Data and Design: Associations Between Stopping Prescriptions and Overdose or Suicide Deaths in US Veterans

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March 9, 2023
National Academies of Sciences, Engineering, and Medicine (NASEM) Open Meeting
Evaluating the Effects of Opioids and Benzodiazepines on All-Cause Mortality in Veterans

Overview

- Review Oliva et al., 2020, BMJ: Associations between opioid discontinuation and overdose and suicide death
- Review related research
- Discuss data challenges

Associations between stopping prescriptions for opioids, length of opioid treatment, and overdose or suicide deaths in US veterans: observational evaluation

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ABSTRACT

OBJECTIVE

To examine the associations between stopping treatment with opioids, length of treatment, and death from overdose or suicide in the Veterans Health Administration.

DESIGN

Observational evaluation.

SETTING

Veterans Health Administration.

PARTICIPANTS

1 394 102 patients in the Veterans Health Administration with an outpatient prescription for an opioid analgesic from fiscal year 2013 to the end of fiscal year 2014 (1 October 2012 to 30 September 2014).

MAIN OUTCOME MEASURES

A multivariable Cox non-proportional hazards regression model examined death from overdose or suicide, with the interaction of time varying opioid cessation by length of treatment (≤30, 31-90, 91-400, and >400 days) as the main covariates. Stopping treatment with opioids was measured as the time when a patient was estimated to have no prescription for opioids, up to the end of the next fiscal year (2014) or the patient's death.

RESULTS

2887 deaths from overdose or suicide were found. The incidence of stopping opioid treatment was 57.4% (n=799 668) overall, and based on length of opioid treatment was 32.0% (≤30 days), 8.7% (31-90 days), 22.7% (91-400 days), and 36.6% (>400 days). The interaction between stopping treatment with opioids and length of treatment was significant (P<0.001); stopping treatment was associated with an increased risk of death from overdose or suicide regardless of the length of treatment, with the risk increasing the longer patients were treated. Hazard ratios for patients who stopped opioid treatment (with reference values for all other covariates) were 1.67 (≤30 days), 2.80 (31-90 days), 3.95 (91-400 days), and 6.77 (>400 days). Descriptive life table data suggested that death rates for overdose or suicide increased immediately after starting or stopping treatment with opioids, with the incidence decreasing over about three to 12 months.

CONCLUSIONS

Patients were at greater risk of death from overdose or suicide after stopping opioid treatment, with an increase in the risk the longer patients had been treated before stopping. Descriptive data suggested that starting treatment with opioids was also a risk period. Strategies to mitigate the risk in these periods are not currently a focus of guidelines for long term use of opioids. The associations observed cannot be assumed to be causal; the context in which opioid prescriptions were started and stopped might contribute to risk and was not investigated. Safer prescribing of opioids should take a broader view on patient safety and mitigate the risk from the patient's perspective. Factors to address are those that place patients at risk for overdose or suicide after beginning and stopping opioid treatment, especially in the first three months.

Oliva et al., 2020, BMJ

Introduction

- **Guidance on reducing opioids typically warns against sudden changes to care**
  - e.g., 2017 VA/DoD clinical practice guideline for opioid therapy for chronic pain specifies that "[a]brupt discontinuation should be avoided unless required for immediate safety concerns."
- **Some studies suggest a rise in adverse events after stopping treatment with opioids, but national studies with large sample sizes are lacking**
  - ***Demidenko et al., 2017*—**509 veterans with substance use disorders matched to veterans with no disorders who discontinued long-term opioid therapy in 2012. Evidence of suicidal thoughts and self-harm in patients with and without substance use disorders after opioid discontinuation.
  - ***Glanz et al., 2019***—Kaiser Permanente Colorado nested case-control study of patients on long-term opioid therapy in 2006-2017—228 patients with opioid overdose matched to 3547 control patients. High opioid dose variability (SD >27.2 mg of morphine equivalents) was associated with increased risk of overdose.
  - ***Mark & Parish, 2019***—2013-2017 Vermont Medicaid data for 494 patients on high-dose, long-term opioid therapy who discontinued opioids. Almost half (49%) admitted to hospital or visited the emergency department for an opioid or substance use related event after opioid discontinuation. Each additional week of tapering associated with 7% reduction in risk of having an opioid-related adverse event.
  - ***James et al., 2019*—**572 patients on chronic opioid therapy in 2010, followed through 2015, in a safety net primary care clinic in Seattle. Opioid discontinuation was associated with increased risk of death, including death from overdose.

Background

- Objective
  - Examine associations between stopping treatment with opioids, length of treatment, and death from overdose/suicide in Veterans Health Administration (VHA) patients
- Participants
  - 1,394,102 VHA patients with an outpatient opioid analgesic prescription in FY2013
    - Followed through end of FY2014 or patient's death
- Analysis
  - Multivariable Cox non-proportional hazards regression model
  - Main covariates
    - Interaction of time varying opioid cessation by length of treatment: ≤30, 31-90, 91-400, >400 days
    - Opioid cessation = Time a patient was estimated to have no prescription opioids in hand (measured to end of FY2014 or patient's death)
- Outcome
  - Death from overdose/suicide

Descriptives	Mean / %
Age	**60 years**
Female	**8%**
Currently married	**49%**
Urban	**62%**
3+ medical diagnoses	**52%**
Mental health diagnosis Other Depressive Disorders Posttraumatic Stress Disorder (PTSD)	**45%** 25% 19%
Substance use disorder Alcohol use disorder Drug use disorder Opioid use disorder	**14%** 10% 8% 2%
Opioid Therapy Type Tramadol only Short-acting Long-acting	 22% 68% 10%
Length of opioid treatment **Overall** ≤30 days 31-90 days 91-400 days >400 days	**Incidence of opioid cessation** **57%** 32% 9% 23% 36%

Results

- 2,887 deaths from overdose (*n*=1,851) and suicide (*n*=1,249)
  - NOTE: similar patterns for both outcomes so combined into one model

- FOR DESCRIPTIVE PURPOSES ONLY

	Stopped Opioid Treatment	Continued Opioid Treatment
Mental Health Diagnoses	42.9%	48.7%
Substance Use Disorders	14.6%	13.8%
Tramadol only	25.3%	18.5%
Short-acting opioid	70.1%	65.0%
Long-acting opioid	4.6%	16.5%
Mean maximum daily morphine mg equivalents	26.8	43.2

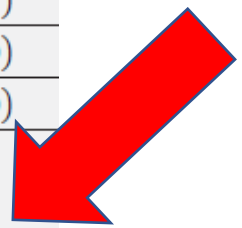
Table 2 | Multivariable Cox non-proportional hazard regression model estimates for death from overdose or suicide in patients with an outpatient prescription for an opioid in fiscal year 2013 at the Veterans Health Administration

Variables	Parameter estimate	Standard error	Hazard ratio (95% CI)
Stopped treatment with opioids	1.91	0.06	—*
Stopped treatment with opioids×duration of last prescription for opioids (reference >400 days):			
≤30 days	−1.40	0.08	—*
31-90 days	−0.88	0.11	—*
91-400 days	−0.54	0.08	—*
Age (centered)	−0.02	0.002	0.98 (0.98 to 0.98)
Female sex	−0.57	0.08	0.56 (0.48 to 0.66)
Currently married	−0.63	0.04	0.53 (0.49 to 0.58)
Rural residence	−0.07	0.04	0.93 (0.86 to 1.01)
No of medical diagnoses	0.02	0.01	1.02 (1.01 to 1.04)
Substance use disorder (excluding nicotine)	0.91	0.05	2.48 (2.25 to 2.72)
Nicotine use disorder	0.03	0.04	1.03 (0.95 to 1.12)
Mental health disorder	0.43	0.04	1.54 (1.41 to 1.68)
Type of opioid treatment (reference tramadol only):			
Long acting	0.44	0.08	1.55 (1.33 to 1.82)
Short acting	0.15	0.06	1.16 (1.04 to 1.30)
Log maximum daily morphine mg equivalents	0.35	0.03	1.42 (1.34 to 1.50)

*Hazard ratios and associated 95% confidence intervals were not estimated for these variables as this was an interaction model. To better understand the interaction, the estimated hazard ratios for patients who stopped opioid treatment (with reference values for all other covariates) were 1.67 (≤30 days), 2.80 (31-90 days), 3.95 (91-400 days), and 6.77 (>400 days).

Hazard ratios for patients who stopped opioid treatment
(reference values for other covariates)

1.67 (≤30 days)
2.80 (31-90 days)
3.95 (91-400 days)
6.77 (>400 days)



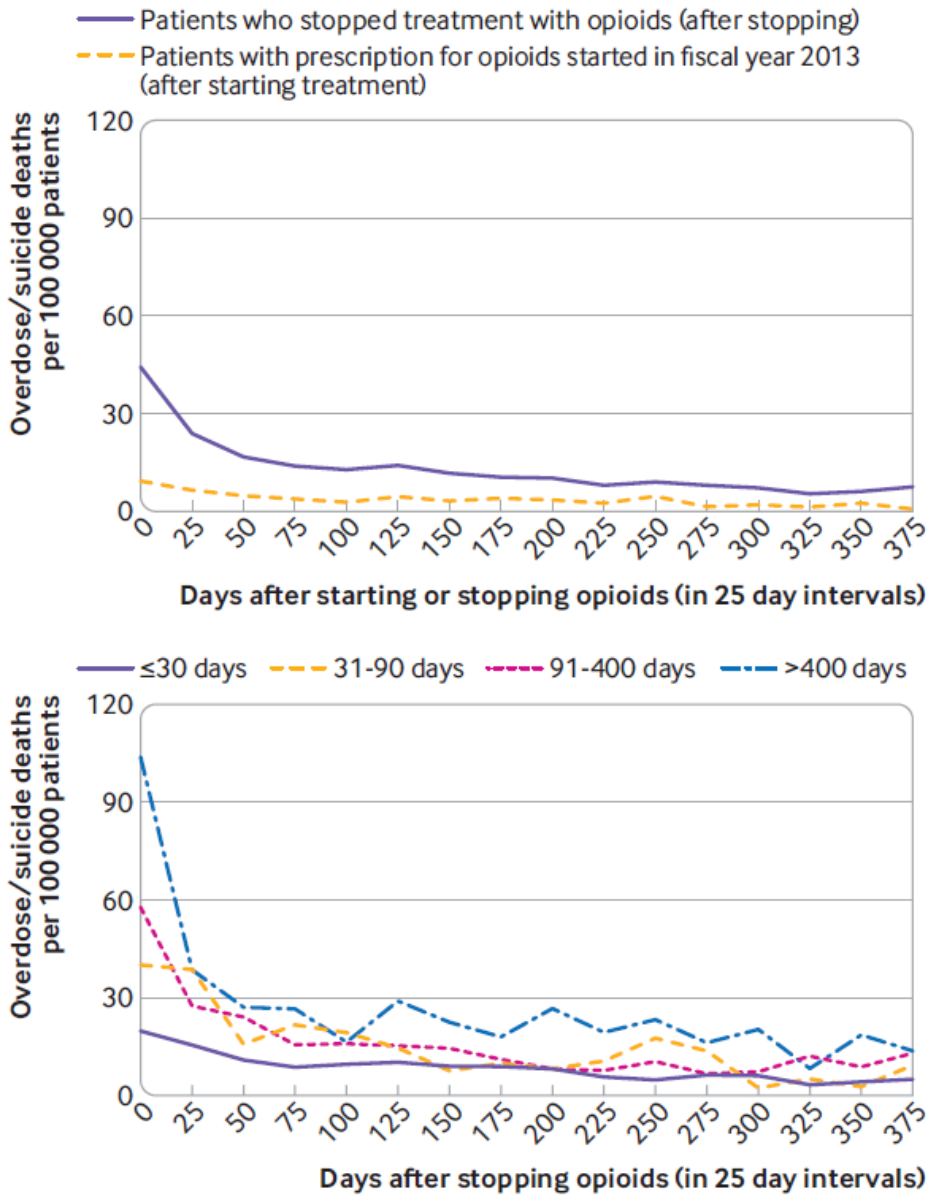


Fig 1 | Conditional probability of death from overdose or suicide over 375 days (in 25 day intervals). Top panel=probability in patients treated with opioids (for patients who started treatment with opioids (n=952 918) in fiscal year 2013) and after stopping opioid treatment (n=799 668). Bottom panel=probability by length of treatment with opioids in those who stopped opioid treatment

Length of opioid treatment	Observed overdose/ suicide mortality rate (first 25 days per 100,000 patients)
≤30 days	20
31-90 days	40
91-400 days	58
>400 days	**104**

Main Findings

- Interaction between stopping opioid treatment and length of opioid treatment was associated with an increased risk of death from overdose/suicide
  - Increasing risk the longer patients had been treated with opioids before stopping
  - Even patients treated up to 30 days had increase in risk for overdose/suicide death after opioid cessation

- Other covariates associated with greater risk of overdose/suicide death
  - Male, not being married, mental health or substance use disorder diagnosis, medical comorbidities, higher opioid dose

- Descriptive life tables → vulnerable risk periods
  - Rise in overdose/suicide deaths in months after starting and stopping opioids highlights these as vulnerable risk periods

Discussion

- Findings consistent with:
  - Veterans Affairs/Department of Defense Clinical Practice Guideline against starting long-term opioid treatment
  - US Department of Health and Human Services (HHS) guide for clinicians on the appropriate dosage reduction or discontinuation of long-term opioid analgesics
  - Dowell, Haegerich, & Chou, 2019, NEJM. No shortcuts to safer opioid prescribing.

- Implications for clinical care
  - Provide patient-centered care that looks at broad array of risk factors
  - Closely monitor patients for at least 3 months after patients stop opioid treatment, especially those on long-term opioid therapy or those with other risk factors (e.g., MH/SUD comorbidities)
  - Continually manage and treat pain and comorbid conditions
  - Preserve relationships with healthcare providers, especially post-opioid cessation
  - Enact flexible policies that allow providers to take into account patient's unique circumstances when making clinical decisions about prescribing opioids
  - Provide detailed guidance and standard risk mitigation for opioid initiation & cessation

Limitations

- Observational—cannot prove cause and effect and is subject to confounding
  - This study **does not test** whether opioid cessation caused suicidality or overdoses
- Opioid cessation variable did not consider reasons or clinical intentions for stopping opioid treatment or the speed of its execution
  - e.g., voluntary; because pain resolved; concerned about adverse outcomes
- Included all patients prescribed opioid analgesics
  - Risks relatively high post-cessation even among those prescribed opioids for <90 days
  - Expected bias towards lower risk associated with stopping treatment (e.g., because many stop taking opioids after recovering from short term acute injuries) was not found
- Lacked data on adherence to treatment, access to unused drugs after estimated prescription period, and opioids obtained outside VHA

Conclusions

- Patients were at greater risk of overdose/suicide death after stopping opioid treatment, with the risk increasing the longer patients had been treated before stopping

- First 3 months post initiation and post cessation are elevated risk periods
  - Clear opportunities for clinical intervention but have not been a focus of guidelines for long-term opioid therapy

- Efforts to reduce overdose/suicide deaths should take a broader view on patient safety, beyond opioid management
  - Patient safety and risk mitigation actions should include the patient's perspective
  - Examine risk factors that place patients at-risk for overdose/suicide whether they continue or stop opioid treatment

Association is not Veteran specific: Elevated risk in patients tapering or discontinuing has been reported in non-VA populations

- **Agnoli et al., 2021**
  - 113, 618 patients in OptumLabs data warehouse prescribed more than 12 months of opioid therapy with an average daily dose of greater than 50 MEDD. Tapering is defined as at least a 15% dose reduction in a 60 day window within the 7 month follow-up.
- **Larochelle et al., 2022**
  - 199,836 adults with commercial insurance or Medicare Advantage receiving long-term opioid therapy of over 50 MEDD between 2010-2018
  - Compared stable dosing episodes, tapers (15% or more reduction from baseline), and abrupt discontinuations (end of fills within 1 month)
- **Fenton et al., 2022**
  - 19,377 adults with commercial insurance or Medicare Advantage who tapered opioid dose between 2008-2017 after at least 12 months of stable opioid dosing over 50 MEDD per day
  - Compared rates of overdose or withdrawal events (ED or inpatient admissions for drug overdose, alcohol intoxication or drug withdrawal), and mental health crisis events (ED or inpatient admissions for depression, anxiety, suicide attempt or intentional self-harm) pre-taper and after taper start
- **Hallvik et al., 2022**
  - 14,596 Oregon Medicaid beneficiaries with chronic (more than 84 days) opioid analgesic prescriptions of more than 50 MEDD in 2014-2017. Examined trajectories in the next year after patient dropped below 50 MEDD.

JAMA | Original Investigation

Association of Dose Tapering With Overdose or Mental Health Crisis Among Patients Prescribed Long-term Opioids

Alicia Agnoli, MD, MPH, MHS; Guibo Xing, PhD; Daniel J. Tancredi, PhD; Elizabeth Magnan, MD, PhD; Anthony Jerant, MD; Joshua J. Fenton, MD, MPH

IMPORTANCE Opioid-related mortality and national prescribing guidelines have led to tapering of doses among patients prescribed long-term opioid therapy for chronic pain. There is limited information about risks related to tapering, including overdose and mental health crisis.

OBJECTIVE To assess whether there are associations between opioid dose tapering and rates of overdose and mental health crisis among patients prescribed stable, long-term, higher-dose opioids.

DESIGN, SETTING, AND PARTICIPANTS Retrospective cohort study using deidentified medical and pharmacy claims and enrollment data from the OptumLabs Data Warehouse from 2008 to 2019. Adults in the US prescribed stable higher doses (mean ≥50 morphine milligram equivalents/d) of opioids for a 12-month baseline period with at least 2 months of follow-up were eligible for inclusion.

EXPOSURES Opioid tapering, defined as at least 15% relative reduction in mean daily dose during any of 6 overlapping 60-day windows within a 7-month follow-up period. Maximum monthly dose reduction velocity was computed during the same period.

MAIN OUTCOMES AND MEASURES Emergency or hospital encounters for (1) drug overdose or withdrawal and (2) mental health crisis (depression, anxiety, suicide attempt) during up to 12 months of follow-up. Discrete time negative binomial regression models estimated adjusted incidence rate ratios (aIRRs) of outcomes as a function of tapering (vs no tapering) and dose reduction velocity.

RESULTS The final cohort included 113 618 patients after 203 920 stable baseline periods. Among the patients who underwent dose tapering, 54.3% were women (vs 53.2% among those who did not undergo dose tapering), the mean age was 57.7 years (vs 58.3 years), and 38.8% were commercially insured (vs 41.9%). Posttapering patient periods were associated with an adjusted incidence rate of 9.3 overdose events per 100 person-years compared with 5.5 events per 100 person-years in nontapered periods (adjusted incidence rate difference, 3.8 per 100 person-years [95% CI, 3.0-4.6]; aIRR, 1.68 [95% CI, 1.53-1.85]). Tapering was associated with an adjusted incidence rate of 7.6 mental health crisis events per 100 person-years compared with 3.3 events per 100 person-years among nontapered periods (adjusted incidence rate difference, 4.3 per 100 person-years [95% CI, 3.2-5.3]; aIRR, 2.28 [95% CI, 1.96-2.65]). Increasing maximum monthly dose reduction velocity by 10% was associated with an aIRR of 1.09 for overdose (95% CI, 1.07-1.11) and of 1.18 for mental health crisis (95% CI, 1.14-1.21).

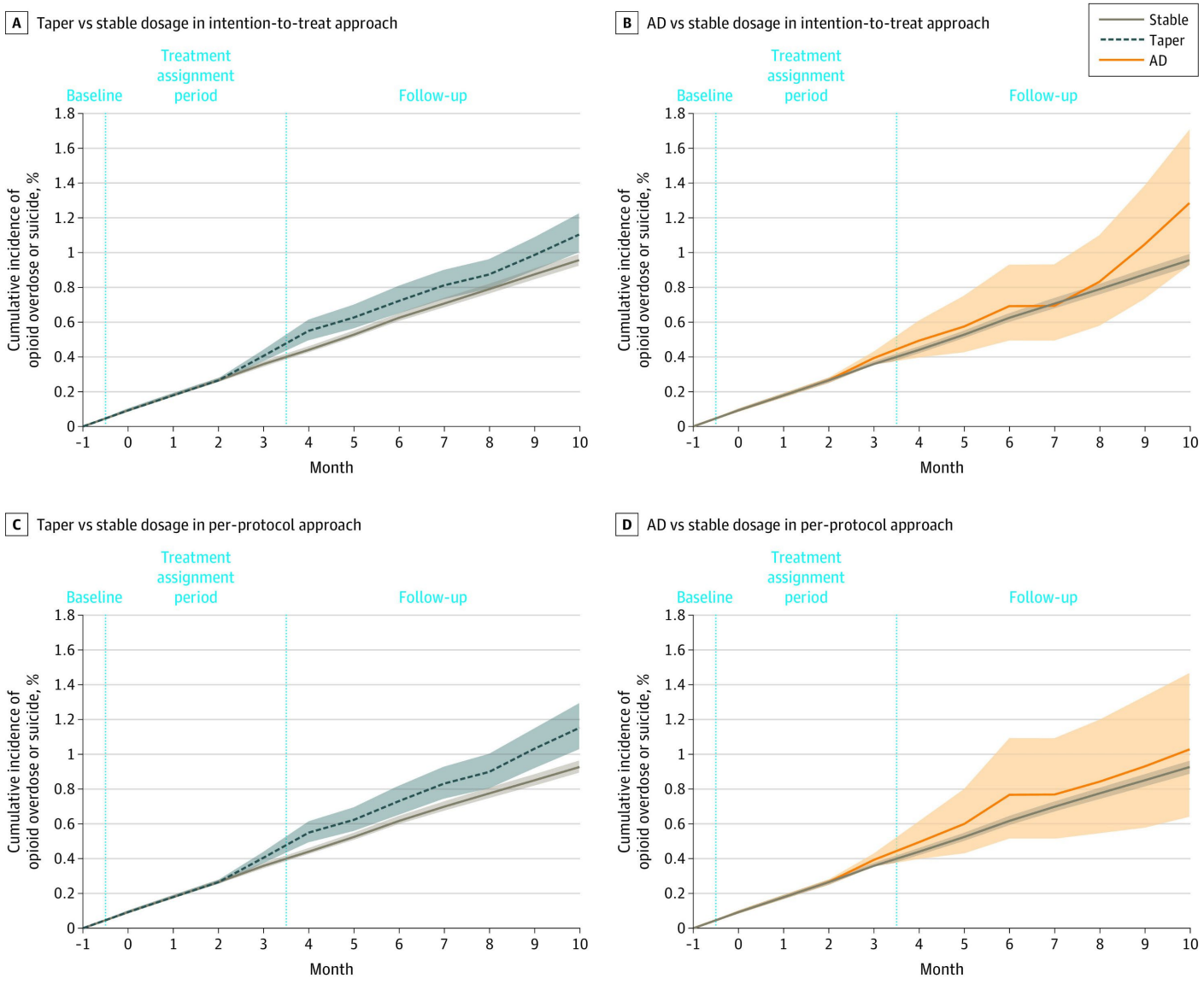
CONCLUSIONS AND RELEVANCE Among patients prescribed stable, long-term, higher-dose opioid therapy, tapering events were significantly associated with increased risk of overdose and mental health crisis. Although these findings raise questions about potential harms of tapering, interpretation is limited by the observational study design.

https://jamanetwork.com/journals/jama/fullarticle/2782643

Table 2. Primary and Secondary Outcomes in a Study of the Association of Dose Tapering With Overdose or Mental Health Crisis Among Patients Prescribed Long-term Opioids[a]

Outcome	Tapered[b]		Not tapered[b]		Adjusted incidence rate difference per 100 person-years by tapering status (95% CI)[d,e]	Adjusted incidence rate ratio (95% CI)[d]	*P* value[c]
	No. of events/ total person-years	Adjusted incidence rate per 100 person-years (95% CI)[d]	No. of events/ total person-years	Adjusted incidence rate per 100 person-years (95% CI)[d]			
Overdose[f]							
Entire cohort	3241/22 097	9.3 (8.5-10.1)	11 433/152 194	5.5 (5.3-5.8)	3.8 (3.0-4.6)	1.68 (1.53-1.85)	<.001
Baseline opioid dose, MME/d[g]							.008
50-89	530/5321	6.6 (5.3-7.9)	3277/53 260	4.6 (4.2-5.0)	2.0 (0.3-3.3)	1.43 (1.15-1.77)	
90-149	676/5524	7.7 (6.4-9.1)	2607/38 994	5.1 (4.6-5.5)	2.6 (1.2-4.1)	1.67 (1.34-2.00)	
150-299	1047/6864	10.9 (9.2-12.7)	3462/38 782	6.5 (6.0-7.0)	4.4 (2.6-6.2)	2.36 (1.93-2.79)	
≥300	988/4388	16.2 (13.9-18.4)	2087/21 159	7.4 (6.6-8.2)	8.8 (6.4-11.1)	3.51 (2.94-4.09)	
Mental health crisis[i]							
Entire cohort	3117/22 097	7.6 (6.5-8.6)	8258/152 194	3.3 (3.0-3.6)	4.3 (3.2-5.3)	2.28 (1.96-2.65)	<.001
Baseline opioid dose, MME/d[g]							.003
50-89	525/5321	5.2 (3.8-6.5)	2801/53 260	3.4 (3.0-3.9	1.8 (0.4-3.2)	1.51 (1.14-2.01)	
90-149	615/5524	5.8 (4.3-7.4)	2045/38 994	3.2 (2.7-3.7)	2.6 (1.0-4.2)	1.70 (1.21-2.19)	
150-299	1080/6864	8.7(6.6-10.9)	2051/38 782	3.0 (26-3.5)	5.7 (3.5-7.8)	2.54 (1.84-3.24)	
≥300	897/4388	11.9 (8.8-15.0)	1361/21 159	3.8 (3.0-4.7)	8.1 (4.9-11.3)	3.47 (2.45-4.49)	
Secondary mental health end points[h]							
Depression	2485/22 097	5.5 (4.6-6.4)	6174/152 194	2.2 (2.0-5)	3.3 (2.4-4.2)	2.46 (2.05-2.96)	<.001
Anxiety	505/22 097	1.4 (12-1.7)	1737/152 194	0.8 (0.7-0.9)	0.6 (0.4-0.9)	1.79 (1.48-2.15)	<.001
Suicide attempt	127/22 097	0.4 (0.2-0.5)	347/152 194	0.1 (0.08-0.13)	0.3 (0.1-0.4)	3.30 (2.19-4.98)	<.001

Increased risk of overdose or suicide events in the 11 months after opioid tapering (dose reduction >=15%) compared to stable dosage in 199,836 adult patients on LTOT



Larochelle MR, Lodi S, Yan S, Clothier BA, Goldsmith ES, Bohnert ASB. Comparative Effectiveness of Opioid Tapering or Abrupt Discontinuation vs No Dosage Change for Opioid Overdose or Suicide for Patients Receiving Stable Long-term Opioid Therapy. JAMA Netw Open. 2022 Aug 1;5(8):e2226523. doi: 10.1001/jamanetworkopen.2022.26523. PMID: 35960518; PMCID: PMC9375167.

In OptumLabs Data Warehouse, 21,515 adults who underwent opioid taper of more than 15% after at least 1 year of LTOT over 50 MEDD.

Elevated risk of overdose or mental health crisis in the post-taper versus pre-taper period.

Table 3.

Adjusted IRRs of Overdose or Mental Health Crisis in the Postinduction Compared With the Pretaper Period by Patient or Period Subgroups[a]

Patient or period subgroup	Overdose or withdrawal		Overdose		Mental health crisis	
	IRR (95% CI)	*P* value[b]	IRR (95% CI)	*P* value[b]	IRR (95% CI)	*P* value[b]
Baseline dose, MME[c]						
50-89	1.24 (0.98-1.58)		1.04 (0.75-1.44)		1.26 (0.97-1.63)	
90-149	1.54 (1.24-1.90)	.01	1.43 (1.08-1.91)	.15	1.18 (0.93-1.49)	<.001
150-299	1.47 (1.23-1.75)		1.40 (1.11-1.76)		1.49 (1.21-1.82)	
≥300	2.03 (1.67-2.47)		1.71 (1.31-2.24)		2.54 (1.95-3.30)	
Postinduction achieved dose vs baseline[d]						
Discontinued	1.09 (0.88-1.36)		0.86 (0.62-1.20)		1.17 (0.91-1.50)	
1%-49%	1.32 (1.08-1.61)		1.07 (0.82-1.39)		1.58 (1.26-1.97)	
50%-84%	1.93 (1.61-2.32)	<.001	1.86 (1.46-2.37)	<.001	1.77 (1.43-2.19)	.13
85%-114%	2.16 (1.71-2.73)		1.93 (1.43-2.62)		1.59 (1.23-2.06)	
≥115%	1.56 (1.00-2.43)		1.64 (0.94-2.87)		1.28 (0.76-2.16)	
Early vs later in postinduction period						
Early (months 13-16)	1.56 (1.32-1.84)	.94	1.32 (1.05-1.67)	.53	1.56 (1.28-1.89)	.77
Later (months 17-24)	1.57 (1.41-1.75)		1.42 (1.24-1.64)		1.51 (1.33-1.71)	

Abbreviations: IRR, incidence rate ratio; MME, morphine milliequivalents.

[a] Data were estimated using fixed-effects negative binomial regression (21 515 tapers among 19 377 patients).

[b] *P* values are for χ^2 tests for significant heterogeneity in IRRs across subgroups.

[c] Stratum-specific IRRs were estimated by fitting models with interaction terms between pretaper vs posttaper period and baseline dose categories.

[d] Defined as the average opioid dose (in MME) during the first postinduction 60-day period divided by the average opioid dose during the 12-month stable baseline period.

- Fenton JJ, Magnan E, Tseregounis IE, Xing G, Agnoli AL, Tancredi DJ. Long-term Risk of Overdose or Mental Health Crisis After Opioid Dose Tapering. JAMA Netw Open. 2022 Jun 1;5(6):e2216726. doi: 10.1001/jamanetworkopen.2022.16726. Erratum in: JAMA Netw Open. 2022 Jul 1;5(7):e2224285. PMID: 35696163; PMCID: PMC9194670.

In Oregon Medicaid beneficiary claims from 2014-2017, among patients with more than 84 consecutive days of opioid analgesic treatment with over greater than 50 MEDD

Table 3:

Adjusted hazard ratios of opioid related events and adjusted odds ratios for buprenorphine fills in 12 months after discontinuation or dose reduction, according to opioid dose trajectory

	Risk of any event	Risk of suicide	Risk of overdose	Risk of Adverse events	Buprenorphine Filled
	aHR (95% CI)*	aHR (95% CI)*	aHR (95% CI)*	aHR (95% CI)*	aOR (95% CI)*
Stable or increasing dose	*Reference*	*Reference*	*Reference*	*Reference*	*Reference*
Abrupt discontinuation	1.22 (0.94–1.58)	3.63 (1.42–9.25)	0.62 (0.40–0.94)	1.61 (1.15–2.26)	15.07 (7.28–38.38)
Dose reduction and discontinuation	1.13 (0.84–1.53)	4.47 (1.68–11.88)	0.36 (0.20–0.66)	1.54 (1.05–2.25)	14.83 (7.00–38.33)
Dose reduction without discontinuation	0.94 (0.73–1.21)	1.29 (0.48–3.45)	0.41 (0.27–0.62)	1.45 (1.04–2.02)	2.47 (1.14–6.46)

aHR: adjusted hazard ratio; OR: odds ratio, CI: confidence interval

*Adjusted for age, gender, race, rurality, comorbidities, MME dose, filled benzodiazepines, chronic pain

- Hallvik SE, El Ibrahimi S, Johnston K, Geddes J, Leichtling G, Korthuis PT, Hartung DM. Patient outcomes after opioid dose reduction among patients with chronic opioid therapy. Pain. 2022 Jan 1;163(1):83-90. doi: 10.1097/j.pain.0000000000002298. Erratum in: Pain. 2022 Apr 1;163(4):e613. PMID: 33863865; PMCID: PMC8494834.

VA changed care practice to address risk

- Findings have been shared with clinicians on numerous national VHA calls
  - Preliminary findings shared in Fall 2018 with FDA prior to their release of a safety announcement on the harms of sudden opioid discontinuation

- VA augmented clinical care and evaluation efforts
  - Expanded Opioid Safety Initiative to consider risk factors from whole patient perspective
  - Pain Management Teams stood up at VA Medical Centers
  - Medication Use Evaluation on opioid tapering to further assess opioid cessation

- Updated VHA computerized decision support systems to highlight risks and facilitate monitoring and risk management of patients after stopping opioid treatment
  - Very high risk patients who discontinued opioid therapy require interdisciplinary team review per VA policy
    - Interdisciplinary team reviews were shown to reduce mortality in the next 4 months by 22% in very high risk patients on opioid therapy (Strombotne et al., 2022).

BMJ Opinion: What an opioid safety initiative can teach us about using information to improve patient outcomes

- **Key take-home message**
  - Addressing the opioid crisis requires us to move beyond solely focusing on opioids
  - Factors associated with increased risk when patients are prescribed opioids are also associated with risk when opioids are no longer part of the patient's treatment plan (e.g., mental health disorders, medical complexity, other medications)

- **VHA is a learning healthcare system**
  - Committed to identifying factors associated with outcomes for patients prescribed opioids; built on decade of opioid safety efforts (Gellad et al., 2017)

- **VHA's integrated system allows it to move quickly on new evidence**
  - Opioid Safety Initiative launched in 2013
    - Focused on both opioid prescribing factors (high-dose, co-prescribing with benzodiazepines) and risk mitigation (urine drug screening)
  - Opioid Overdose Education and Naloxone Distribution (OEND)
    - Over 200,000 Veterans have received naloxone with more than 700 documented opioid overdose reversals

- **VA Stratification Tool for Opioid Risk Mitigation (STORM) can help with risk mitigation (Oliva et al., 2017)**
  - Uses predictive analytics to identify patients at-risk for overdose or suicide and provides individualized risk mitigation recommendations
  - Consistent with other predictive models, STORM found that opioid dose was a weak predictor of overdose/suicide when other clinical risk factors were taken into consideration

Challenges with assessing outcomes

- The most accessible information on adverse outcomes are from medical record documentation
  - These adverse events will only be documented if the patient makes it to care and is appropriately assessed by a clinician
  - Better clinician education and patient monitoring can lead to apparent increases in adverse events because they increase likelihood of documentation
  - Improvements in screening and monitoring for suicide and overdose risk may have increased detection of adverse outcomes
- We lack data on patient well-being, and pain-related function
  - Difficult to estimate benefits of opioid or benzodiazepine therapy