

# A Comparison of Attempted Suicide Rates by Methylphenidate Exposure in Adult and Adolescent Populations

2015 Annual Meeting  
College for Problems on Drug Dependence  
Phoenix, Arizona

June 17, 2015

Emily McRae, BA  
Richard Dart, MD, PhD



Rocky Mountain Poison and Drug Center, Denver Health, Denver, CO

# Disclosure

- RADARS® System is a department of the Denver Health and Hospital Authority (DHHA), the public safety net hospital for Denver, Colorado
- Most manufacturers of prescription opioids or stimulants subscribe to RADARS System.
- Subscribers receive information, but do not participate in developing the System, data collection, or analysis of the data. They do not have access to the raw data.
- Employees are prohibited from personal financial relationships with any other company.

# Background

- Suicide rates in the U.S. for adolescents and adults increased 2009-2012.<sup>1</sup>
- Poisoning has been the third-leading method of committing suicide.
- 75% of suicides by poisoning were due to alcohol or drug overdose (rather than carbon monoxide or other types of poison).<sup>2</sup>

<sup>1</sup> Centers for Disease Control and Prevention Data & Statistics Fatal Injury Report for 2012.

<sup>2</sup> Centers for Disease Control and Prevention. Understanding Suicide 2010.

# Mosaic Surveillance of Prescription Drug Abuse - 2013

**Acute Health  
Events**

50 Poison  
centers  
491,874 opioid  
mentions

**Drug  
Transactions**

Criminal Justice  
260 agency  
146,786 opioid  
mentions

**Entering  
Treatment**

Opioid Tx  
Program  
66 programs  
183,573 mentions

**Entering  
Treatment**

Survey Key  
Informant Pts - 109  
practices, 45 states  
64,678 mentions

**New  
Initiates**

College Survey  
2000 students  
11,871 mentions

**Illicit Market  
Price**

StreetRx.com  
Users/Buyers, 50  
states  
8,441 price entries

**Web  
Monitoring**

> 150 M sites  
> 35,000 posts  
coded for  
analysis



# Methylphenidate

Prescription stimulant used to treat ADD/ADHD.

Popular brand names include:



Ritalin®



Concerta®

# Objectives

- Has the rate of self-harm attempts involving methylphenidate changed in adolescent and adult populations?
- How do adolescent and adult populations compare in self-harm attempts with prescription methylphenidate?

# Poison Center Program - Methods

- “Suspected suicide” cases are formally defined:
  - Inappropriate use of a substance for self destructive or manipulative reasons.
  - Based on judgment of trained RN/Pharmacist
- Two populations of interest:
  - Adolescents: 13 and 19 years old (N= 3695)
  - Adults: 20 years and older (N=2853)
- Time period:
  - 1<sup>st</sup> quarter 2009 to 2<sup>nd</sup> quarter 2014

# Methods

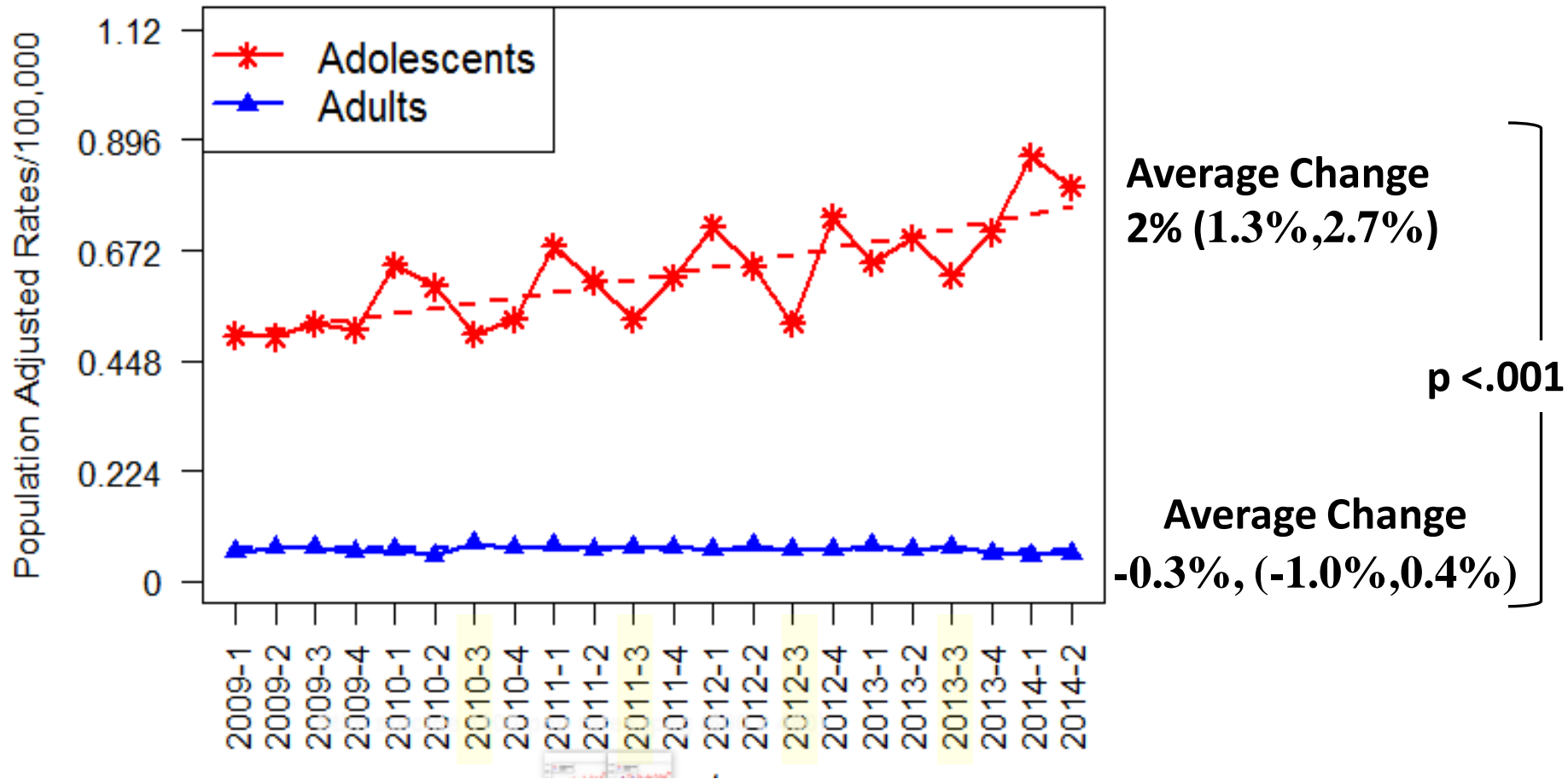
- Two rates were calculated:
  - Population adjusted
  - Prescription adjusted (takes into account amount of drug dispensed from retail pharmacies in each quarter)

Number of methylphenidate suspected suicide cases  
divided by population or prescriptions

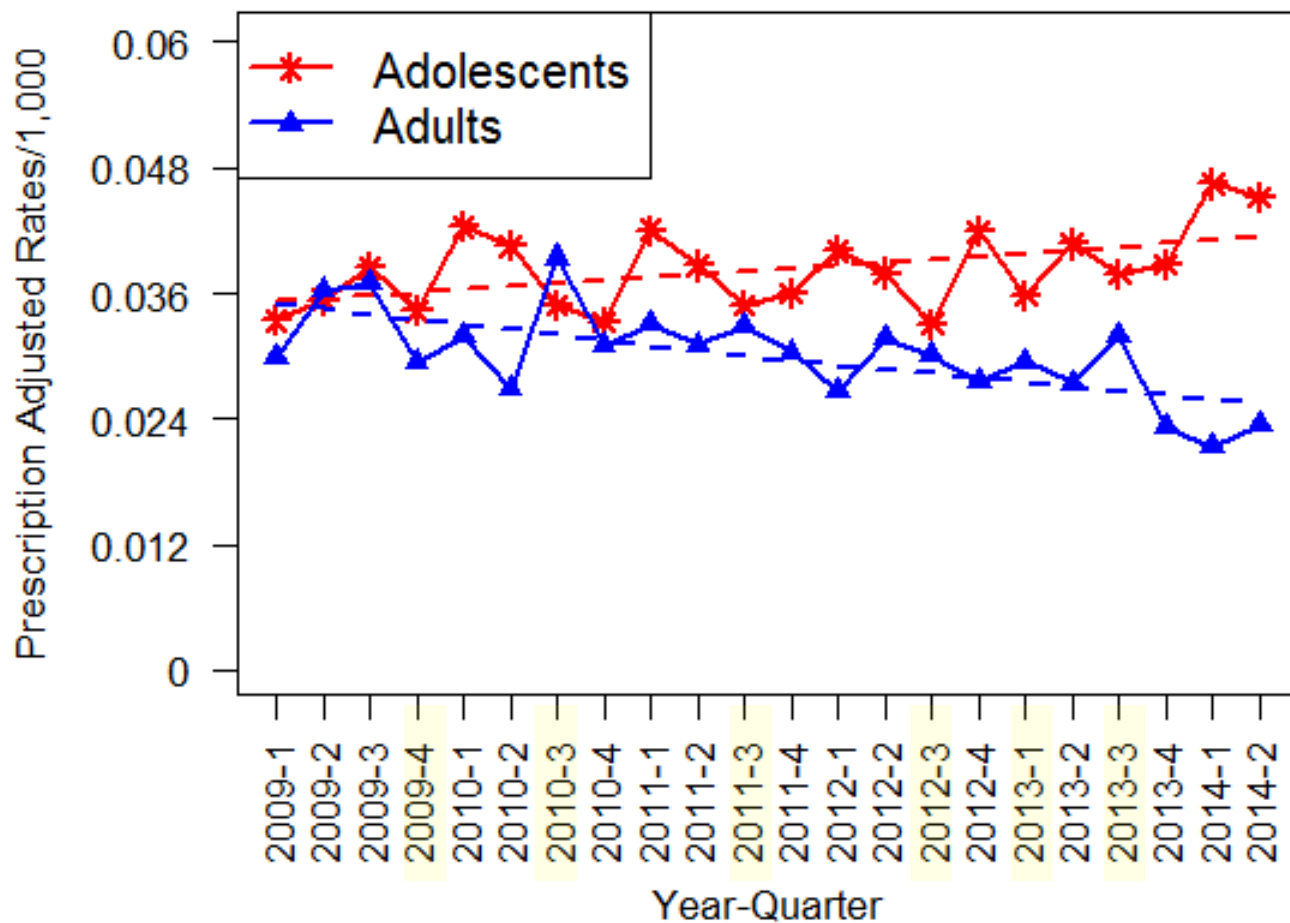
- Poisson regression was used to assess trends



# Results – Methylphenidate Suspected Suicide Cases Adjusted for Population, 2009 - 2014



# Results – Methylphenidate Suspected Suicide Cases Adjusted for Prescription Volume



**Average Change**  
**0.8%, (0.1%,1.4%)**

**p < .001**

**Average Change**  
**-1.5%, (-2.3%,-0.7%)**

# Limitations

- Spontaneous reporting
- Self reporting
- Judgment of specialist in poison information (specially trained nurse or pharmacist)

# Discussion

- Trends in Poison Center data suggest that adolescents may be a higher risk group for attempting suicide using methylphenidate.
  - Rate of increase remains, but is small after adjustment for prescription availability
- Why?
  - Adolescents with easier access to methylphenidate medications over other prescription drugs?
  - Adults with easier access to other pharmaceuticals?