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

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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 2009-2012.¹

• 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).²

² 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 Initiatives**: 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\textsuperscript{st} quarter 2009 to 2\textsuperscript{nd} 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

Average Change 2% (1.3%, 2.7%)  
\[ p < .001 \]

Average Change -0.3%, (-1.0%, 0.4%)
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?