

Pharmacology 2019 - Prescription Medicine Misuse

How Can We Determine the Issues Related to Prescription Medicine Misuse and Problems in the US?

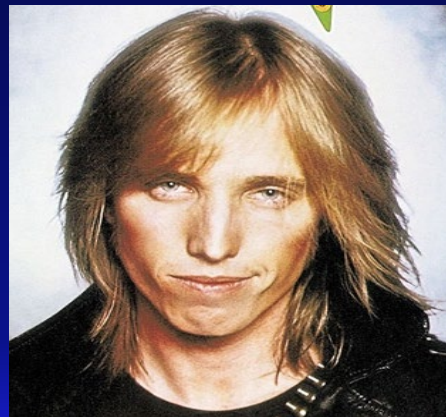
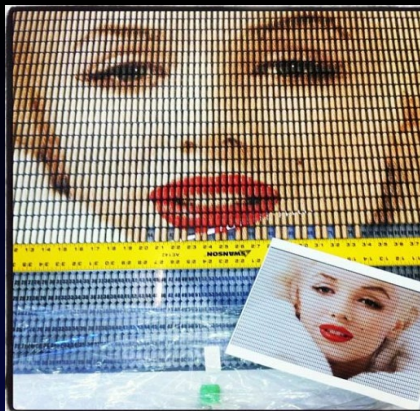
Richard C. Dart, MD, PhD

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Professor, University of Colorado

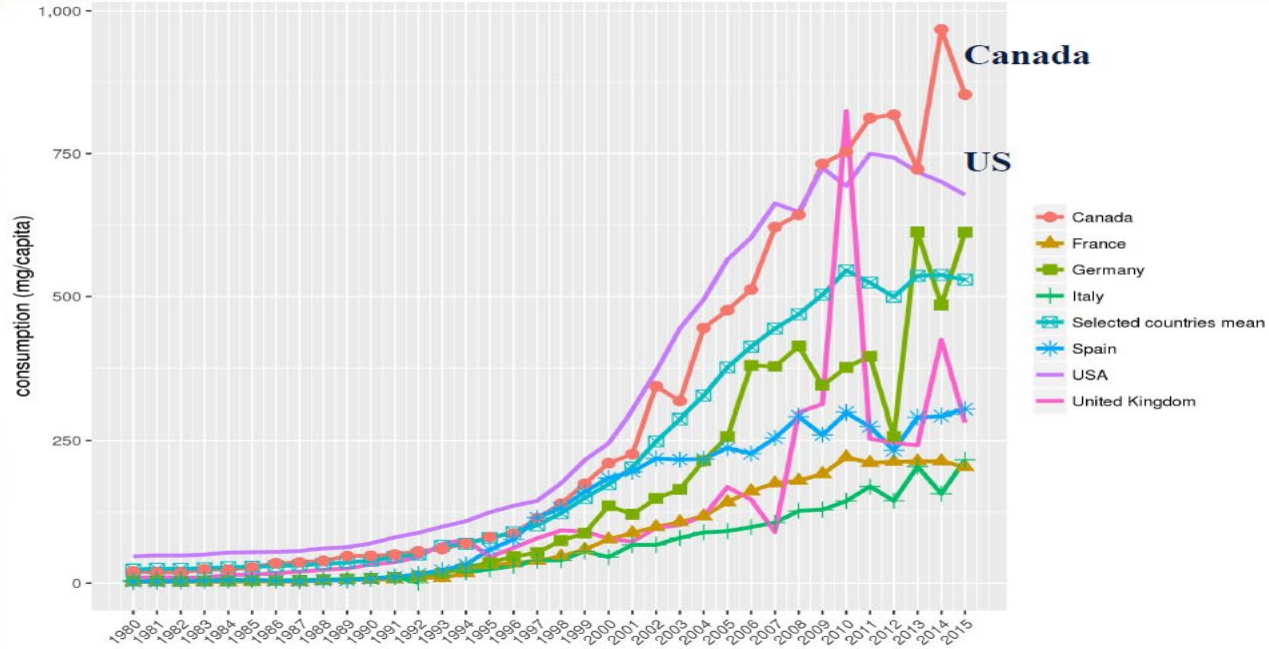
Competing Interests

- 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



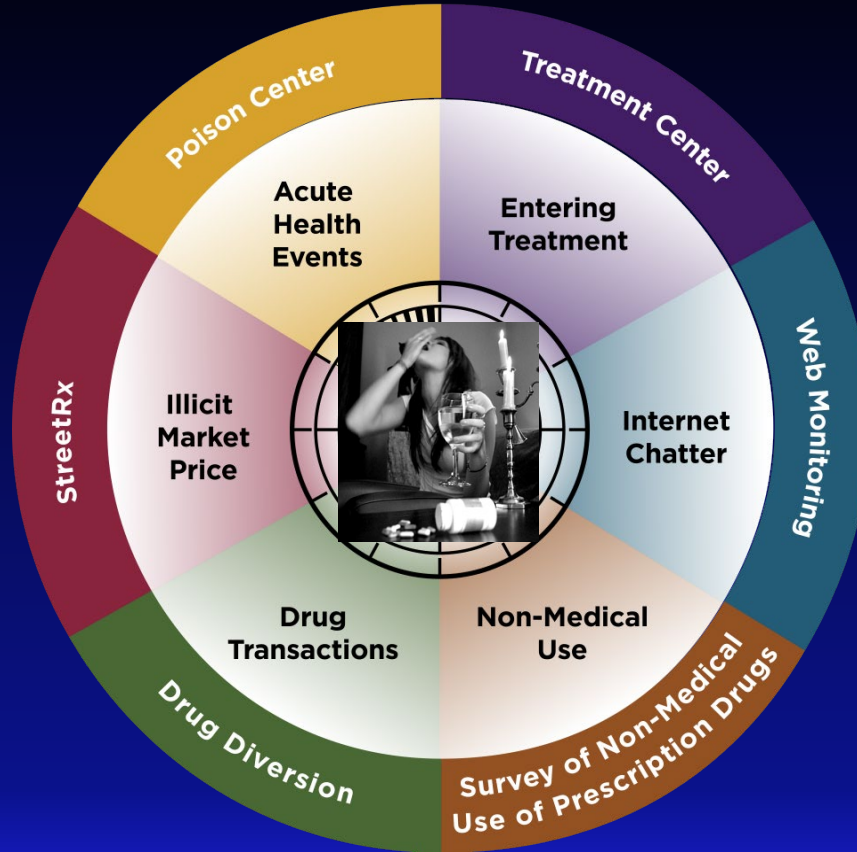


Opioids	Benzodiazepines	Antipsychotics	AEDs
<ul style="list-style-type: none">• Heroin• Fentanyl• Rx analgesics• Loperamide	<ul style="list-style-type: none">• Alprazolam• Diazepam	<ul style="list-style-type: none">• Quetiapine• Olanzapine	<ul style="list-style-type: none">• Pregabalin• Gabapentin
	Stimulants	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

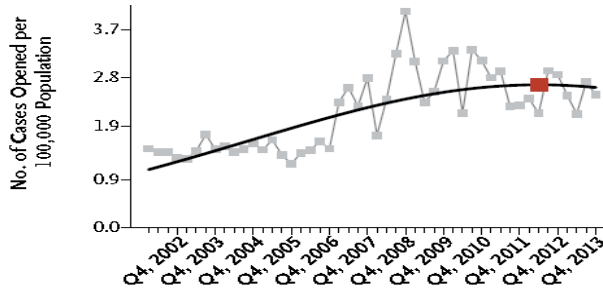
- All the usual challenges of postmarketing surveillance +
 - Regulators' focus on *intended* use of a drug
 - *Unexpected* Adverse Events
 - Not on Expected Events from Unusual and Inappropriate Uses of the Drug!
- Hidden nature of substance abuse
 - Illegal behaviors
 - Anonymity and Confidentiality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

Mosaic Surveillance

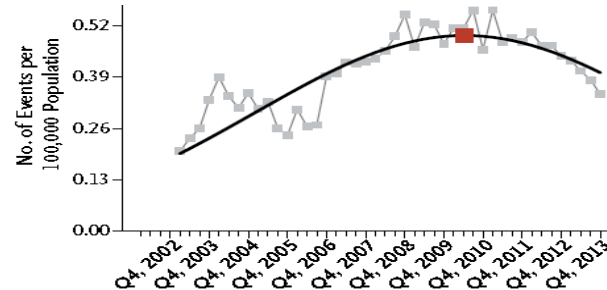


Rx Drug Abuse Decreasing in US Since 2011

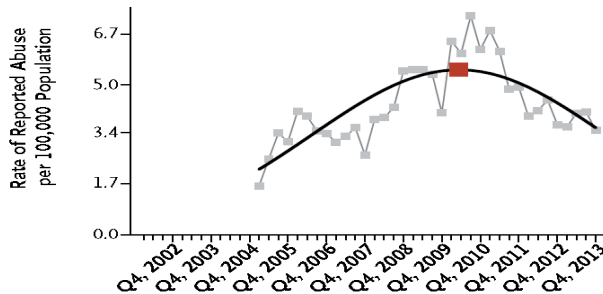
Rate of Drug-Diversion Cases Opened



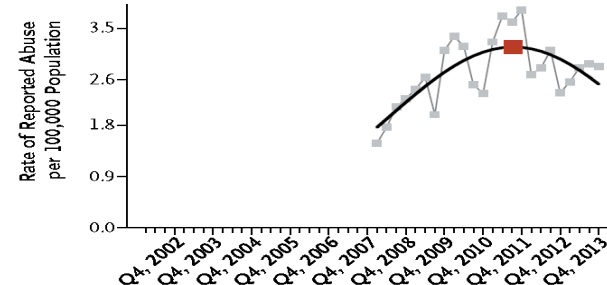
Rate of Poison Center Intent. Abuse



Rate of Endorsement – OTP



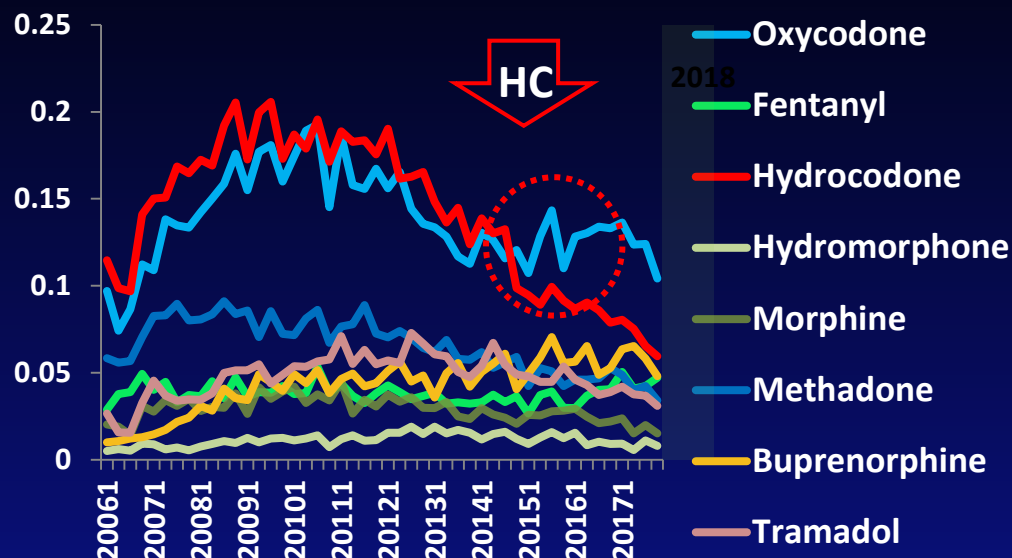
Rate of Endorsement – SKIP



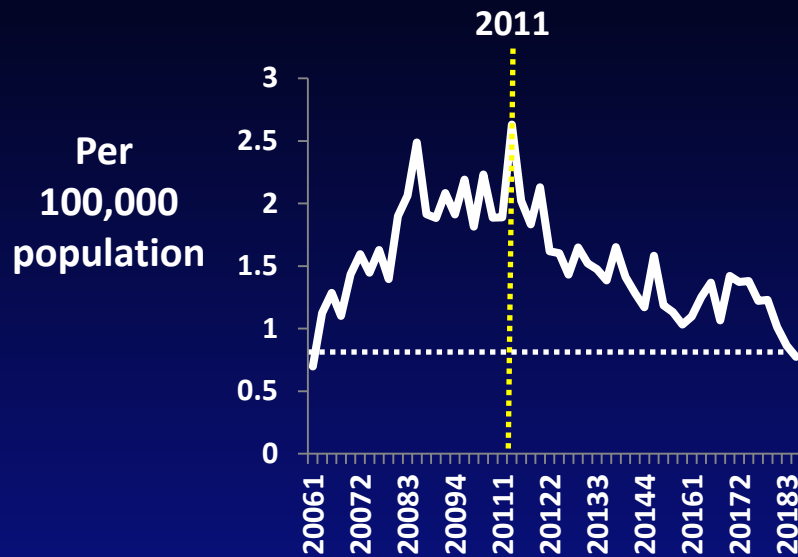
United States, RADARS Poison Center Program Intentional Abuse, 2006 - 2018



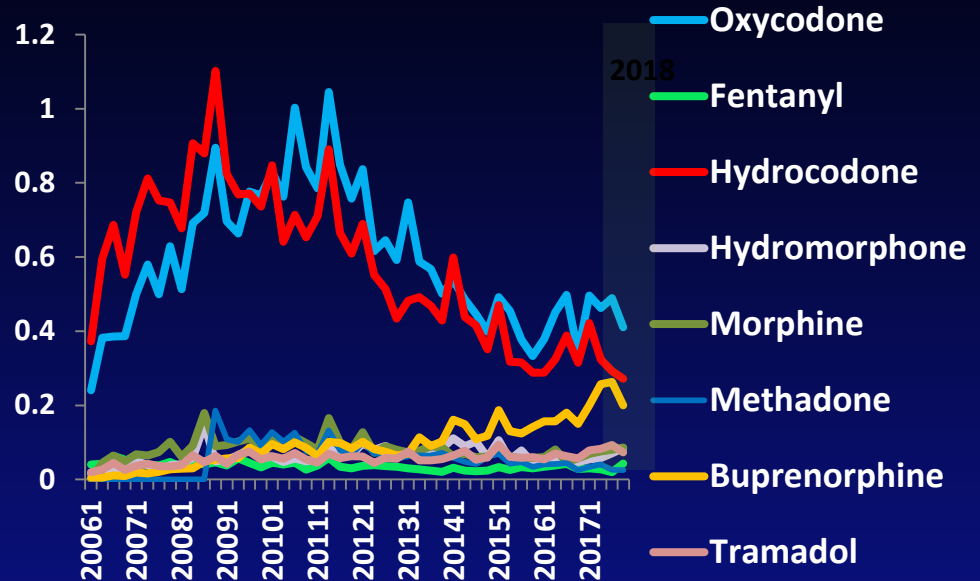
oxycodone, hydrocodone,
hydromorphone, fentanyl,
morphine, tramadol



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

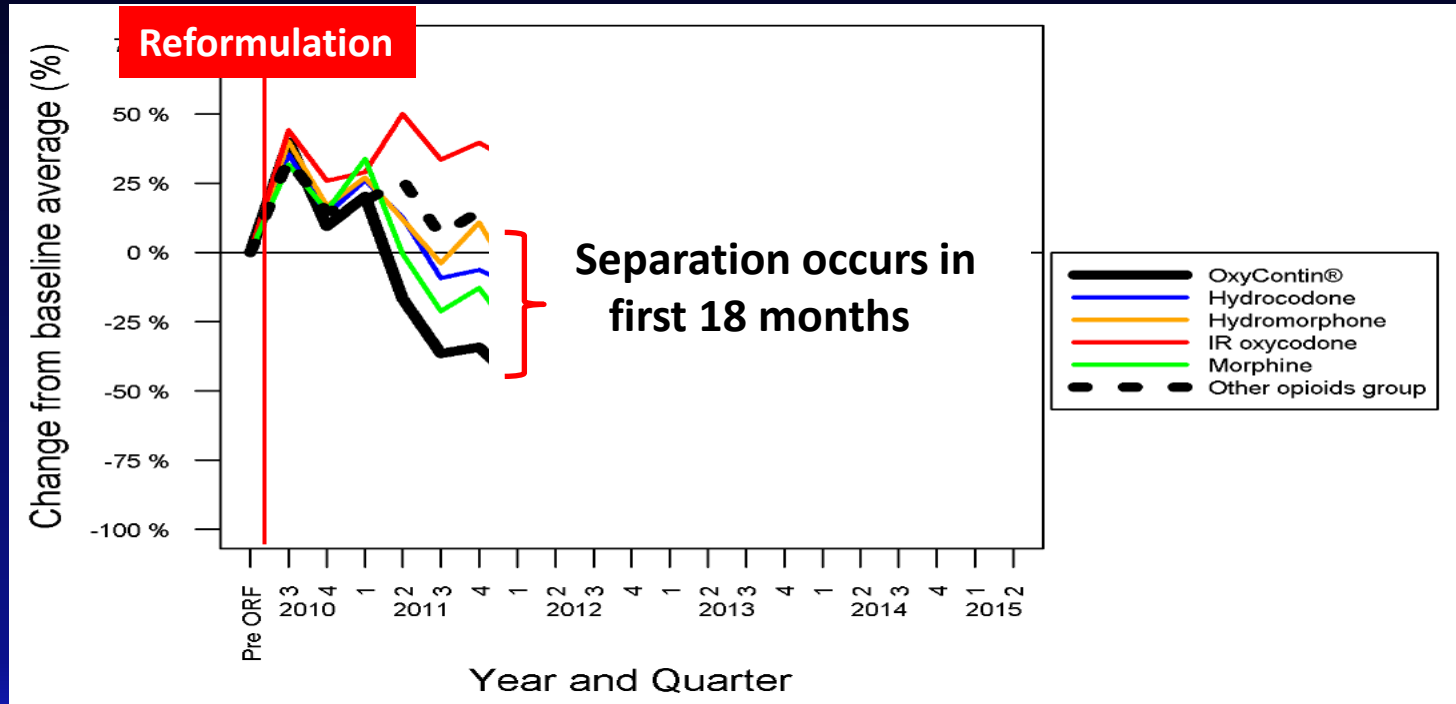


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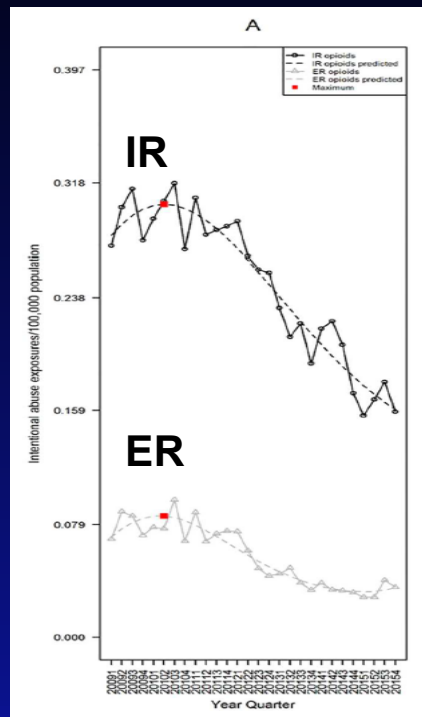
Abuse Deterrent Formulations - Oxycodone ER (OxyContin), Drug Diversion Program, 2009 - 2015

250 law enforcement investigators in 49 states

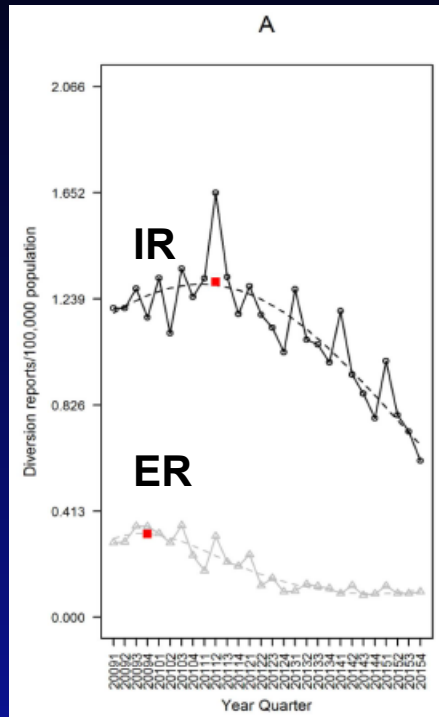


ER Opioids Caused the Opioid Epidemic?

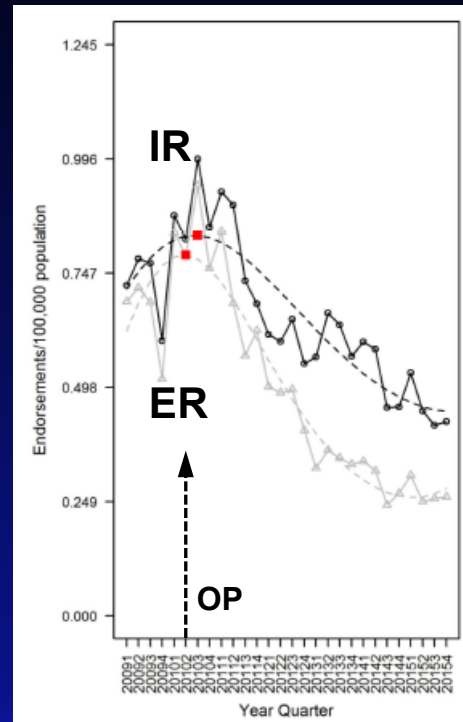
Poison Center



Drug Diversion

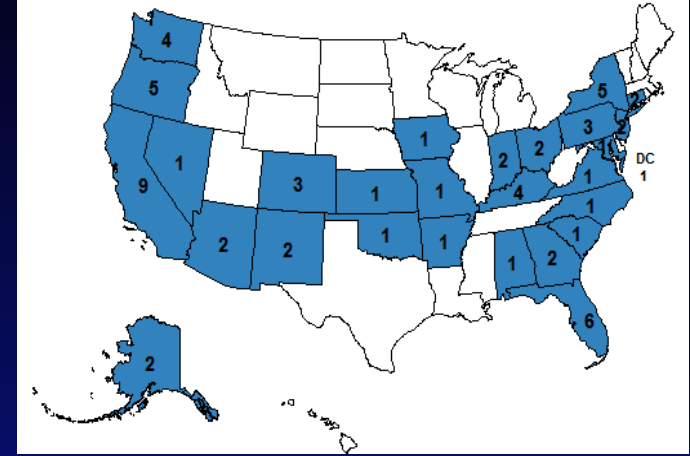


Treatment Centers



StreetRx: If the Prescription Drug Market is Decreasing, Where is the Drug Coming From?

- 4 months: 67 reports of Rx oxycodone from Canada reported to **US** StreetRx website.
 - 51 (76%) confirmed drug was acquired in the US and used in Canada.
 - 9 (13%) - the drug was acquired in Canada but used in the US.
 - 7 (10%) did not report country



- 62 (92.5%) reports of crushable oxycodone products
- 5 (7.5%) reports of OxyNEO, the only difficult to crush (tamper-resistant) oxycodone product in our analysis.

Many Thanks - Questions?
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