

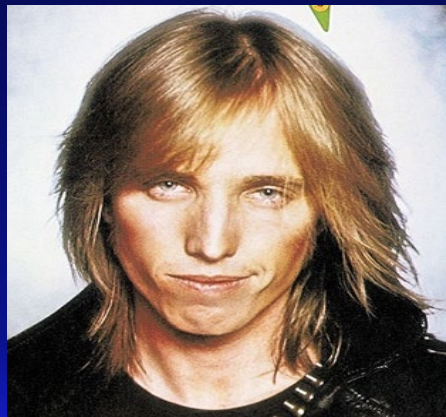
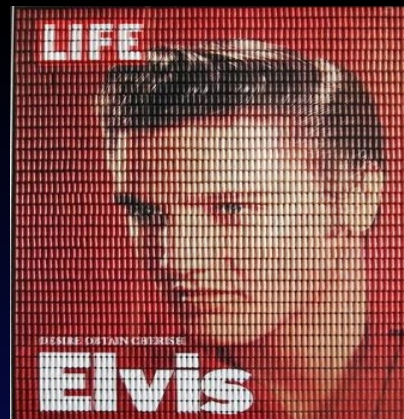
The European Mosaic: Prescription Drug Misuse Across Borders

The Mosaic Approach to Post-marketing Surveillance

Richard C. Dart, MD, PhD
Executive Director, RADARS System, Denver Health
Professor, University of Colorado

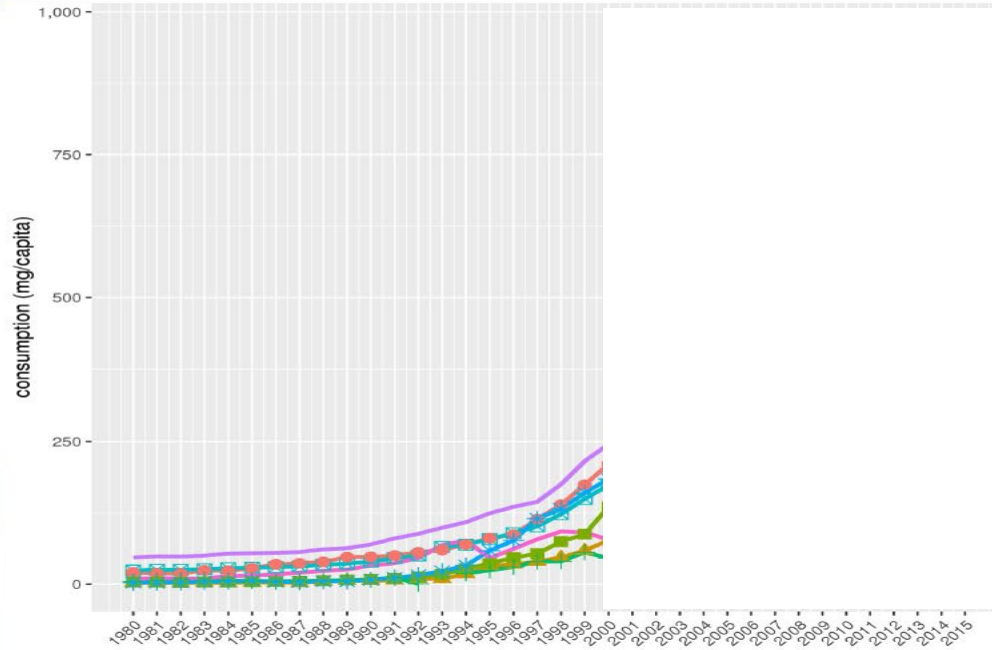
Competing Interests

- The RADARS System is the property of Denver Health and Hospital Authority, a political subdivision of the State of Colorado
 - Employees are prohibited from personal financial relationships with any company
- Many manufacturers of prescription opioids subscribe to RADARS
 - Subscribers receive information, but do not participate in developing the System, data collection, or analysis
 - Subscribers do not have access to the raw data
 - Subscribers may not use RADARS data for promotional purposes



The Problem

WHO: Total Opioid Consumption (Morphine Equivalence Mg/Capita), 1980-2015





Opioids	Benzodiazepines	Antipsychotics	AEDs
<ul style="list-style-type: none">• Heroin• Fentanyl• Rx analgesics• Loperamide	<ul style="list-style-type: none">• Alprazolam• Diazepam	<ul style="list-style-type: none">• Quetiapine• Olanzapine	<ul style="list-style-type: none">• Pregabalin• Gabapentin
	Stimulants	Hallucinogens	NPS/synthetics
	<ul style="list-style-type: none">• Cocaine• Amphetamine• Methylphenidate	<ul style="list-style-type: none">• Ketamine• LSD	<ul style="list-style-type: none">• Mephedrone• Cathinones• Synth Cann'oids

Challenges of Postmarketing Surveillance of Prescription Drugs

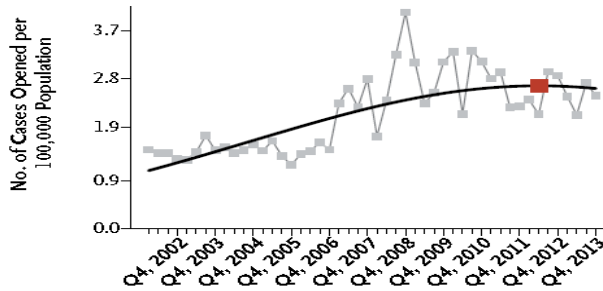
- All the usual challenges of postmarketing surveillance +
 - Regulators' focus on intended use of a drug
 - Unexpected Adverse Events
 - Not Expected Events from Unusual and Inappropriate Uses of the Drug!
- Hidden nature of substance abuse
 - Illegal behaviors
 - Anonymity and Confidentiality
- Product identification

Mosaic Surveillance

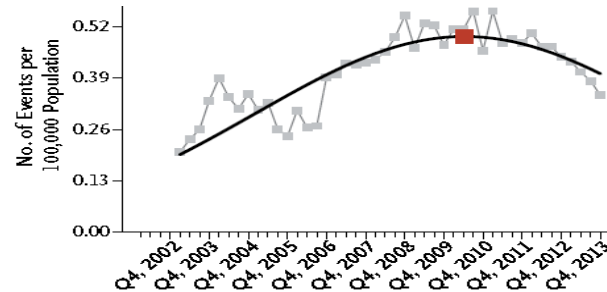


Rx Drug Abuse Decreasing in US Since 2011

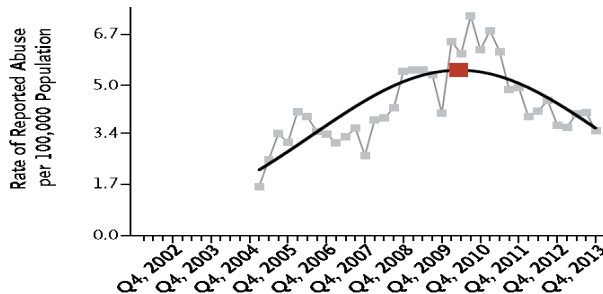
Rate of Drug-Diversion Cases Opened



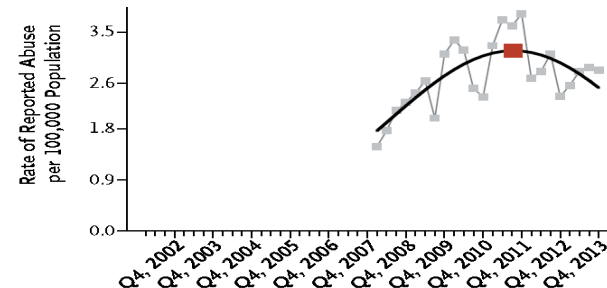
Rate of Poison Center Intent. Abuse



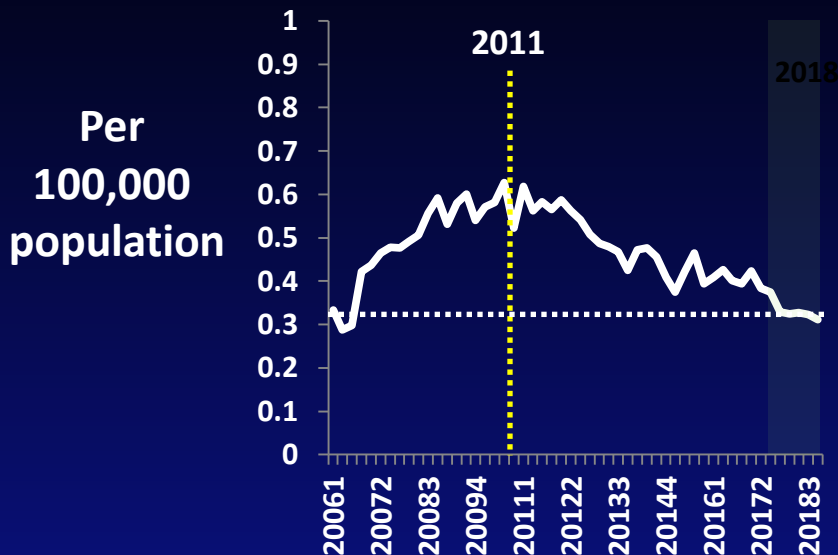
Rate of Endorsement – OTP



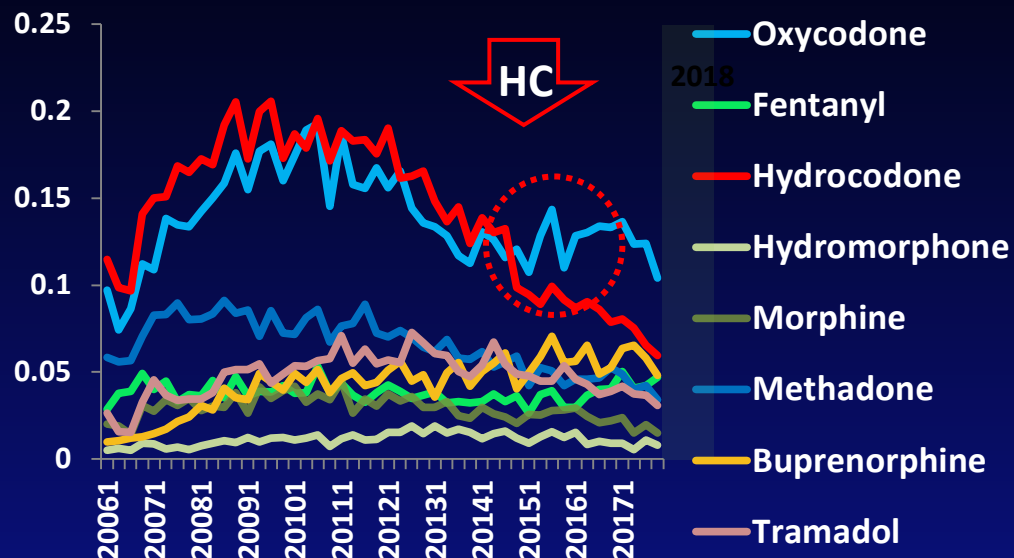
Rate of Endorsement – SKIP



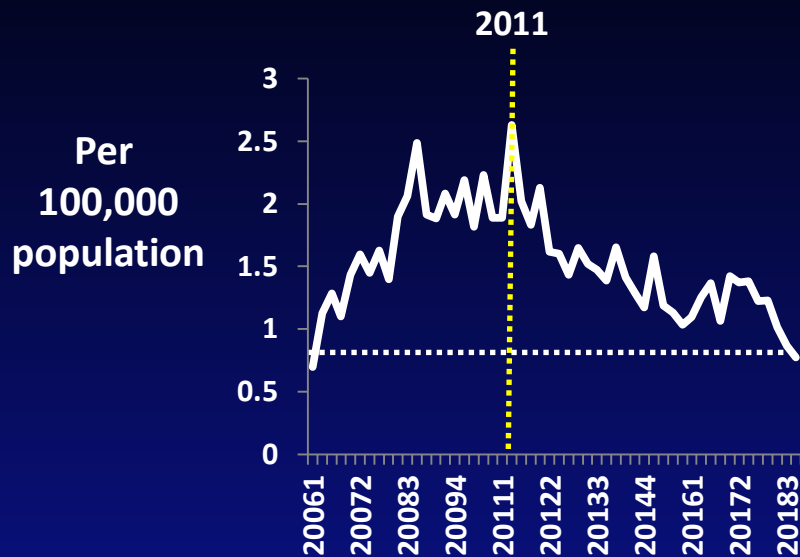
United States, RADARS Poison Center Program Intentional Abuse, 2006 - 2018



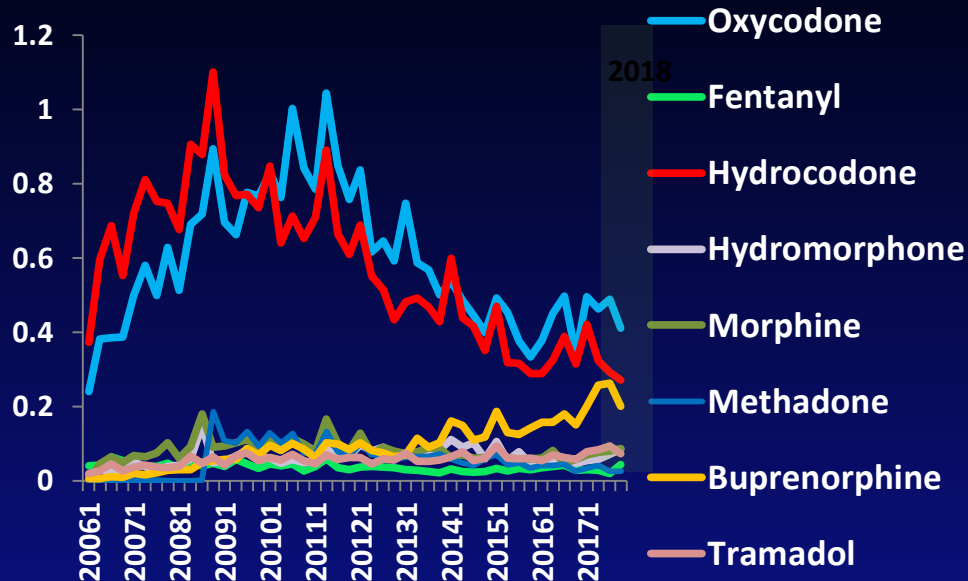
oxycodone, hydrocodone,
hydromorphone, fentanyl,
morphine, tramadol



United States, RADARS Drug Diversion Program Intentional Abuse, 2006 - 2018

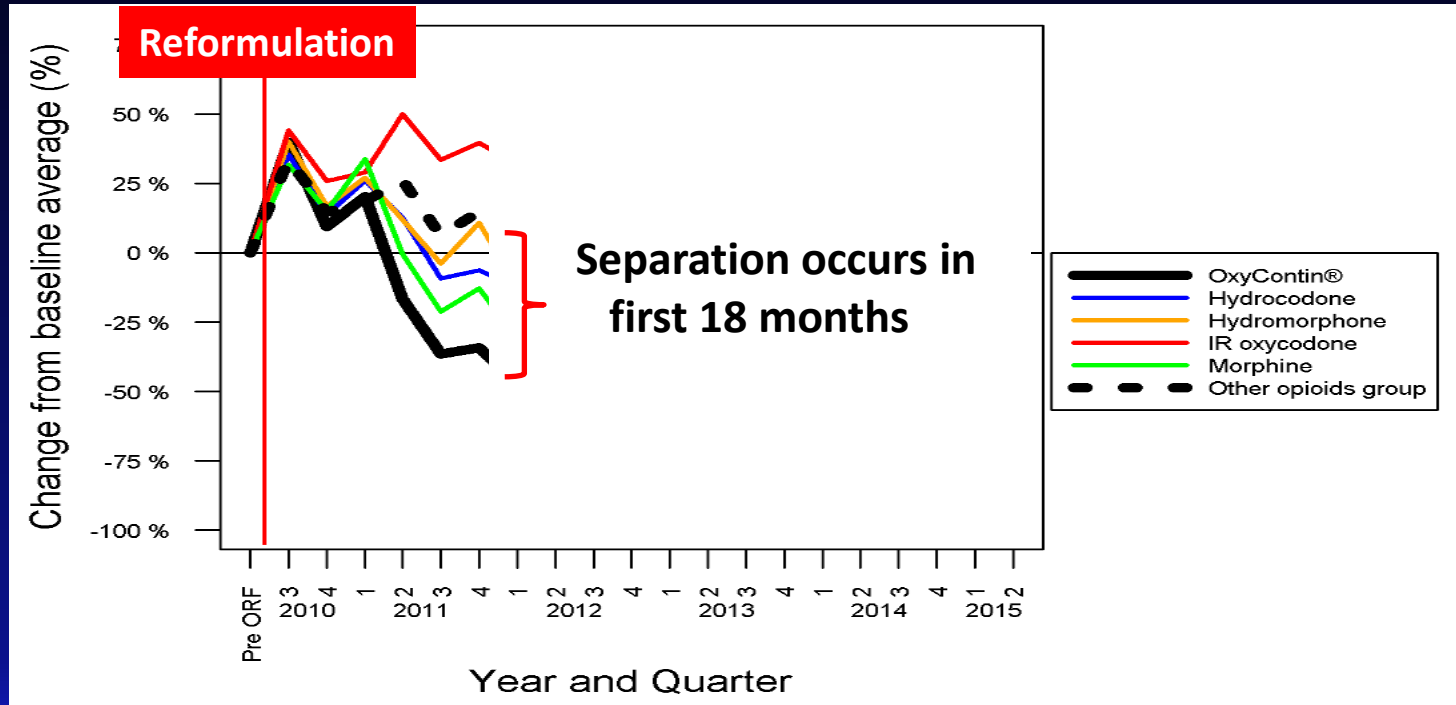


oxycodone, hydrocodone,
hydromorphone, fentanyl,
morphine, tramadol



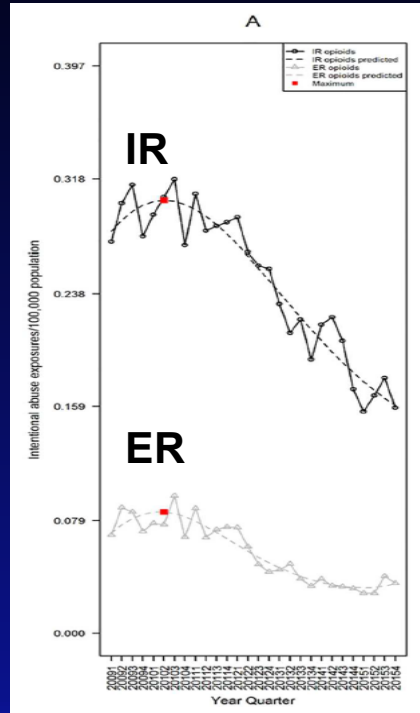
Abuse Deterrent Formulations - Oxycodone ER, Drug Diversion Program, 2009 - 2015

250 law enforcement investigators in 49 states

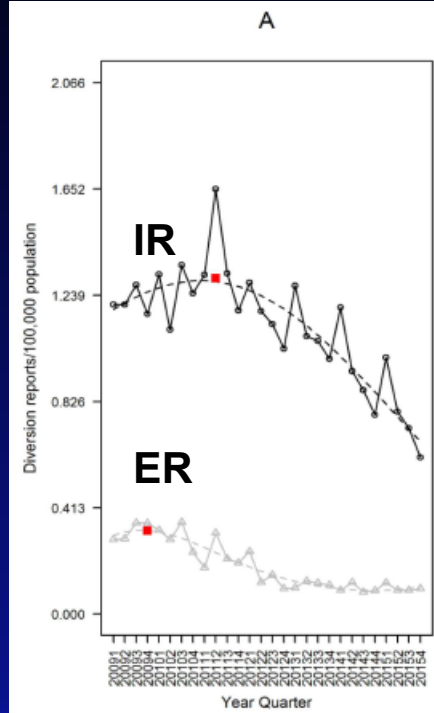


ER Opioids Caused the Opioid Epidemic?

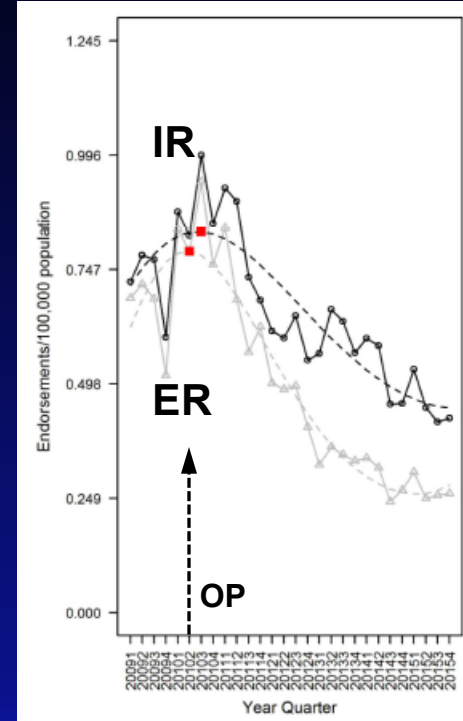
Poison Center



Drug Diversion



Treatment Centers



Speakers

- Prescription Drug Misuse in the U.K.
 - David Wood, MD
- Prescription Drug Misuse in Spain
 - Marta Torrens Melich, MD, PhD
- Prescription Drug Misuse in Germany
 - John Schwarz, PhD
- Prescription Drug Misuse in France and Italy
 - Janetta Iwanicki, MD