



Opioid Medication Discontinuation and Risk of Adverse Opioid-Related Health Care Events

Green Mountain Care Board, September 25, 2019

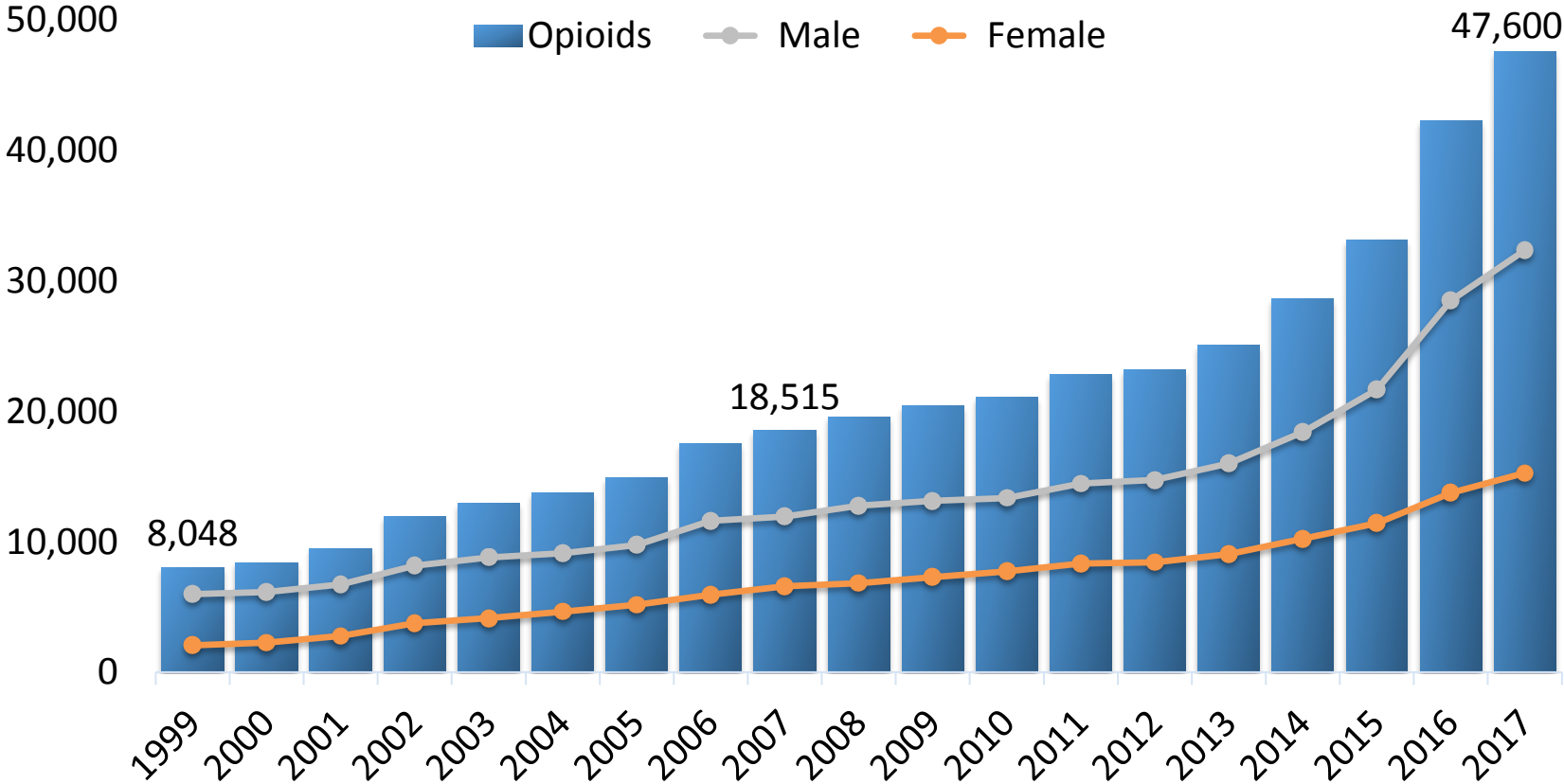
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RTI International

Acknowledgements

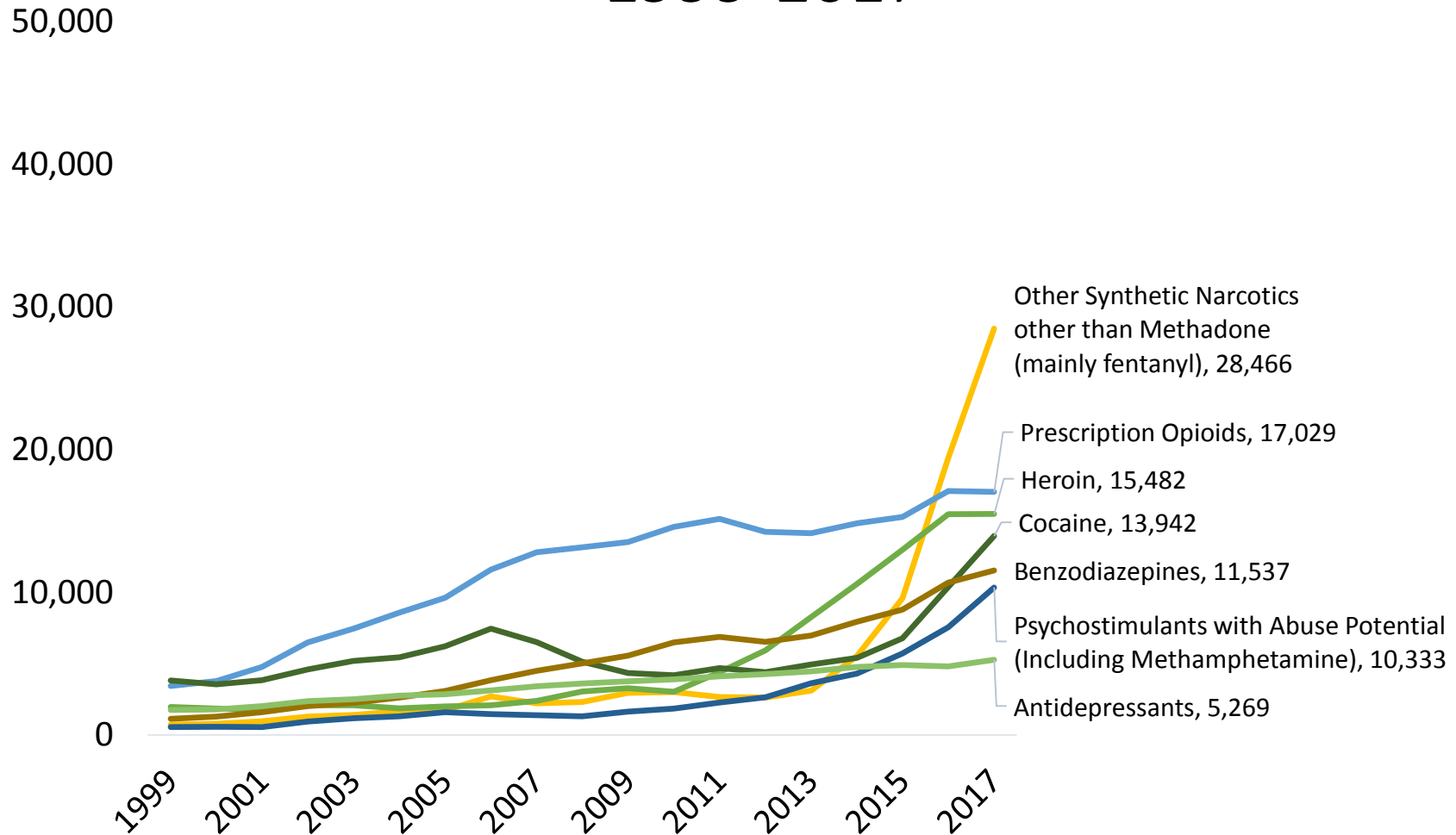
- **Funding for the research came from RTI international**
 - Part of a larger initiative to “test drive” APCD Data
- **RTI international has also invested in tools to reduce the impact of the opioid epidemic**
 - <https://www.rti.org/emerging-issue/preventing-opioid-use-misuse-and-overdose>
- **Research has been published in the Journal of Substance Abuse Treatment (JSAT)**
 - Mark TL, Parish W. Opioid medication discontinuation and risk of adverse opioid-related health care events. J Subst Abuse Treat. 2019 Aug;103:58-63. Epub 2019 May 5.

National Drug Overdose Deaths Involving Any Opioid, 1999-2017



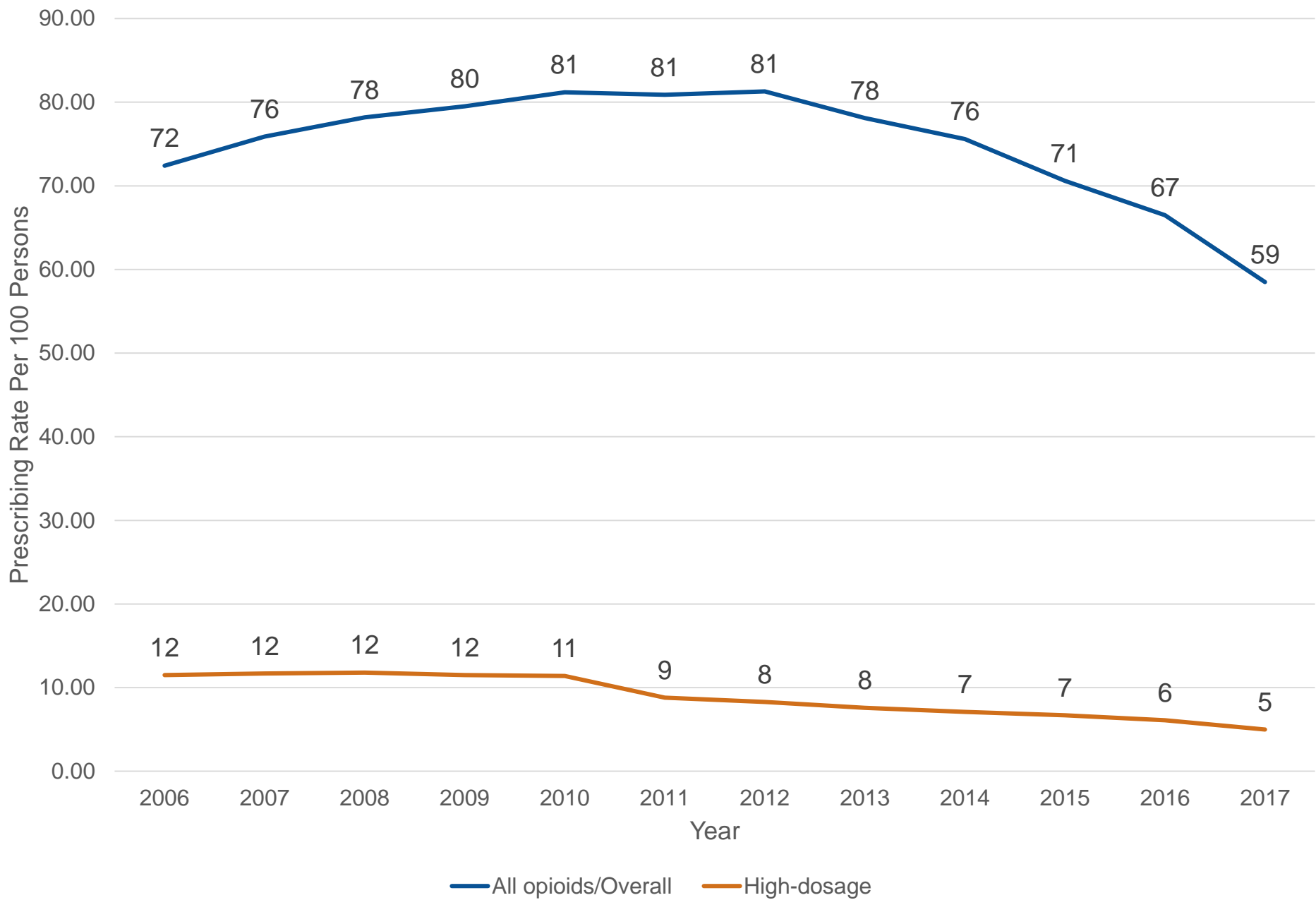
Source: : Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018

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Trends in Annual Opioid Prescribing Rates by Overall and High-Dosage Prescriptions



Background

CDC and other organizations recommend reducing dosages slowly (10% per week)

Rapid tapering—defined as a 2-to 3-week taper period—may be recommended for some patients (persons with substance use disorder or unstable cardiac conditions).

Patients with diagnosed opioid use disorder should be given medication-assisted treatment.

Recommendations based on limited evidence

Source: CDC Guideline for Prescribing Opioids for Chronic Pain, April, 2016

Study Objective

- What is the time for discontinuation among long-term high dose prescription opioid users?
- Are clinical guidelines for tapering off opioid medications followed?
- What is the association between tapering time and the risk of negative health care consequences?

Study Methods

Data: Vermont Health Care Uniform Reporting and Evaluation System Medicaid data.

Study sample: Used opioids at a high dosage (>120 MMEs/day) for at least 90 consecutive days (NQF-Endorsed Measure of Opioid Misuse) and subsequently discontinued prescription opioid use.

Key independent variable: Taper time: number of days between starting to reduce daily dosage to discontinuation.

Dependent variable: Time to an adverse opioid-related health care event, where events include emergency department visits or inpatient admissions for opioid poisoning or any substance use disorder (primary dx).

Statistical methods: Cox proportional hazard, controlling for age, sex, opioid prescription fill patterns, physical and behavioral health comorbidities.

Members included in the VHCURES database, 2013–2017 (n = 752,065)

Had at least 2 prescription opioid fills on separate days for a total combined supply of at least 15 days (n = 70,102)

Aged 18–64 years old (n = 54,356)

Had full Medicaid benefits (n = 20,602)

Not dually-eligible for Medicare and Medicaid (n = 16,172)

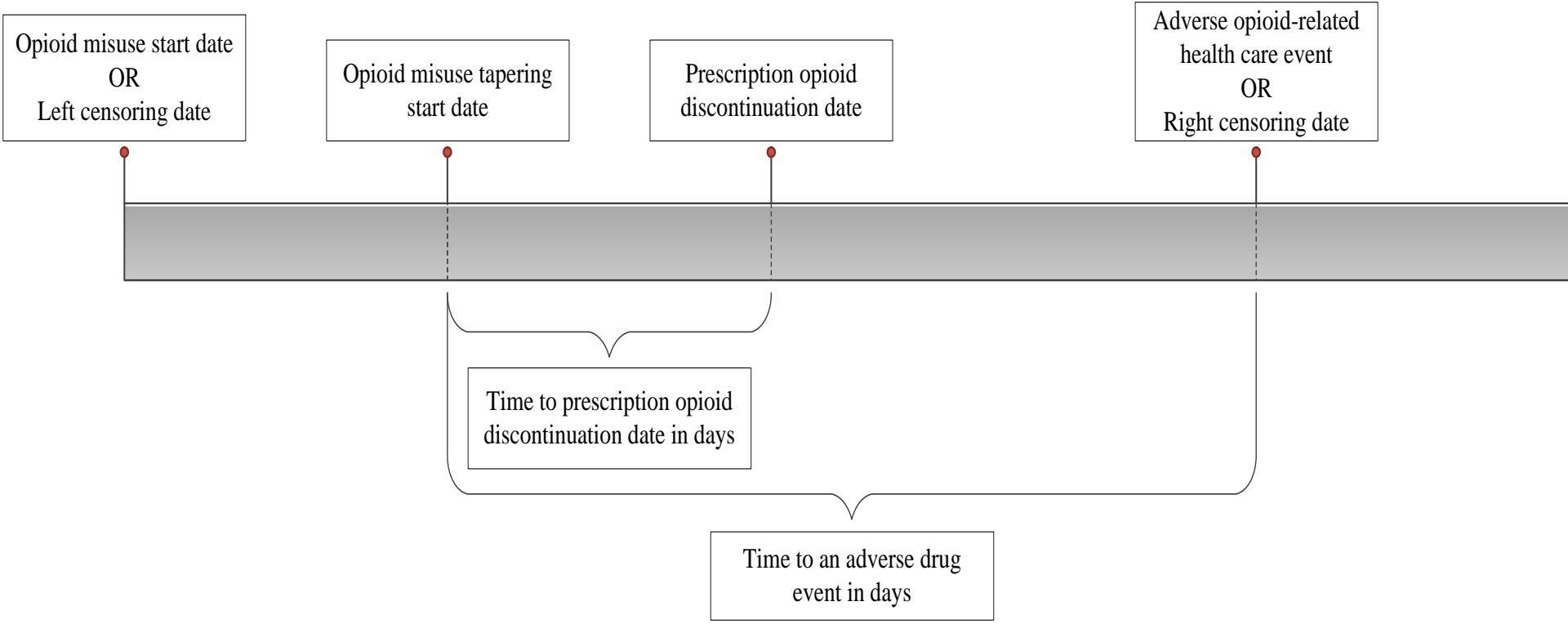
Continuously enrolled for 9 or more months or throughout their time to an adverse drug event (n = 14,361)

No cancer diagnoses (n = 13,394)

Used prescription opioids for 90 or more consecutive days at a daily dosage of at least 120 MMEs (n = 694)

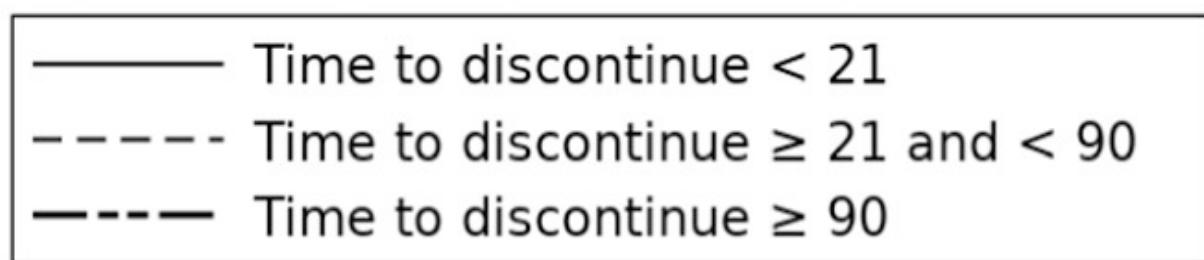
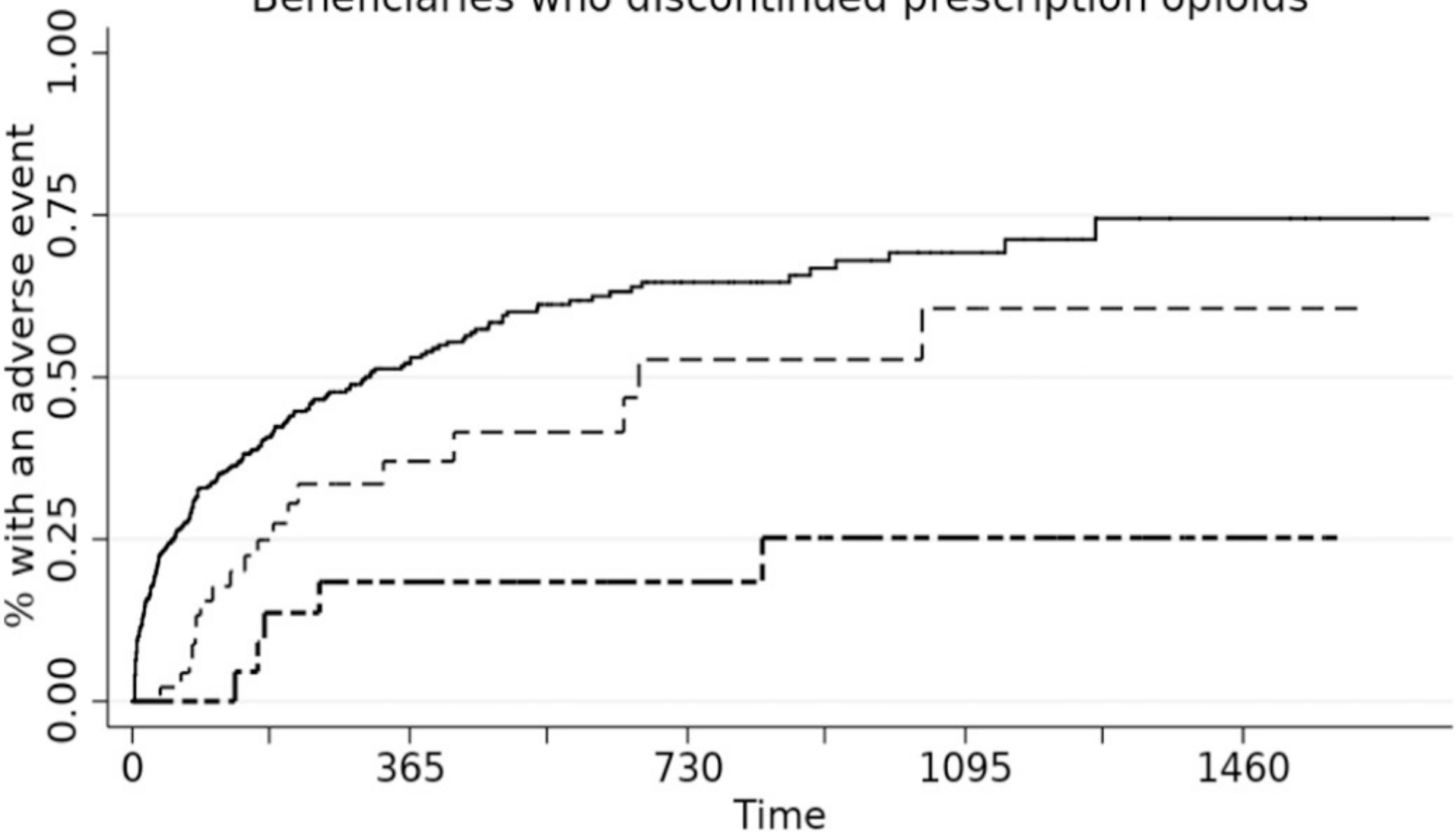
Discontinued prescription opioids (n = 494)

Illustration of the construction of an opioid misuse tapering to an adverse opioid-related health care event episode.



Measure (N – 494)	Median (Min.–Max.) or %
Had an adverse event	49%
Time to adverse event (days)	77 (1–253)
Time to opioid discontinuation (days)	1 (1–599)
Time to opioid discontinuation < 21 days	86%
Days using prescription opioids at high dosages	510 (90–1736)
Filled opioid prescriptions from 4+ different providers	24%
IMAT after tapering start date	0.6%
Diseases of nervous system, sense organs	36%
Diseases of musculoskeletal system, connective tissue	33%
Diseases of endocrine, nutritional, metabolic diseases, immunity	32%
Substance use disorder diagnosis	60%

Beneficiaries who discontinued prescription opioids



Model results of the association between time to opioid discontinuation and the risk of an adverse opioid-related event.

Measure	Hazard ratio
N	494
Primary independent variables	
Time to discontinuation in days	0.99**
Demographic characteristics	
Age	0.98*
Female	0.93
Opioid prescription drug use patterns	
Number of days using prescription opioids at high dosages	1.00
Member filled opioid prescriptions from 4 or more different providers	1.13
Member was started onto opioid use disorder medication after tapering start date	0.90
Top physical health comorbidities	
Diseases and disorders of the nervous system and sense organs	0.75
Diseases and disorders of the musculoskeletal system and connective tissue	1.19
Diseases and disorders of the endocrine, nutritional, and metabolic diseases and immunity disorders	0.94
Diseases and disorders of the digestive system	0.97
Diseases and disorders of the circulatory system	0.86
Diseases and disorders of the respiratory system	1.14
Infectious and parasitic diseases	1.14
Disease and disorders of the blood and blood-forming organs	1.22
Diseases and disorders of the genitourinary system	
Most frequent behavioral health comorbidities	
Substance use disorder diagnosis (primary or secondary)	2.09***
Mood disorders (primary diagnoses)	0.94
Anxiety disorders (primary diagnoses)	0.94

Summary of Main Findings

- Median length of time to discontinuation was 1 day.
- 50% of patients had no dose reduction prior to discontinuation.
- 86% of patients rapidly tapered.
- 49% of members had an opioid-related hospitalization or emergency department visit.
- Each additional week of discontinuation time was associated with a 7% reduction in the probability of having opioid-related adverse event.
- 60% of members had a substance use disorder prior to tapering, but less than 1% were transitioned onto medication-assisted treatment.

Discussion & PostScript

(April 23, 2019) CDC is raising awareness about the following issues that could put patients at risk:

- Misapplication of recommendations to populations outside of the Guideline's scope.
- Misapplication of the Guideline's dosage recommendation that results in hard limits or "cutting off" opioids. The Guideline does not support abrupt tapering or sudden discontinuation of opioids.
- Misapplication of the Guideline's dosage recommendation to patients receiving or starting medication-assisted treatment for opioid use disorder.

The [Pocket Guide: Tapering Opioids for Chronic Pain](#) is a quick-reference tool for when and how to taper and important considerations for safe and effective care.

<https://www.cdc.gov/media/releases/2019/s0424-advises-misapplication-guideline-prescribing-opioids.html>

Limitations and Next Steps

- Limited to Medicaid. Did not include Private insurance or Medicare
- Did not capture all important outcomes:
 - Suicide hospitalizations
 - All-cause ED visits and hospitalizations
 - Mortality
- Did not examine tapering from lower doses (e.g., 90 MME)
- Did not examine receipt of alternative pain treatments
- Focus was on tapering time, not question of whether or not to taper

More Information

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