



## Abuse-Deterrent Formulations: Anticipated and Unanticipated Outcomes

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# + Conflicts of Interest

- Scientific Advisory Board for RADARS® (Researched Abuse, Diversion and Addiction-Related Surveillance) System, funded through an unrestricted research grant sponsored by Denver Health and Hospital Authority (DHHA), which collects subscription fees from 14 pharmaceutical firms.
- No other conflicts of interest.

# + Methodology



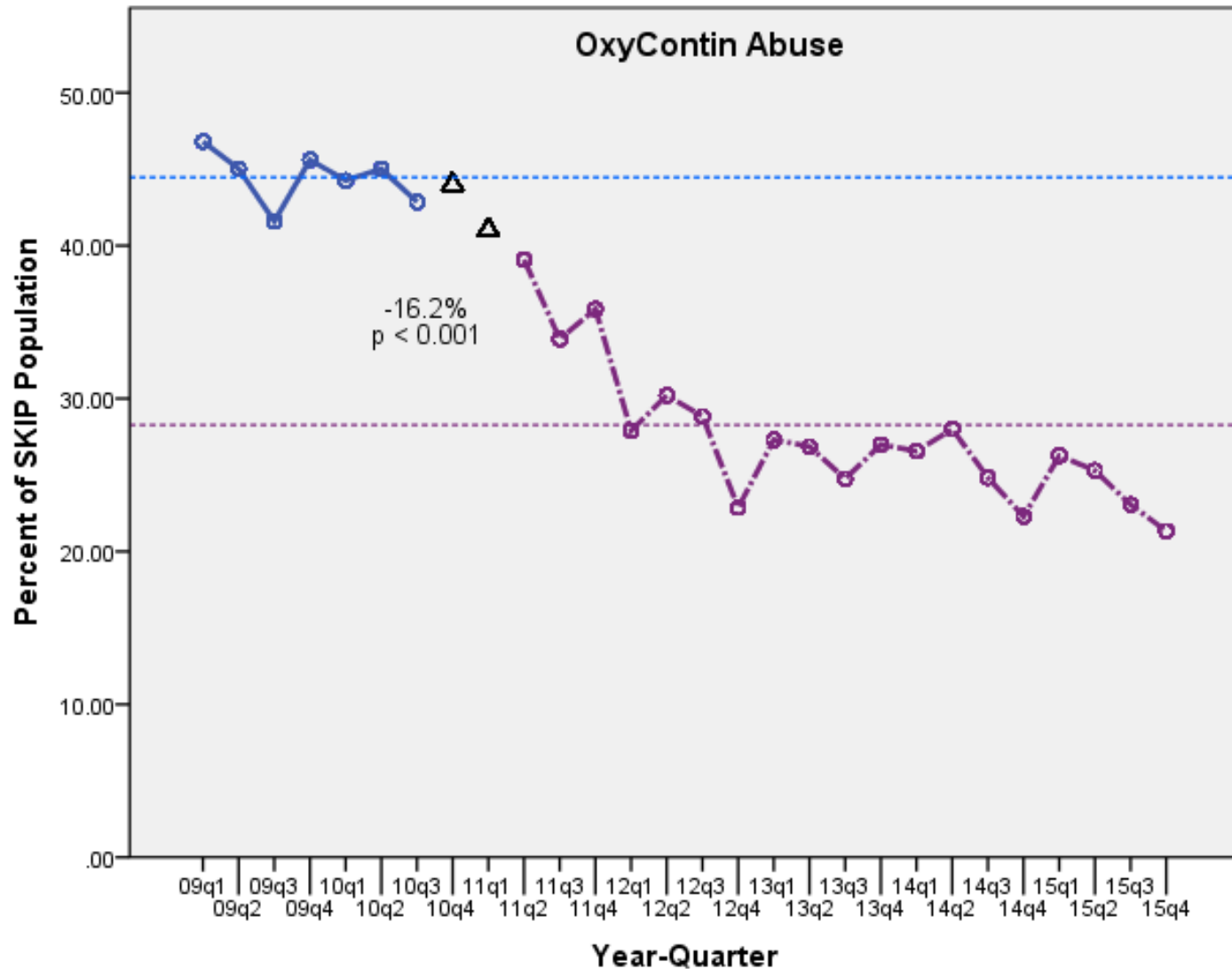
- Survey of Key Informants' Patients (SKIP) Program
  - Patients entering 1 of 150 substance abuse treatment centers across the country.
  - 600-800 opioid abusers complete an anonymous survey per quarter.
- Researchers and Participants Interacting Directly (RAPID)
  - Follow-up cohort of SKIP participants.
  - Over 600 registered participants complete quarterly questionnaires.



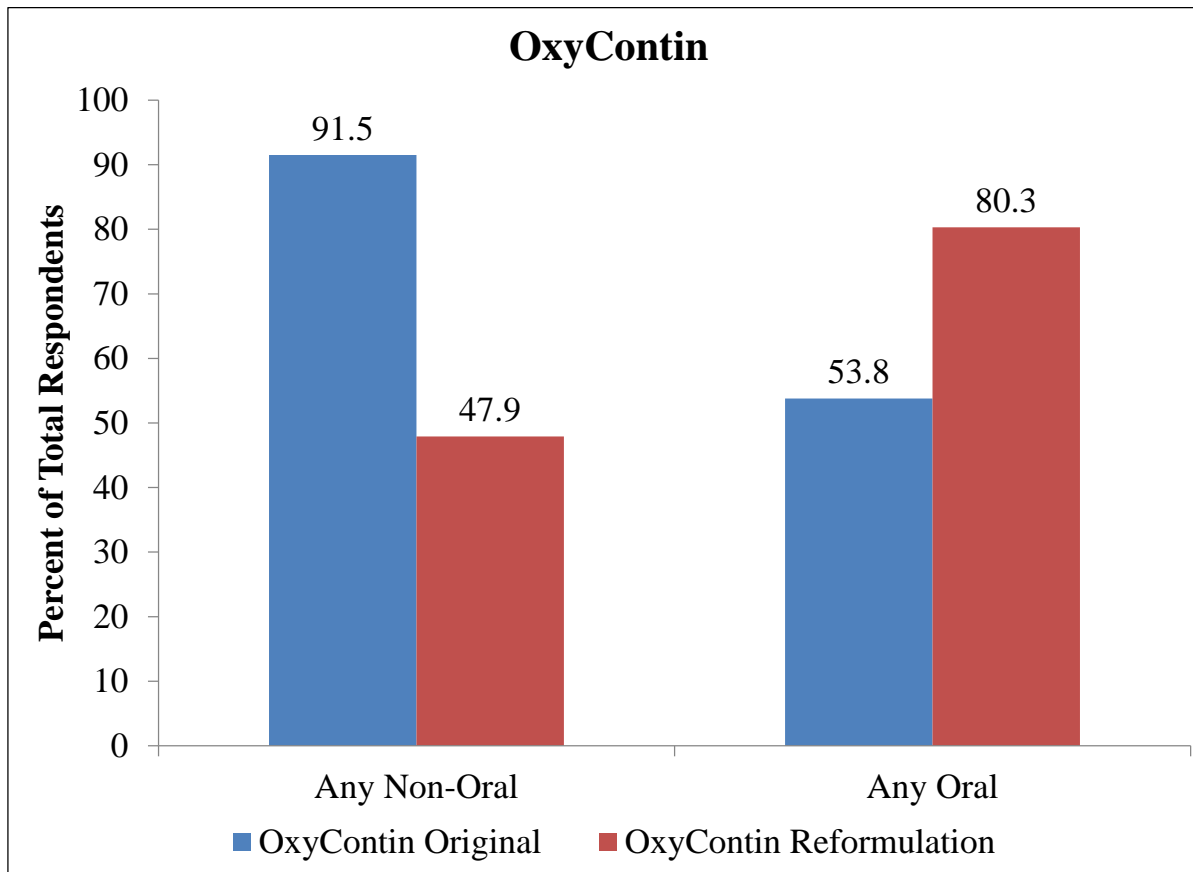
# Abuse-Deterrent OxyContin



# + Effect on abuse



# + How did the ADF impact OxyContin abusers?

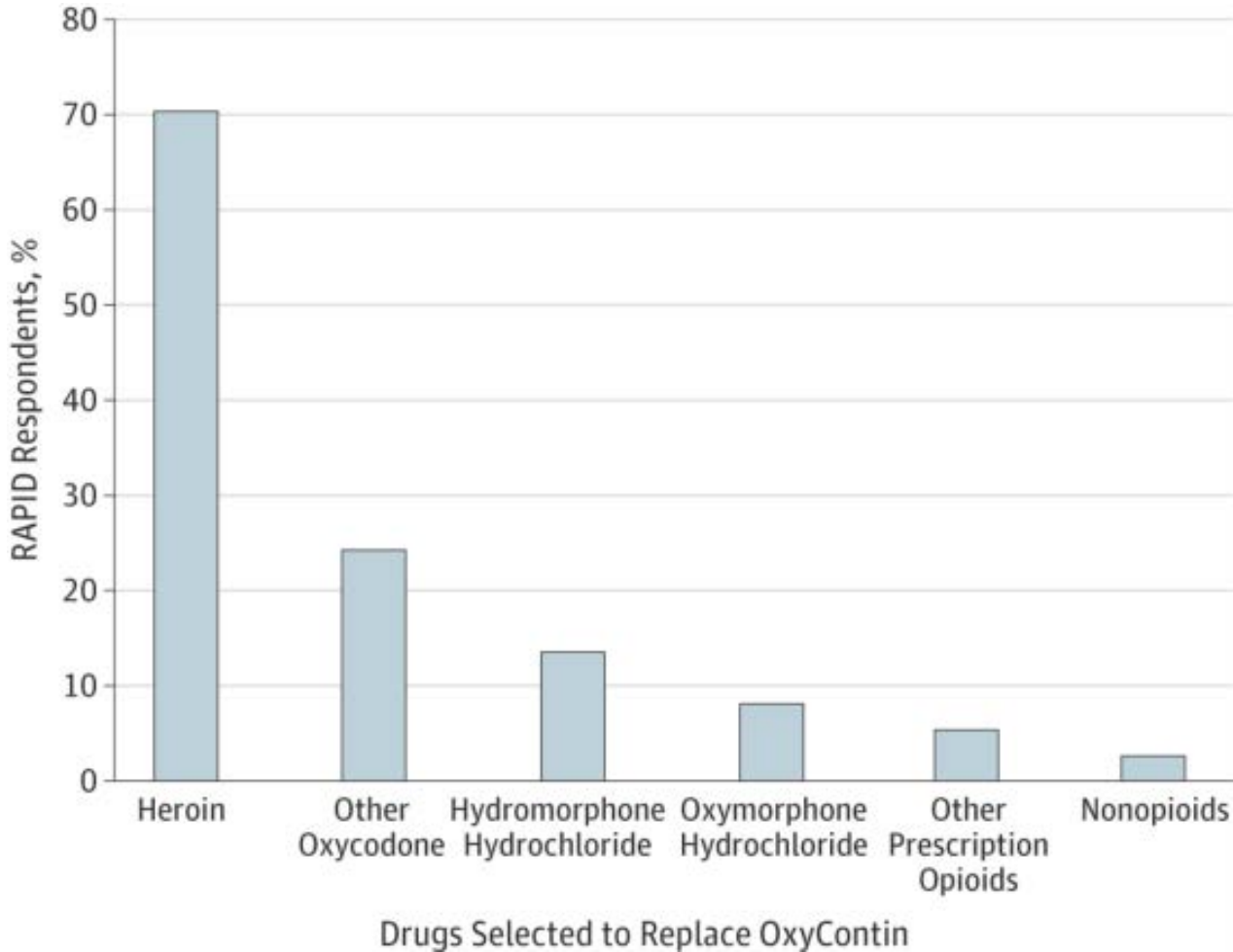




# Shifts to other drugs



# + Drugs selected to “replace” OxyContin



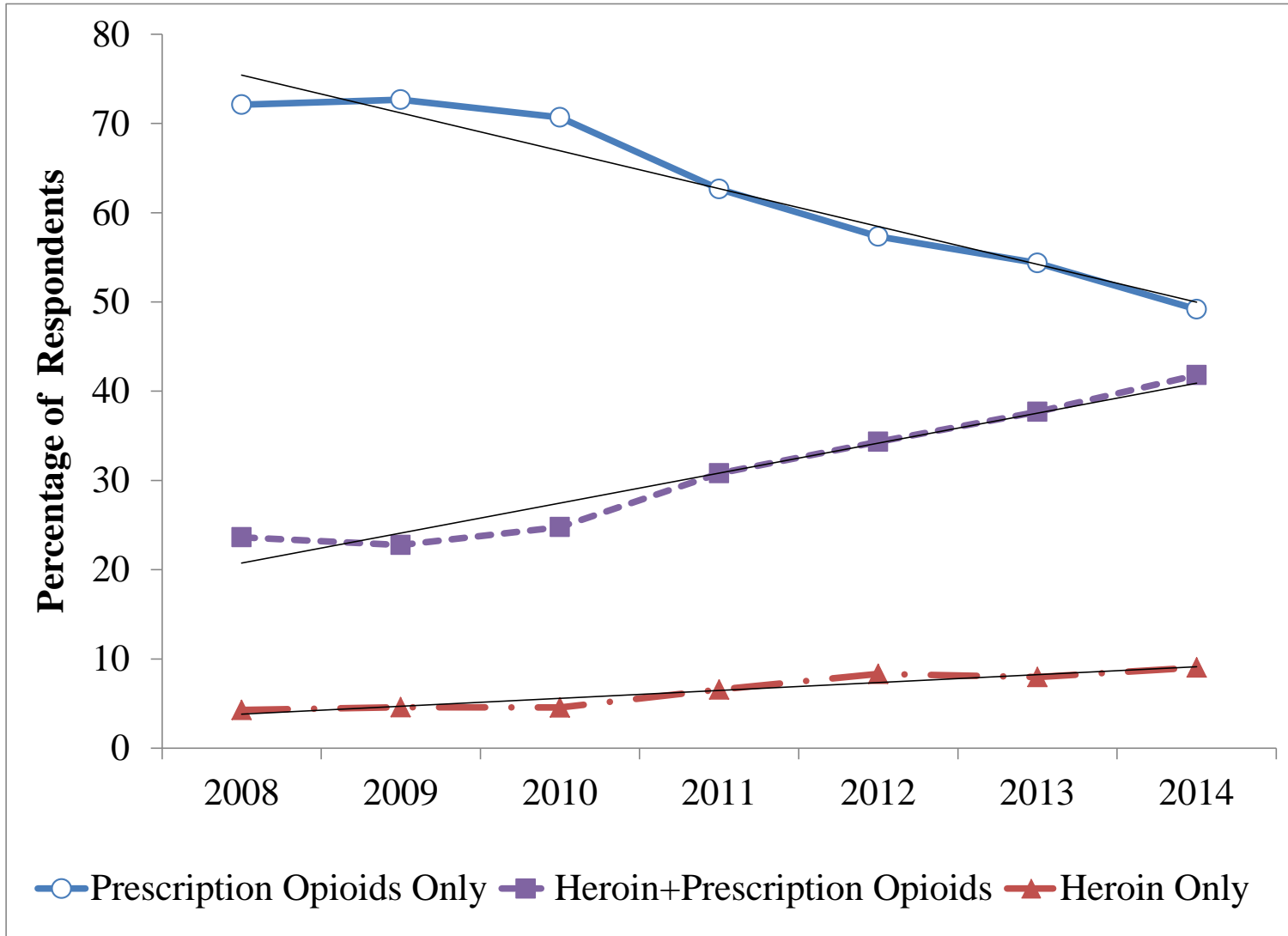


# + Increases in Heroin Abuse

- Are ADFs solely responsible for the increase in the use of heroin?
  - Of course not.
- Many factors drive the use of heroin.
  - Price.
  - Availability.
  - The “high.”
  - Lessening of social stigma.



# Increases in Heroin Abuse

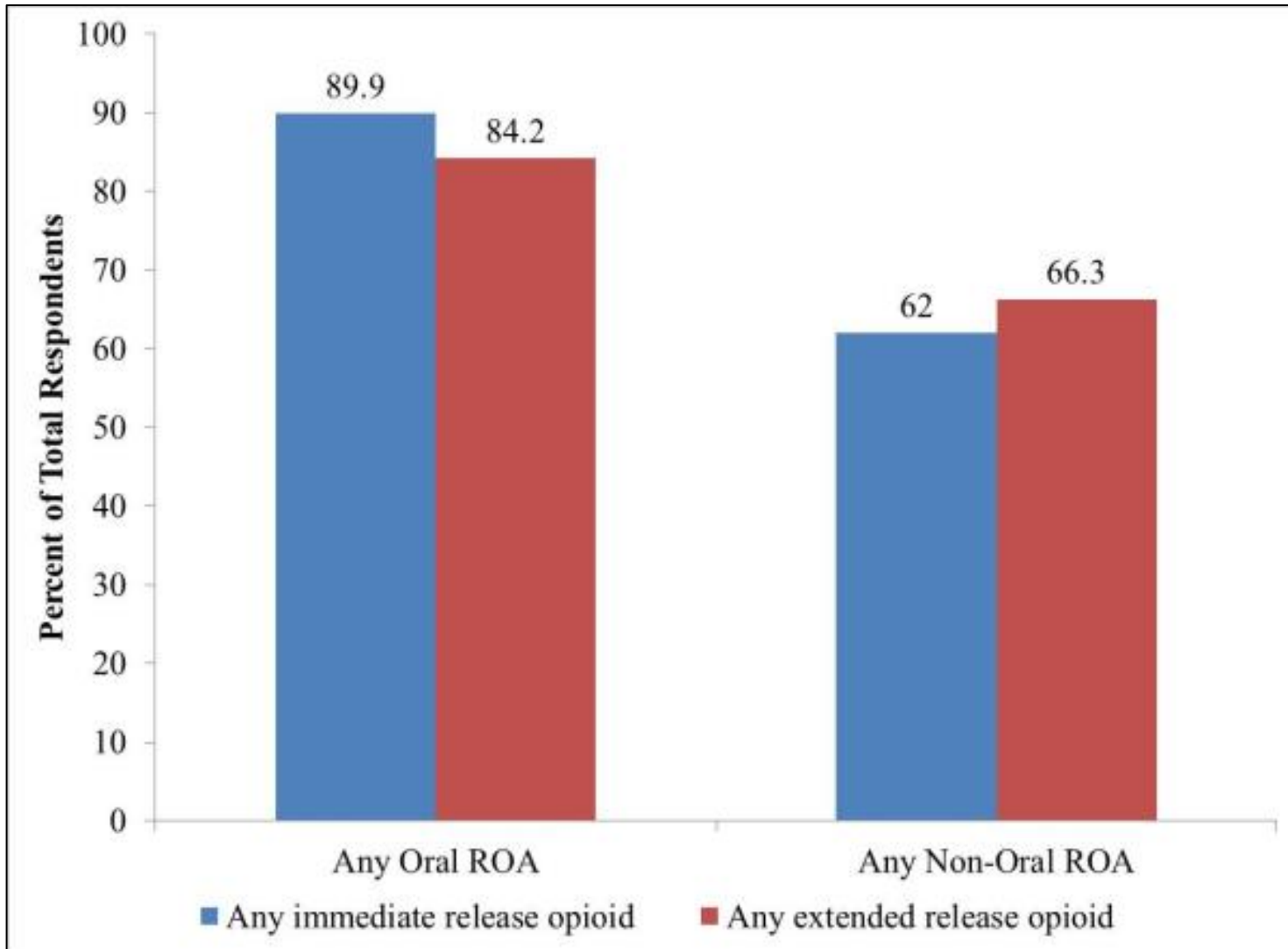




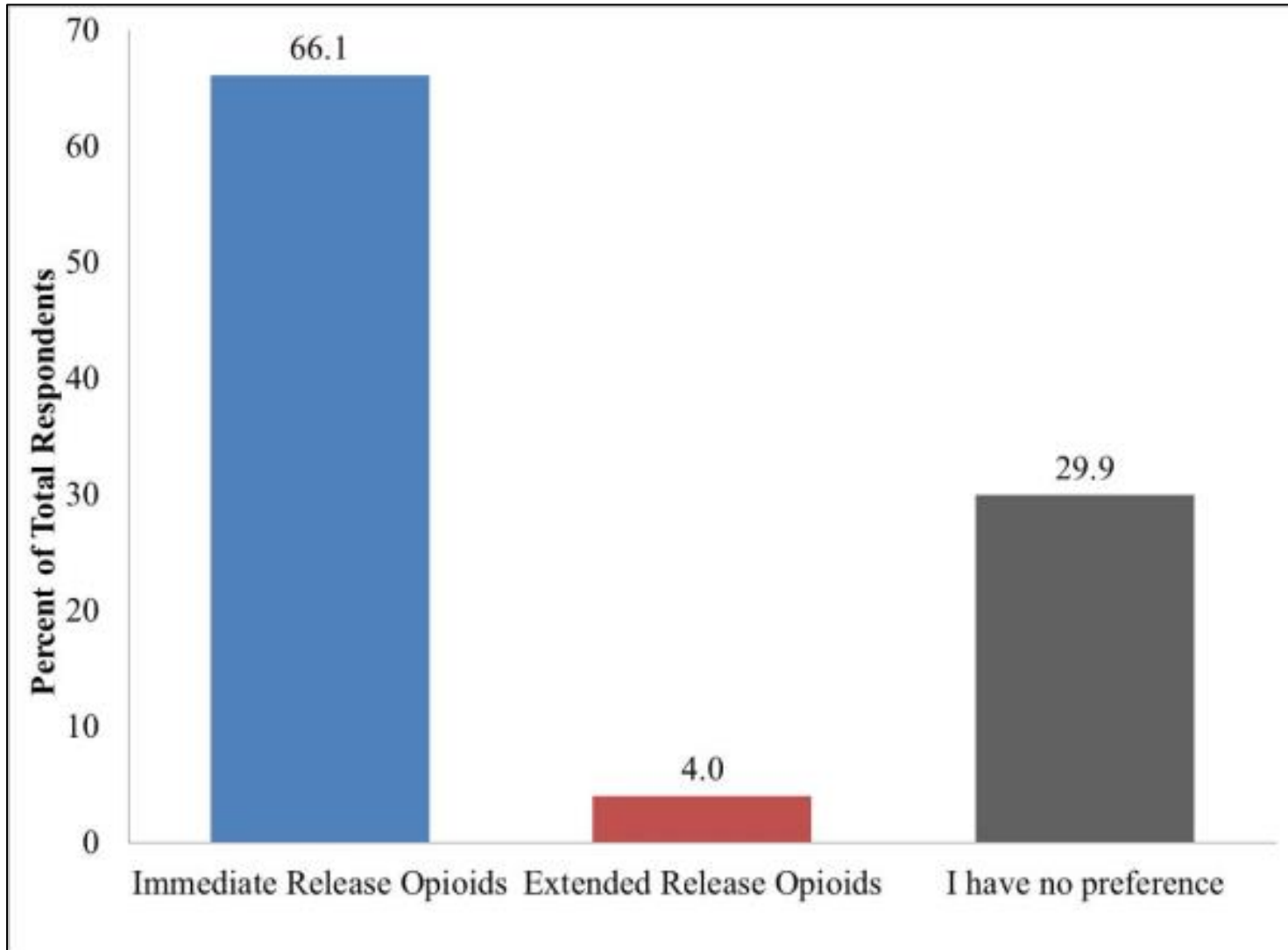
# Immediate-release formulations



# + Non-Oral vs. Oral Abuse



# + Formulation Preference



# + IR Preference

- 73%, immediacy of the high and strength of the initial “rush.”
- 31%, IR opioids were easier to abuse through non-oral routes of administration.
  - Several mentions of difficulty with ADFs.
- Only 2% attributed preference to access and availability.



## + IR Preference

“If I'm going to take a drug I like to feel high and the effects right away. I don't want to wait half an hour until the high hits me because you never know how long or when exactly it will hit and I end up taking to many, wanting a faster effect. If I'm gonna do a drug I want to get high right there and then.”



## + IR Preference

“To get a good feeling from extended release opioids, one must apply a good deal of chemistry and/or preparation. It takes some filing, some powdering, and some use of an acidic liquid, like coca-cola in order to break down the extended release properties.”





# + Conclusions

- ADFs have the potential to reduce abuse, primarily through non-oral routes of administration.
- ADFs can result in some shifts to other drugs of abuse.
- ADFs should be considered for immediate-release as well as extended-release opioids.