

Methadone Morbidity and Mortality: Current Data and Trends from The RADARS[®] System

Methadone Mortality – Reassessment 2010
Washington, DC, July 29-30, 2010

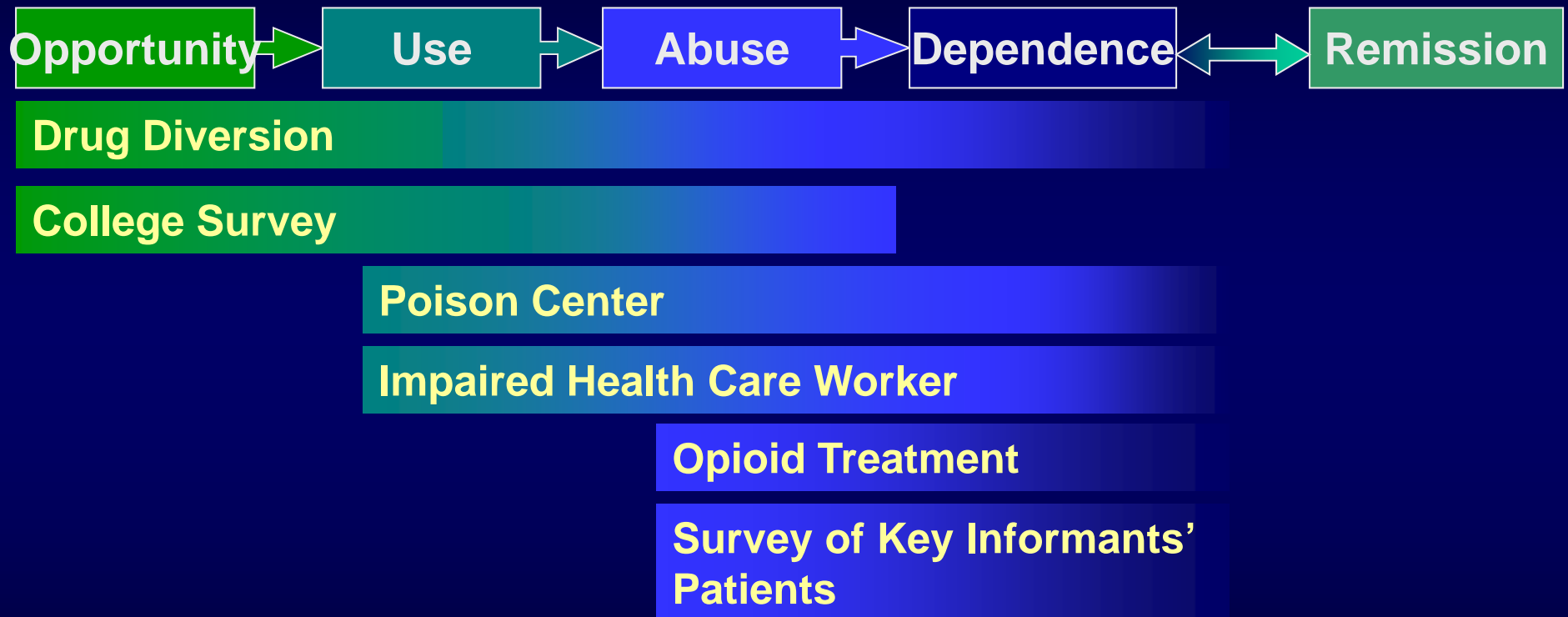
Richard C. Dart, MD, PhD

The RADARS[®] System
Denver Health and Hospital Authority
Denver, CO, USA

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 financially by subscriptions purchased by pharmaceutical companies.

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.

RADARS® System

Six Views of Prescription Drug Abuse

Drug Diversion

- Law enforcement

Survey of Key
Informant Patients

- Dependent/addicted patients

Poison Center

- Acute incident – calling for care advice

Opioid Treatment

- Dependent/addicted patients

Impaired Health
Care Worker

- Subset of all signal detection systems

College Survey

- Experimentation phase

Research Questions

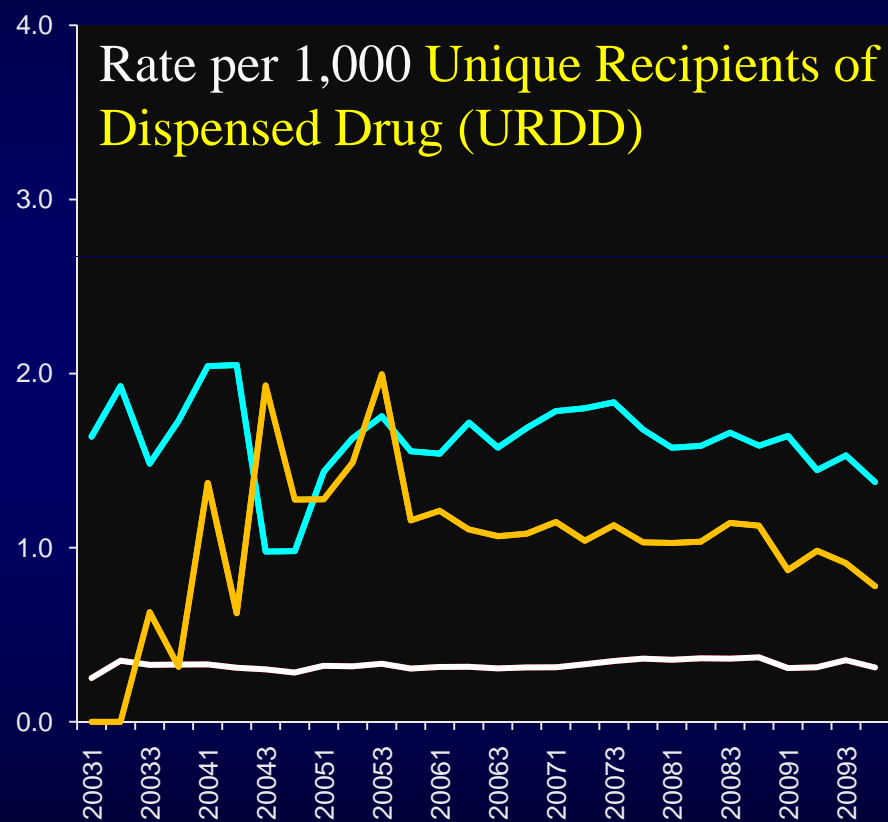
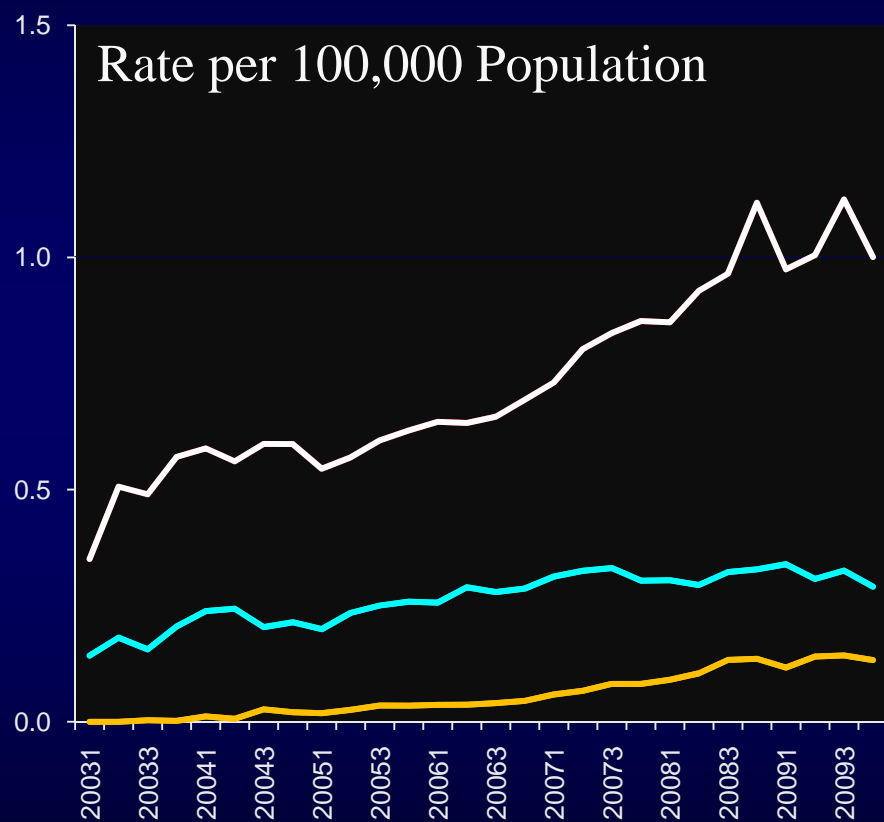
- Trends for methadone abuse and diversion
- Formulations of methadone
- Location of methadone abuse and diversion
- Medical effects and outcomes
- Impact of methadone on children

Trends in Methadone Abuse, Misuse and Diversion

*The RADARS[®] System Poison Center, Survey of Key
Informants' Patients (SKIP), Opioid Treatment, Drug
Diversion and College Survey Programs
2003-2009*

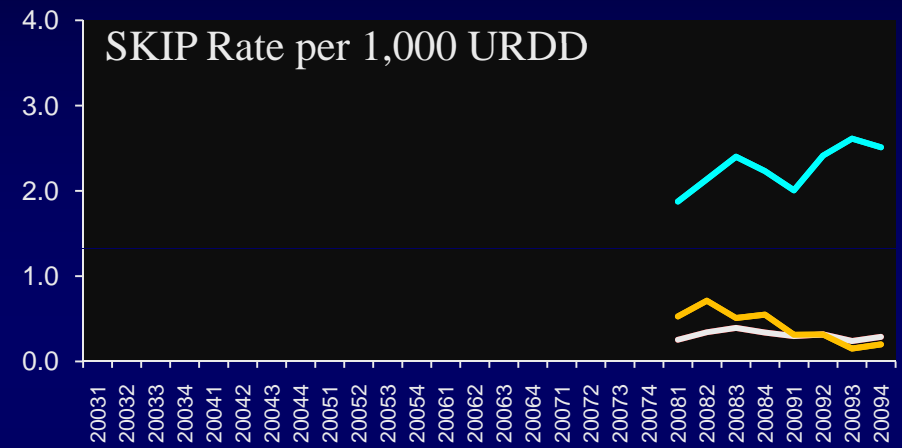
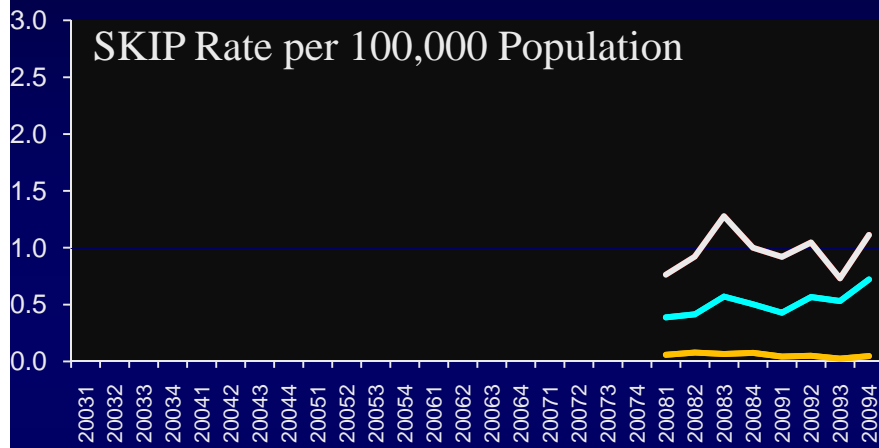
Population vs. URDD Rates

RADARS[®] System Poison Center Intentional Exposures

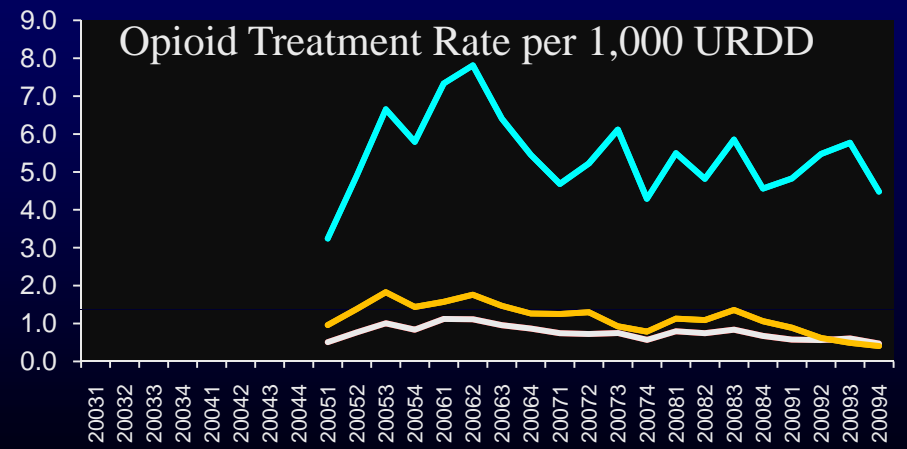
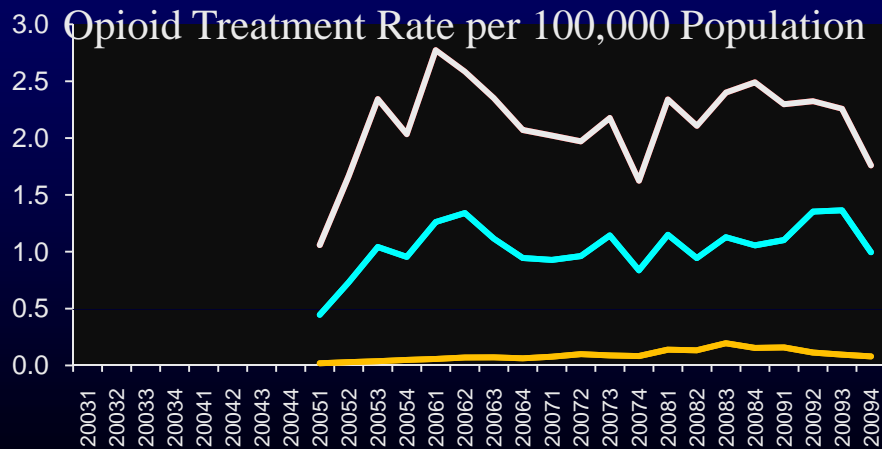


Population vs. URDD Rates

RADARS[®] System SKIP and Opioid Treatment

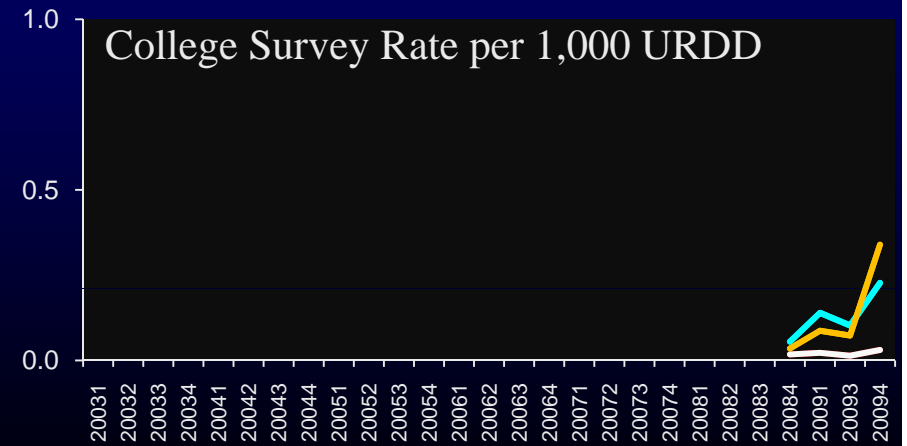
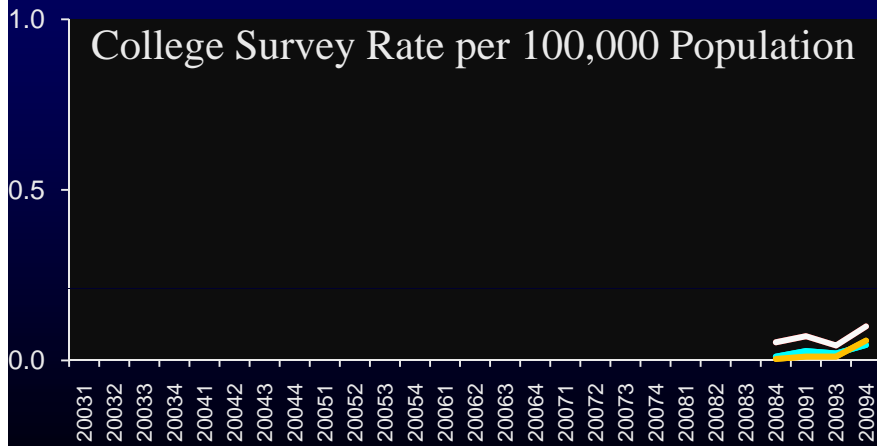
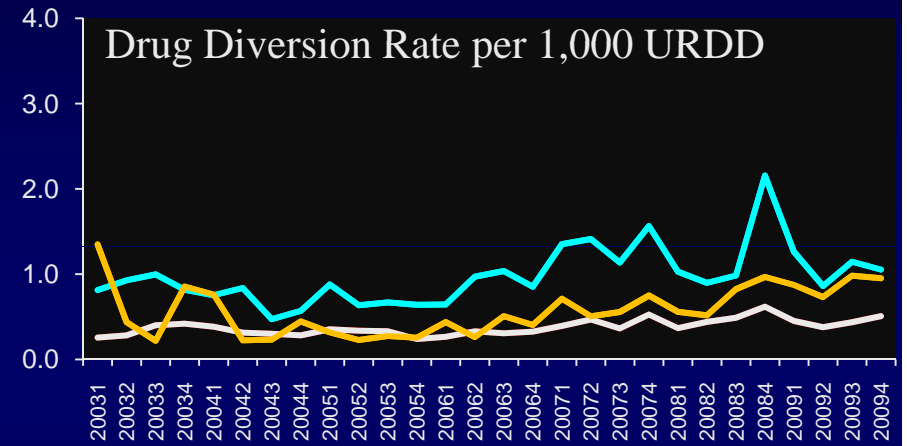
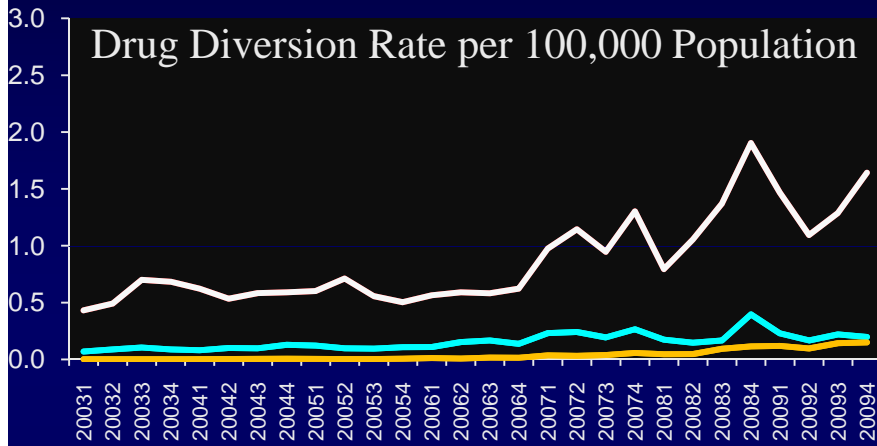


— Methadone
 — Oxycodone
 — Buprenorphine



Population vs. URDD Rates

RADARS[®] System Drug Diversion and College Survey



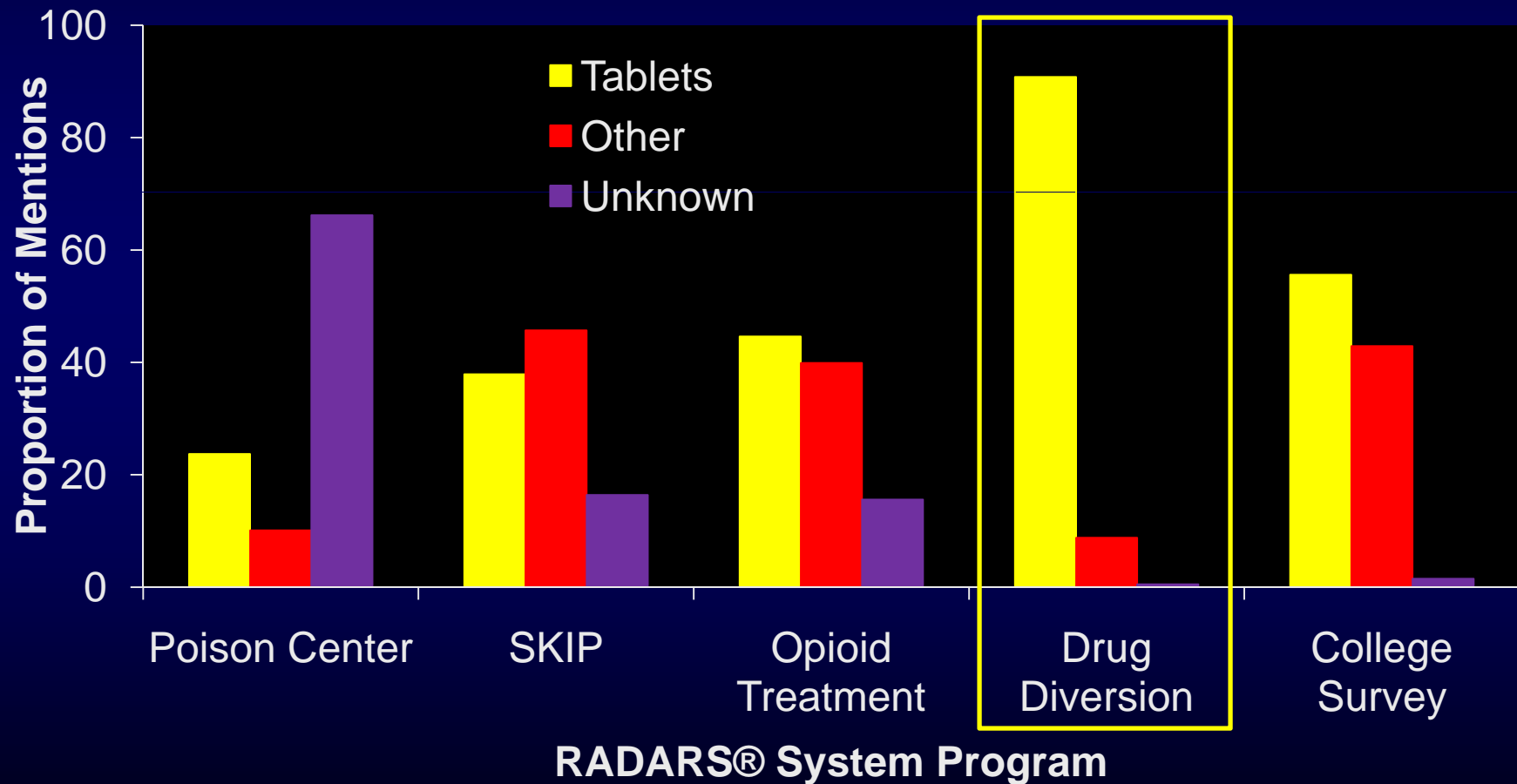
What Formulations of Methadone are Most Abused?

The RADARS[®] System

*Poison Center, Survey of Key Informants' Patients
(SKIP), Opioid Treatment, Drug Diversion and College
Survey Programs*

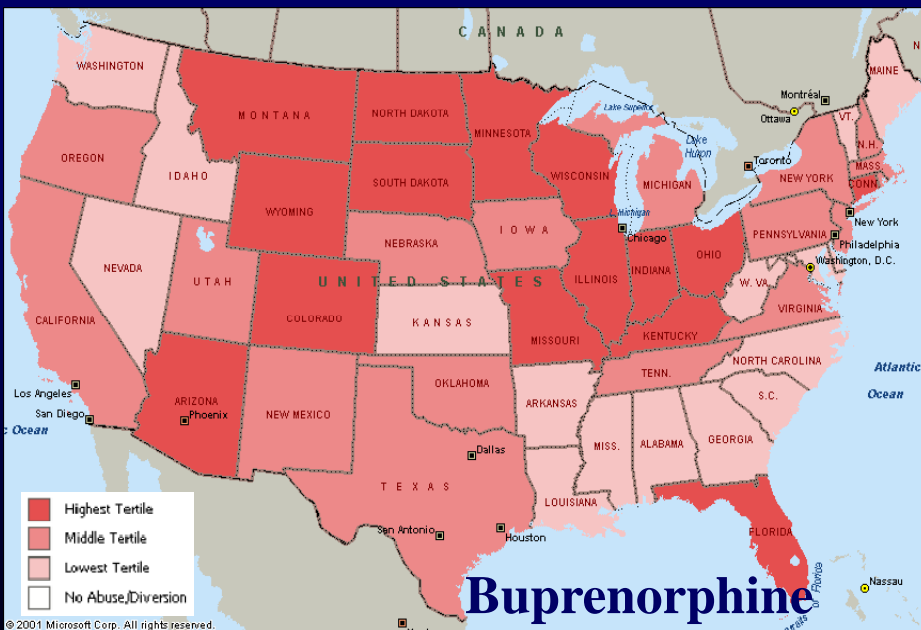
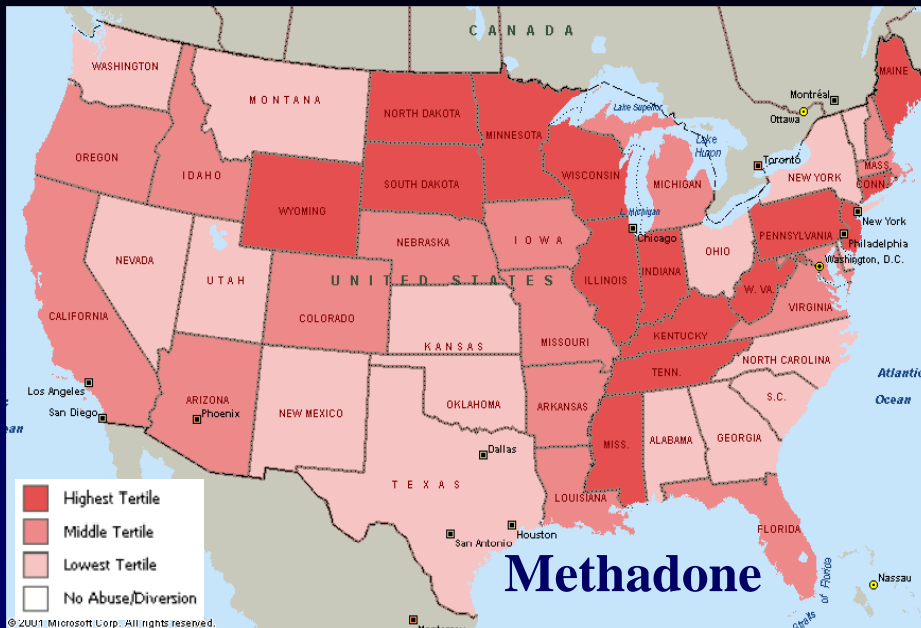
2009

Proportion of Methadone Mentions RADARS® System Programs, 2009



Where Does Methadone Abuse and Diversion Occur?

Data from The RADARS® System
Poison Center, Opioid Treatment, Drug
Diversion, Survey of Key Informants'
Patients, and College Survey Programs
Combined, 2009



Schneider MF, Bailey JE, Cicero TJ, Dart RC, Inciardi JA, Parrino M, Munoz A. Integrating nine prescription opioid analgesics and/or four signal detection systems to summarize statewide prescription drug abuse in the United States in 2007. *Pharmacoepidemiology and Drug Safety*. 2009; 18(9): 778-90.

Medical Outcomes Associated with Methadone

RADARS[®] System Poison Center System

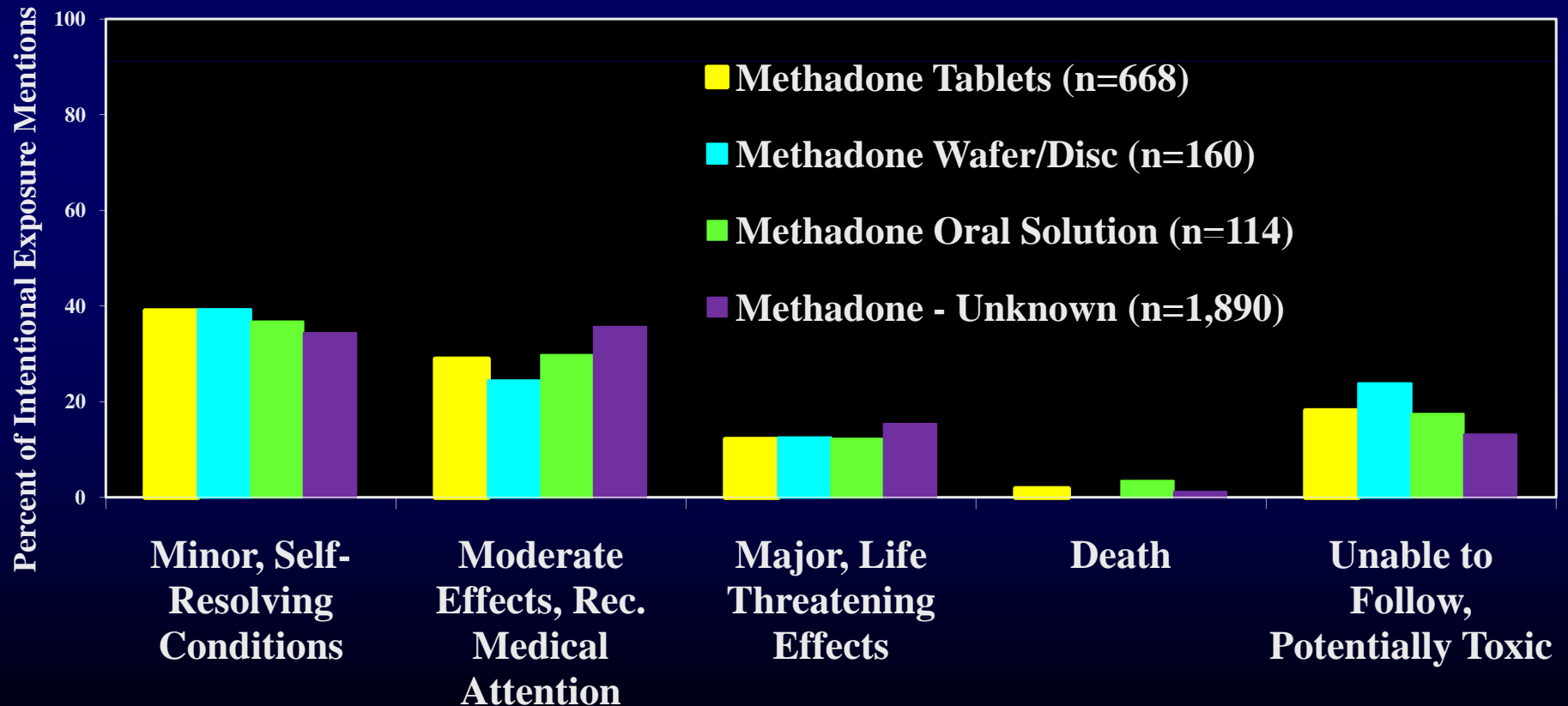
*All intentional exposures (suspected suicidal, intentional
misuse, intentional abuse, intentional unknown,
withdrawal), all ages*

2009

Medical Outcomes Associated with Intentional Exposures

RADARS[®] System Poison Center, 2009, all ages, intentional exposures

- Methadone: 2832 exposures, 39 deaths (1.4%)
- Buprenorphine: 1255 exposures, 5 deaths (0.4%)
- Oxycodone: 9191 exposures, 59 deaths (0.6%)



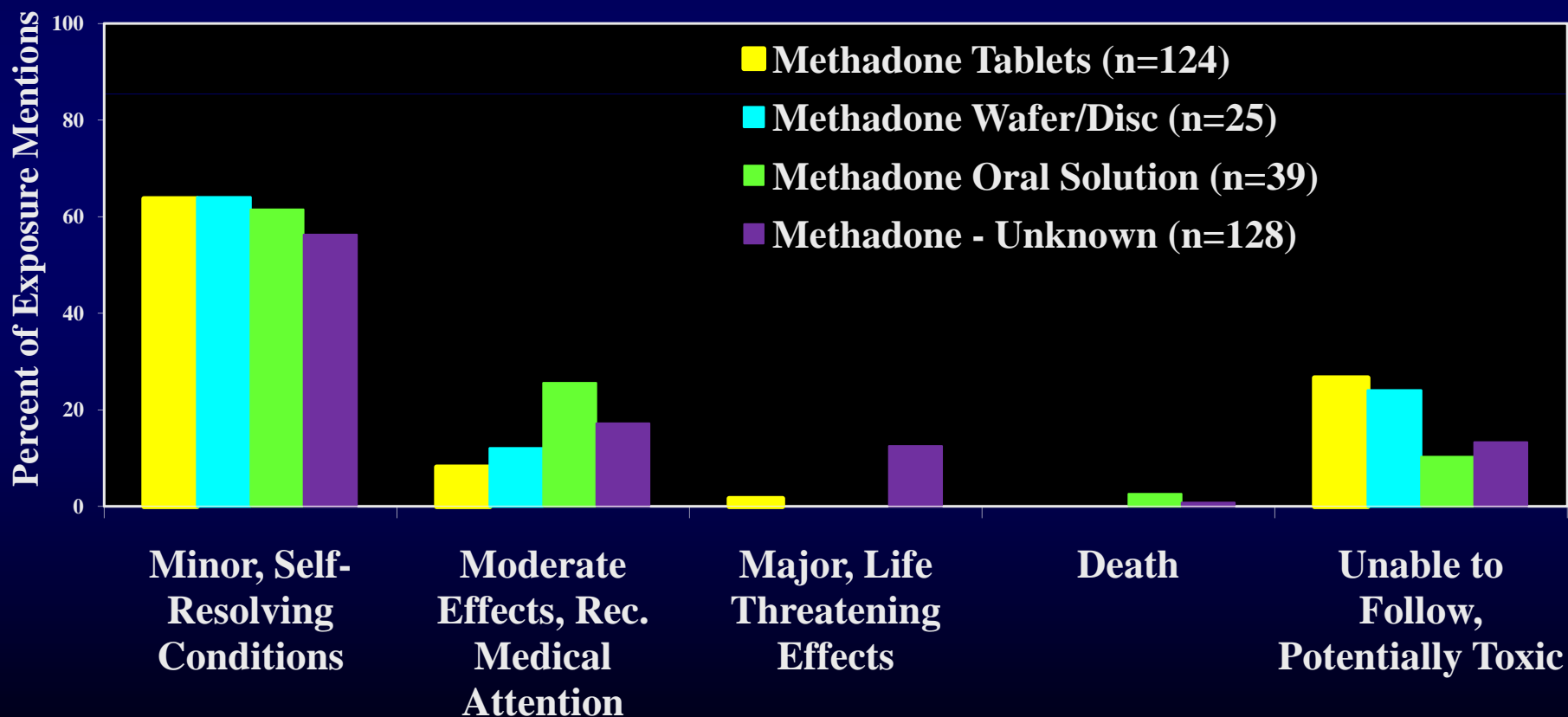
What is the Effect of Methadone on Children?

*Data from The RADARS[®] System Poison Centers
All exposure calls, <6 years old, 2009*

Medical Outcome Associated with Pediatric Exposures

RADARS[®] System Poison Center, 2009, < 6 years, all exposures

- Methadone: 316 exposures, 2 deaths (0.6%)
- Buprenorphine: 1105 exposures, 0 death (0%)
- Oxycodone: 1655 exposures, 1 death (0.06%)



Conclusions

- Like prescription opioid abuse, methadone abuse is widespread, with an emphasis in Appalachia.
- Methadone abuse and diversion are increasing.
- All formulations are involved, but tablets predominate.
- Mortality is more common in poison center cases associated with methadone.
- In children, methadone is a very serious exposure, particularly the oral solution.

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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.

Bailey JE, Campagna E, Dart RC. The RADARS System Poison Center Investigators. The Underrecognized Toll of Prescription Opioid Abuse on Young Children. *Ann Emerg Med*. 2009;53:419-424.