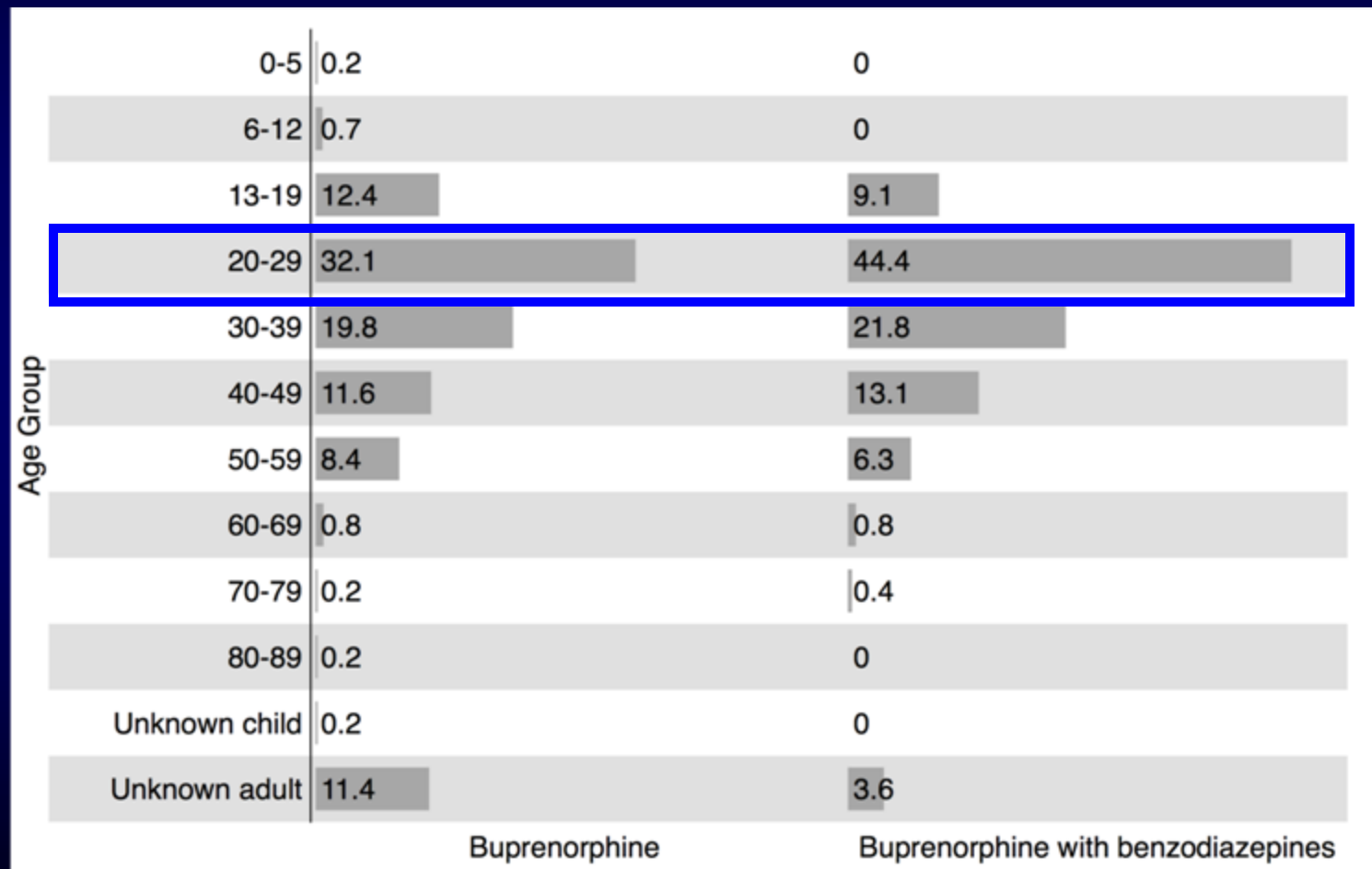
ER = extended-release

Buprenorphine and Benzodiazepines

*Data from The RADARS[®] System Poison Centers, 2009
Intentional Exposure Calls*

PC IE calls for Buprenorphine and Buprenorphine + Benzodiazepines

Percent of calls by age group, 2009, N=1254



Associated Medical Outcomes

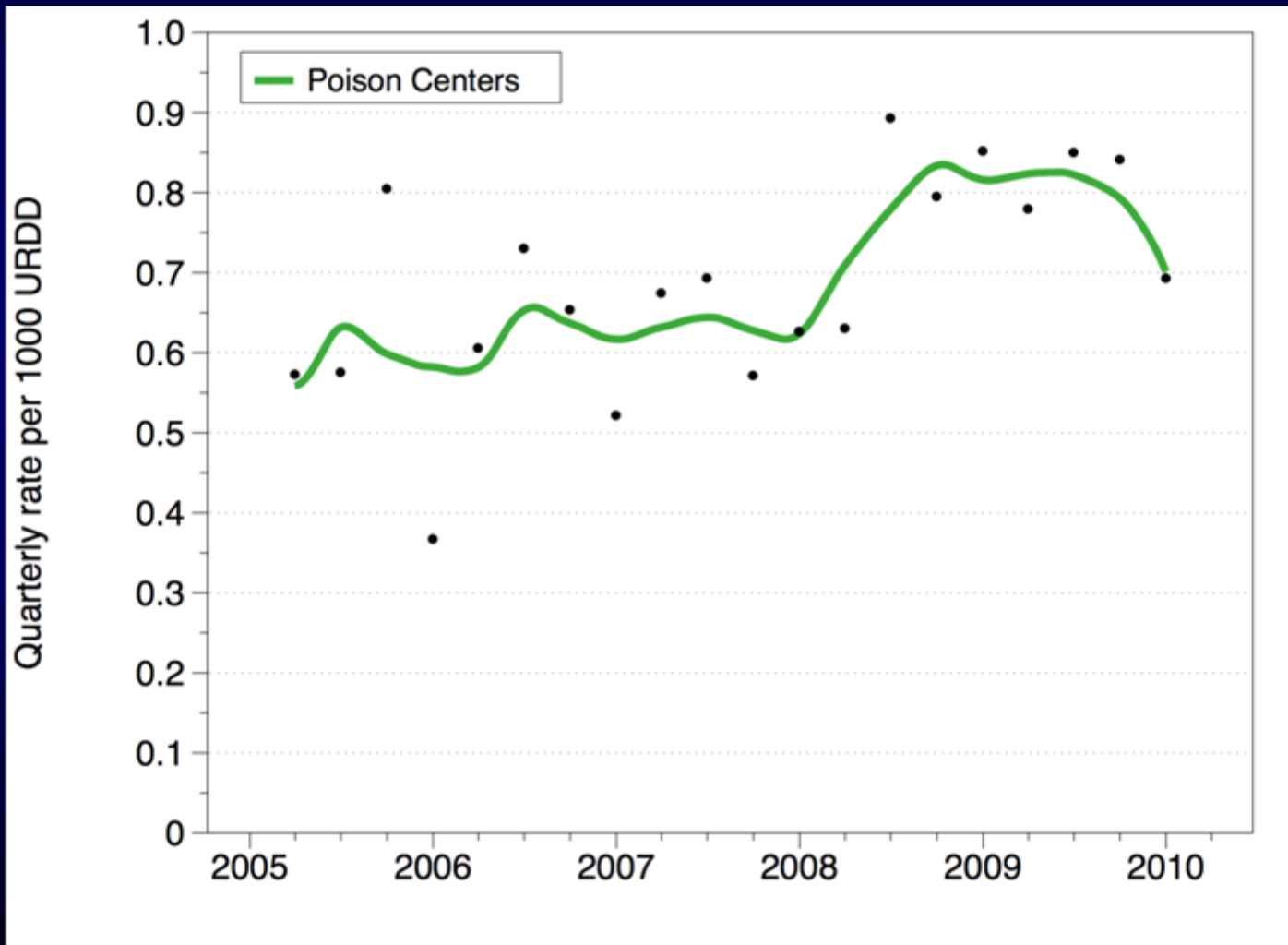
	Buprenorphine	Buprenorphine and Benzodiazepines
Moderate effect, major effect, deaths	24.7% N=248	39.3% N=99
Deaths	0.8% N=2	3.0% N=3

Pediatric Exposures to Buprenorphine

*Data from The RADARS® System Poison Centers
All exposure calls, <6 years old*

PC Pediatric Exposures

Rates per 1000 URDD per Quarter, N=2281



What are the associated medical outcomes of buprenorphine & methadone pediatric exposures to poison center calls?

RADARS[®] System PC, 2009, < 6 years old intentional/unintentional/other calls

	Buprenorphine N=1105	Methadone N=316
Minor, Self Resolving Conditions (no effect, not followed non-toxic, not-followed minimal clinical effect)	64.3%	56.3%
Moderate Effects	17.9%	14.2%
Major Effects	1.4%	5.7%
Death	0	0.6%
Unable to Follow, Judged Potentially Toxic	12.9%	19.0%
Unknown and other	3.4%	4.1%

Conclusions (1)

- Multiple cycles of buprenorphine misuse, abuse and diversion have occurred over the last 8 years, most recently in late 2008/early 2009
- Peaks in misuse, abuse and diversion of buprenorphine are not directly related temporally with large social events or regulatory changes
- Abuse of buprenorphine is detected earliest among enrollees in drug treatment centers, followed by callers to poison centers and then law enforcement

Conclusions (2)

- Co-ingestion of buprenorphine and benzodiazepines is occurring most among 20-29 years-olds, and is associated with more severe medical outcomes than buprenorphine alone or with other substances
- Pediatric exposures for buprenorphine have increased somewhat over time, but are not associated with a major burden of serious medical outcomes

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See Also

N Dasgupta, JE Bailey, T Cicero, J Inciardi, M Parrino, A Rosenblum, RC Dart (2010). Post-marketing Surveillance of Methadone and Buprenorphine in the United States. *Pain Medicine*, IN PRESS.