Can Educational Outreach Improve Experts' Decision Making? Evidence from a National Opioid Academic Detailing Program

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Poll 1

Which of the following best describes you?

a) Researcher working on opioid topics

b) Researcher working on non-opioid topics

c) Non-researcher clinician

Poll 2

How familiar are you with difference-in-difference/event study methods?

a) Expert: have used it, know the assumptions, updated on recent developments in staggered treatment methods
b) Have implemented the canonical difference-in-differences model
c) Have read research papers that use it, and somewhat familiar with its assumptions
d) Complete novice

Evolving guidelines in the opioid crisis

- Opioid crisis has been rapidly evolving in the past two decades
  - Characterized by many waves, each with different concerns and potential solutions
  - Changing evidence, guidelines, medical technologies (e.g., Narcan, suboxone)
  - Clinicians are at the forefront (prescribing, diagnosing, referring, treating..), but many graduated from medical school decades ago and may have outdated knowledge
- Policies aimed to curb the opioid crisis have been generally blunt and ineffective
  - e.g., blanket policies like prescribing limits
- In contrast, strong evidence that pharmaceutical promotion caused greater opioid prescribing (Alpert et al. 2021)
- **Can targeted education outreach change physician behaviour and curtail the crisis?**

What this paper does

- Studies largest national physician educational outreach program (**academic detailing**) in the VA aimed at altering opioid-related behaviors to reduce opioid mortality

- Use a **staggered treatment** (generalized difference-in-differences) design to study the causal impacts of academic detailing on:
  i) physician behavior ii) downstream patient outcomes

- Link **highly granular individual-level** data on physicians, their behaviors, and their patients' outcomes
  - Prior studies generally study state policy changes with state-level outcomes

Preview of findings

1. **Educational outreach changes physician behaviors**
   - Academic detailing *increased naloxone prescribing* by over 300%; detailing was responsible for 25% of all naloxone prescribed from primary care
   - *Opioid prescribing declined* by 10%, including measures of dangerous prescribing
2. **Patient outcomes improve**
   - Emergency visits and hospitalizations for *overdoses and accidents declined* by 3.4%
   - Largely concentrated among highest prior opioid users (20% reduction)
3. **Net marginal benefit of the program is $15,000 over two years, per detailed PCP team**

What we already know about the opioid crisis

Many studies on the origins and consequences of the crisis

- Origins (pharmaceutical promotion): Alpert et al. 2022; Arteaga & Barone 2022
- Macroeconomic conditions: Hollingsworth et al. 2017; Ruhm 2018; Currie & Schwandt 2021; Pierce & Schott 2020; Case and Deaton 2020
- Consequences: vehicle accidents; child removals; disability take-up...

Solutions? Generally discouraging with not very well-powered studies

- State-level policies and outcomes: see Maclean et al. 2021 for a review
- Unintended consequences: Alpert et al. 2018; Evans et al. 2018

Physicians played a causal role in igniting the crisis

- Barnett, Olenski, & Jena 2017; Eichmeyer and Zhang 2022; Finkelstein et al. 2022

Can physician education be a viable policy solution?

Related non-opioid literature

Guideline adherence and misallocation

Understanding deviations: Abaluck et al. 2021; Currie and MacLeod 2020; Finkelstein et al. 2022, Chan et al. 2022; Abaluck et al. 2016; Mullainathan and Obermeyer 2019; Chandra and Staiger (2020)

Consequences: Hoffman et al. 2021; Cuddy and Currie 2021; Currie and MacLeod 2020

Pharmaceutical promotion and detailing

Impacts on physicians: Agha and Zeltzer 2022; Carey et al. 2021; Grennan et al. 2021; Shapiro 2018

Opioid crisis: Alpert et al. 2022; Arteaga and Barone 2022; Zejcirovic and Fernandez 2018; Miloucheva 2021

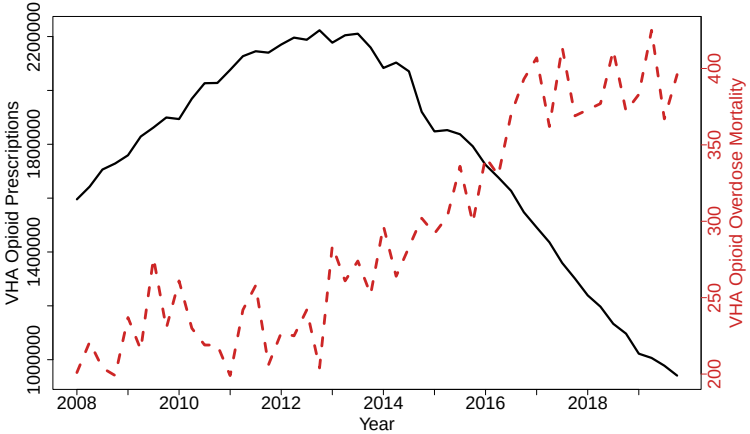
I show that educational outreach—with no financial incentives—can improve guideline adherence

Background and Setting

Veterans Health Administration

- US veterans who served 24 consecutive months in active military duty are eligible for nearly free healthcare from the **Veterans Health Administration (VHA)**
  - No premiums, no deductible, typically low copayments
- Roughly 6 million patients per year
- Organized into 130 stations
- Patients are assigned primary care providers (PCPs) teams and relationships are documented
- Largest integrated health system in the US
  - Early adopter of electronic health records
  - No attrition since enrollment is not tied to employment

VA was experiencing a more pronounced opioid crisis in 2010s



- VA was prescribing more opioids than rest of the US (high rates of chronic pain; emphasis on pain as "fifth vital sign", etc.)
- Veterans are 50% higher risk of opioid overdose mortality and overdose rates rising rapidly (Bohnert et al. 2011; Lin et al. 2019)

VA's Response

In response to the opioid crisis at the VA, in 2015, the White House mandated the VA implement a national academic detailing program:

1. Create knowledge: gather evidence, implement guidelines, create resources
2. Hire staff and disseminate the knowledge

What is Academic Detailing?

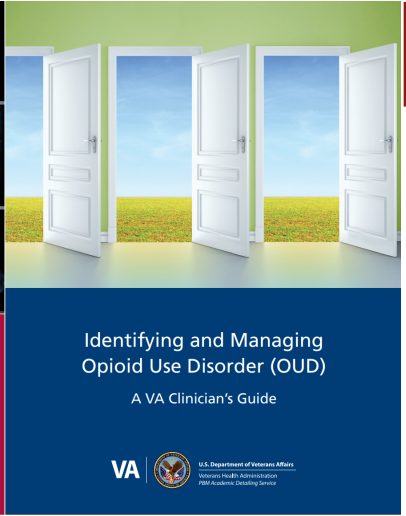
- **Academic detailing**: educational outreach provided by clinical experts to clinicians by synthesizing and disseminating new clinical evidence, promoting new guidelines, and providing additional resources
- Academic detailing at the VA:
  - Conducted by VA-employed clinical pharmacists
  - 20-60 minute face-to-face sessions at clinician's clinic
  - Largely detailed primary care providers (salaried, no financial incentives)
  - Largest nationwide detailing program: 2.75 million patients had their PCP detailed
- Academic detailing is not new, but studies on its impacts on providers is mixed, with scant evidence on patient outcomes (Hoof et al. 2015)

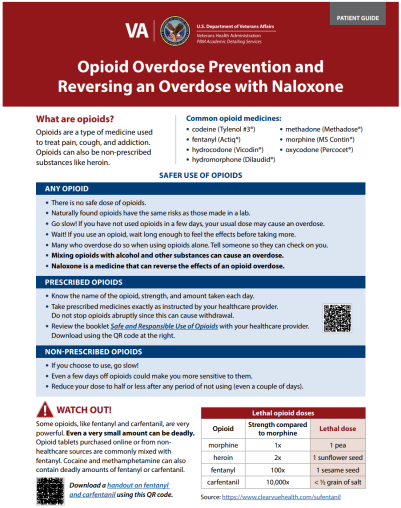
Opioid Education

VA Academic Detailing focused mainly on four opioid-related pillars:

1. **Pain management**: effective and appropriate ways to treat pain
   - Opioid prescribing guidelines, refer to alternate pain treatment
2. **Risk evaluation**: tools to help evaluate opioid risk
   - Perform urine drug screens and check prescription drug monitoring programs
3. **Treatment**: identify, manage, and treat opioid use disorder (OUD)
   - Reduce physician stigma around medication assisted treatment and refer to treatment
4. **Harm reduction**: overdose recognition, naloxone distribution
   - Prescribe naloxone

Educational Resources





PATIENT GUIDE

VA — U.S. Department of Veterans Affairs
Veterans Health Administration
PBM Academic Detailing Services

Opioid Overdose Prevention and Reversing an Overdose with Naloxone

What are opioids?

Opioids are a type of medicine used to treat pain, cough, and addiction. Opioids can also be non-prescribed substances like heroin.

Common opioid medicines:

- codeine (Tylenol #3®)
- fentanyl (Actiq®)
- hydrocodone (Vicodin®)
- hydromorphone (Dilaudid®)
- methadone (Methadose®)
- morphine (MS Contin®)
- oxycodone (Percocet®)

SAFER USE OF OPIOIDS

ANY OPIOID

- There is no safe dose of opioids.
- Naturally found opioids have the same risks as those made in a lab.
- Go slow! If you have not used opioids in a few days, your usual dose may cause an overdose.
- Wait! If you use an opioid, wait long enough to feel the effects before taking more.
- Many who overdose do so when using opioids alone. Tell someone so they can check on you.
- **Mixing opioids with alcohol and other substances can cause an overdose.**
- **Naloxone is a medicine that can reverse the effects of an opioid overdose.**

PRESCRIBED OPIOIDS

- Know the name of the opioid, strength, and amount taken each day.
- Take prescribed medicines exactly as instructed by your healthcare provider. Do not stop opioids abruptly since this can cause withdrawal.
- Review the booklet *Safe and Responsible Use of Opioids* with your healthcare provider. Download using the QR code at the right.

NON-PRESCRIBED OPIOIDS

- If you choose to use, go slow!
- Even a few days off opioids could make you more sensitive to them.
- Reduce your dose to half or less after any period of not using (even a couple of days).

WATCH OUT!

Some opioids, like fentanyl and carfentanil, are very powerful. **Even a very small amount can be deadly.** Opioid tablets purchased online or from non-healthcare sources are commonly mixed with fentanyl. Cocaine and methamphetamine can also contain deadly amounts of fentanyl or carfentanil.

Download a handout on fentanyl and carfentanil using this QR code.

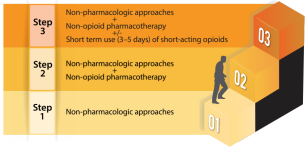
Lethal opioid doses

Opioid	Strength compared to morphine	Lethal dose
morphine	1x	1 pea
heroin	2x	1 sunflower seed
fentanyl	100x	1 sesame seed
carfentanil	10,000x	< ½ grain of salt

Source: https://www.clearyuehealth.com/sufentanil

Training Modules

Stepwise Approach to Acute Pain Management[1–2]



Tips for Treating Acute Pain

- Reserve opioids for pain that is not expected or does not respond to Step 1 and Step 2 treatments
- Prescribe for less than 3 to 5 days then evaluate the need to continue therapy
- Use short acting opioids only

Who can get an X-waiver:

X-waiver qualifying practitioners
- Physicians

X-waiver qualifying other practitioners
- Nurse Practitioner
- Physician Assistant
- Clinical Nurse Specialist
- Certified Registered Nurse Anesthetists
- Certified Nurse Midwives

Obtaining an X-waiver:
- Qualifying practitioners need 8 hours of training while qualifying other practitioners need an additional 16 hours.
- For information on applying for an X-waiver, see **samhsa.gov/medication-assisted-treatment**

Methadone

EFFICACY
- **Reduces illicit opioid use** compared to non-pharmacologic treatment in a meta-analysis of 11 trials.[21]
- According to a study evaluating methadone treatment versus control (no methadone) after 2 years, participants receiving methadone were more likely to be drug free.[22]

PRESCRIBING CONSIDERATIONS
- **Can be used to treat OUD only via accredited opioid treatment programs (OTP).**

FOLLOW-UP AND MONITORING FOR PRIMARY CARE
- **Methadone increases the risk of respiratory depression,** especially when combined with other sedatives.[23]
  - Concurrent alcohol, benzodiazepine, or other sedative use with methadone increases the risk of overdose and death.[6]
  - Significant drug interactions occur with methadone, especially HIV medications and certain anticonvulsants. Interdisciplinary communication and collaboration is essential.[24]
- **Can cause QTc prolongation.** Consider an ECG if patient has risk factors (e.g., arrhythmia, QT prolonging medications).[25,26]
- **Requires regular (at first, daily) attendance at the OTP to receive medication.** This can be disruptive for patients who do not require such intensive monitoring, but also very helpful for those patients who need structure and benefit from regular contact.

Urine Drug Testing Methods[5,13–15]

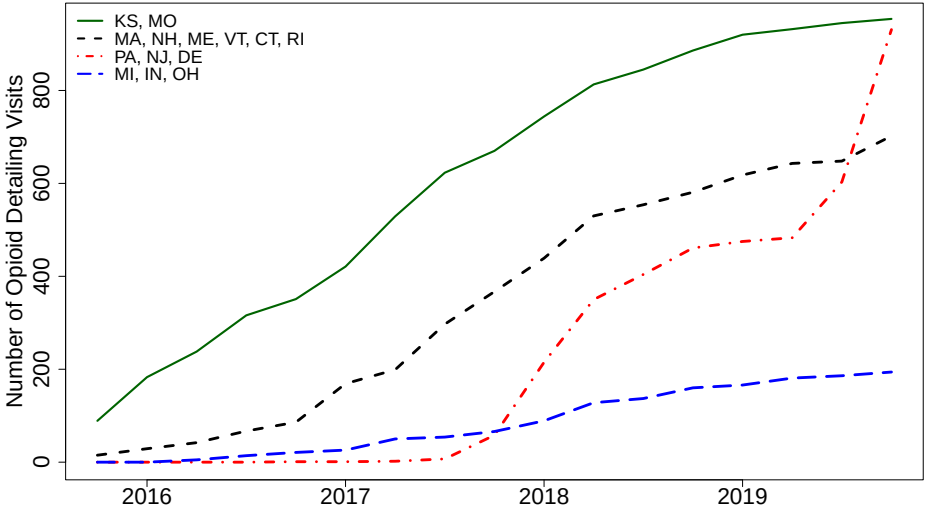
Type of Test	Logistics	Pearls
Initial Screening Test		
Immunoassay*	• Inexpensive • Fast • Widely available	• High sensitivity, low specificity (higher potential for false positives) • Opiate screen not sensitive for semisynthetic (e.g., oxycodone) or synthe opioids (e.g., fentanyl)
Confirmatory Test		
Gas Chromatography-Mass Spectrometry (GCMS)**	• Expensive • Time consuming	• High sensitivity, high specificity • Detects medication even if concentration low • Allows detection of a specific drug/metabolite
Liquid Chromatography-Mass Spectrometry (LCMS)	• Less expensive than GCMS • Faster than GCMS	

*Immunoassay tests have high predictive values for tetrahydrocannabinol (THC), the testing component of marijuana, and also for cocaine, bu lower predictive values for opioids and amphetamines. **GMCS is considered the criterion standard for confirmatory testing.

Implementation

- **Staggered implementation** of academic detailing across stations and physicians (Bounthavong et al. 2017)
  - Resource intensive: dedicated clinical pharmacists to conduct training
  - Required a clinical champion to work with leadership to develop a roll-out plan
- Within stations, physicians were selected based on availability from a priority panel based on their number of patients, opioid practices, etc.
- Between 2015-2019, 3,397 PCPs (53% of all PCPs) were detailed/treated: 2.75M patients in primary care out of 5M

Staggered Treatment



Characteristics of detailed PCPs

	Detailed	Never Detailed
N (Number of PCP Teams)	3,397	3,019
Duration of detailing visit, mins	39.0 (48.6)	
Measures in 2014Q4:		
Naloxone Rx	0.019 (0.329)	0.046 (1.568)
Opioid Rx	234.6 (196.4)	155.3 (149.8)
Milligrams of morphine (MME) per Rx	938.9 (344.8)	888.1 (347.6)
Opioid Agonist Rx	0.104 (1.774)	0.298 (12.577)
Urine Drug Screens	33.2 (40.3)	24.9 (33.9)
PDMP Queries	11.9 (44.6)	10.2 (42.7)
Patient Panel Size	810.7 (374.8)	770.4 (383.0)
Opioid naïve	607.3 (289.2)	606.6 (311.8)
Prior Daily MME $\in (0, 20)$	158.9 (90.5)	132.0 (83.8)
Prior Daily MME ≥ 20	44.5 (41.7)	31.9 (32.2)
Physician Characteristics:		
Age	53.3 (9.3)	53.8 (9.7)
Female	0.57 (0.49)	0.60 (0.49)

Data and Empirical Strategy

Data

- **Academic detailing visits**: administrative workflow data with detailer, time and date, physician ID, clinic, etc.
- **Electronic health records**:
  - Physician response: universe of prescribing, referral, treatment
  - Patient outcomes: universe of prescriptions, medical encounters, mortality from NDI+
  - Non-VA data: Medicare and Medicaid claims and VA-paid outside care
- **Patient panels**: historic data on all PCP-patient relationships with start and end date

Advantage: treatment, physician actions, and impacted patients are all observed and linked at the individual-level

Empirical Strategy: Generalized Difference-in-Differences

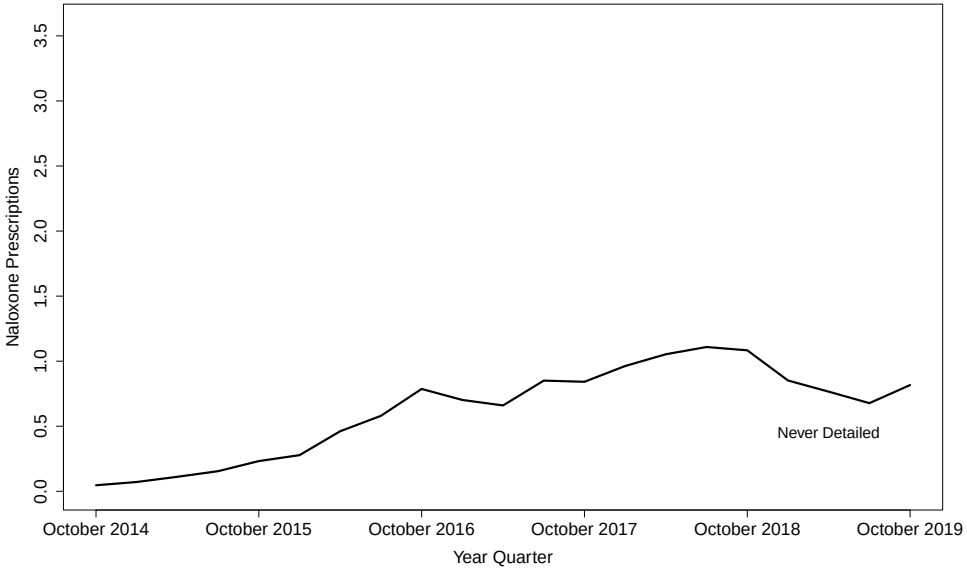
- *High-level:* Compare treated (detailed) PCP teams before and after detailing, compared to those who never get treated
  - Method can accommodate scenarios where treated PCPs are different from non-treated PCPs, as long as their outcomes evolve in parallel, absent detailing ("parallel trends" assumption in diff-in-diff models)
- *Specifics:* Callaway and Sant'Anna (2021) estimator
  - Parallel trends assumption: Units treated in period g only needs to evolve like never-treated group from $g-1$ onwards
  - Demonstrate robustness to Borusyak et al. 2022, Sun & Abraham 2021; Gardner 2021; and canonical two-way fixed effects

Sample and data construction

- **Universe of primary care**: 6,416 PCPs treating 5.1M patients in 2014
  - PCP-patient relationships are constructed one year *prior* to academic detailing program
  - Fixed patient panels $\implies$ no endogenous sorting, patient outcomes are always observed ("*intent-to-treat*")
- **Treatment**: 53% of teams—and thus patients—were detailed between October 2015 and December 2019

Results: Physician Response

Staggered Treatment Intuition: Raw Data



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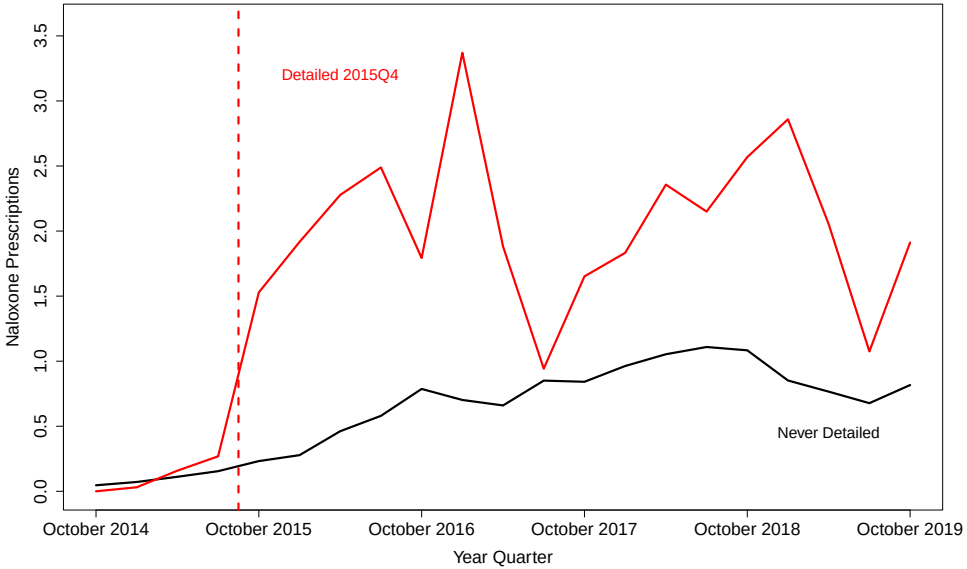

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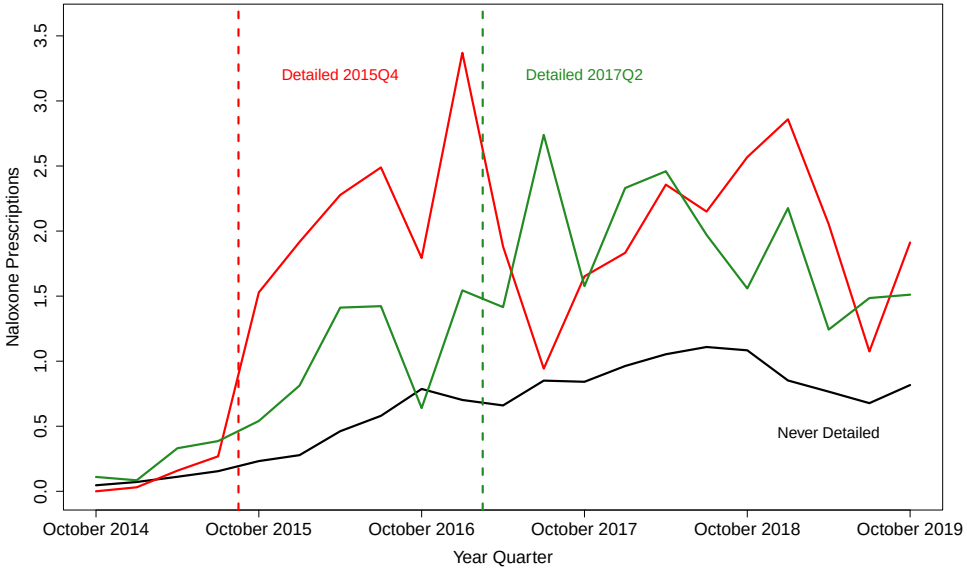

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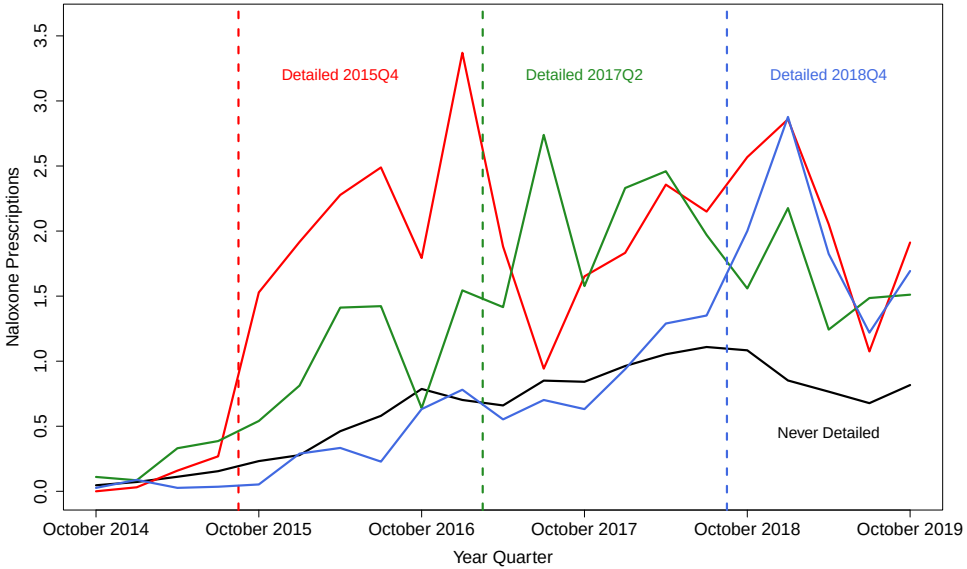
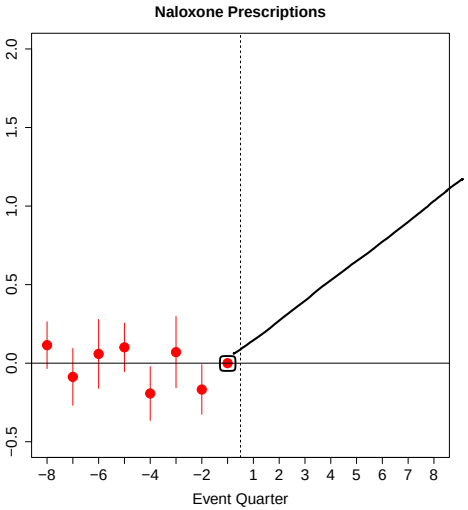


Naloxone prescribing

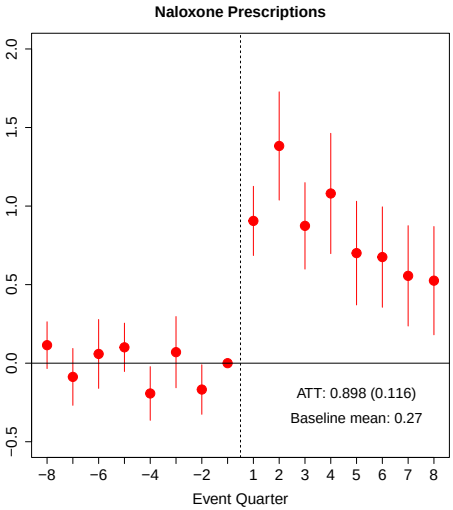


This point represents the difference between the average number of naloxone prescriptions prescrbed by a detailed PCP in the quarter just prior to when they were first detailed, minus the average number of naloxone prescribed by never-detailed PCPs.

This difference is normalized to zero.

The flat points in the quarters prior signify that detailed and never-detailed PCPs were on parallel trajectories in naloxone prescribing prior to the detailed PCP gets detailed.

Naloxone prescribing increases by 328%



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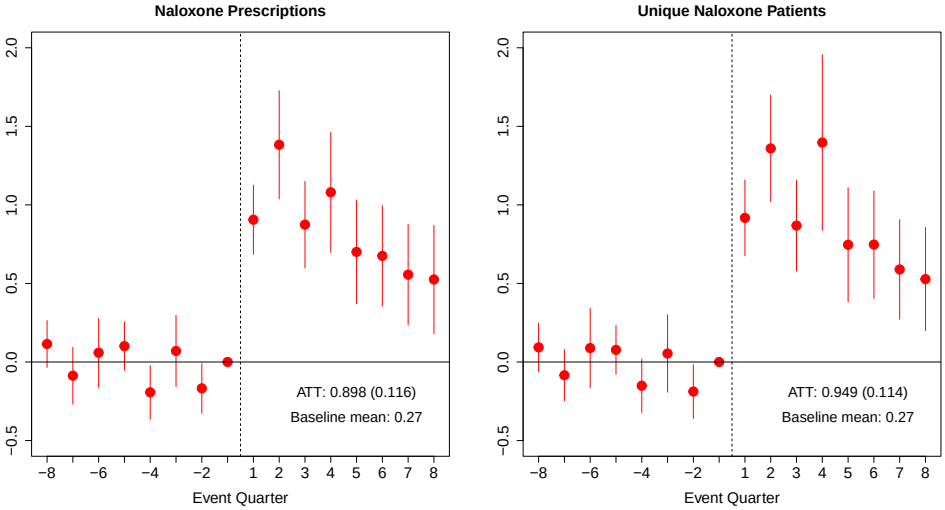
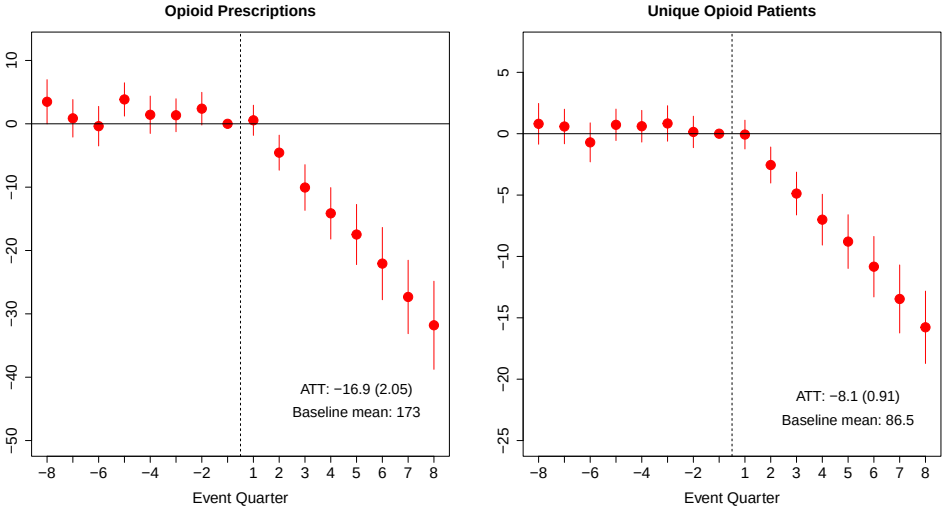


Academic detailing is responsible for 24.5% of all primary care naloxone between 2015–2019

Opioid prescribing declines by 10%



Academic detailing is responsible for 18.2% of the decline in prescribing between 2015–2019

Did dangerous prescribing also decline?

Did the overall reduction in opioid prescribing also reduce dangerous prescribing?

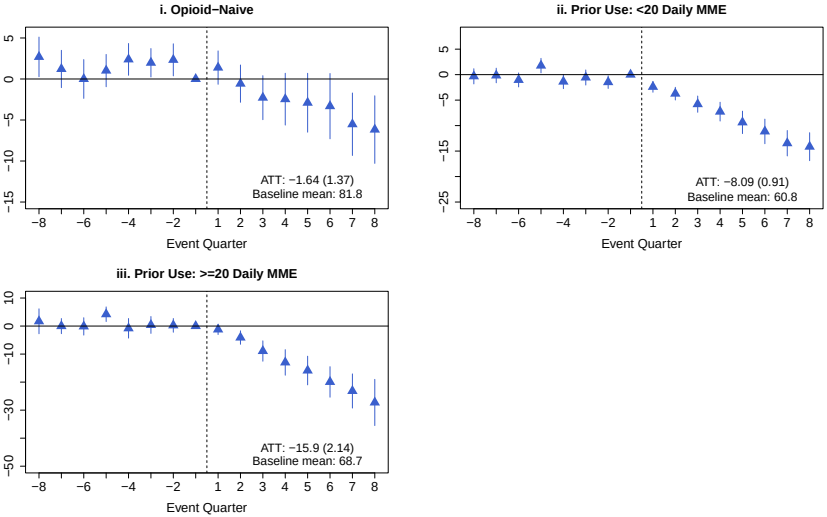
1. *Prescribing to high prior users*
   High prior opioid use is strongest predictor for opioid overdose

2. *Prescribing of high dose intensity*
   CDC and VA/DoD recommendations: opioids over 50 milligrams of morphine (MME) per day associated with significant risk

3. *Opioid and benzodiazepine combination*
   Opioids and sedatives both cause sedation and suppress breathing

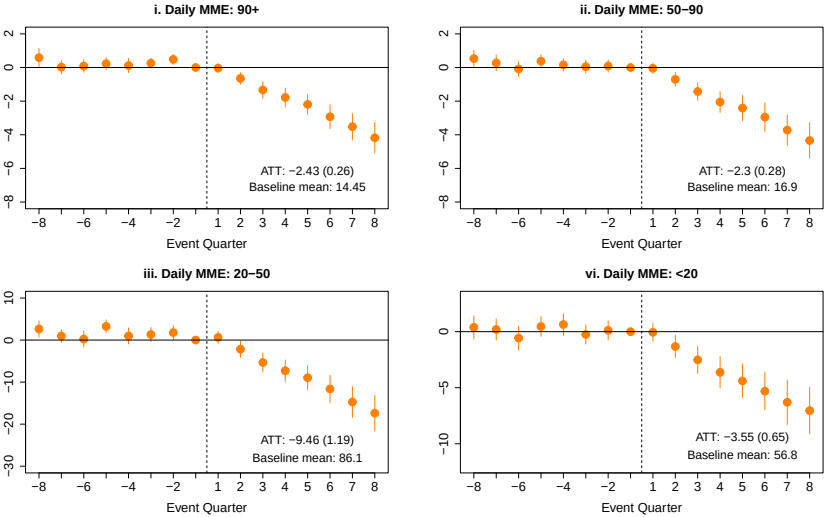
4. *Composite VA overdose risk score*
   Calculated using prior opioid prescription history and medical diagnoses (e.g., opioid use disorder)

High prior opioid users see greatest reduction



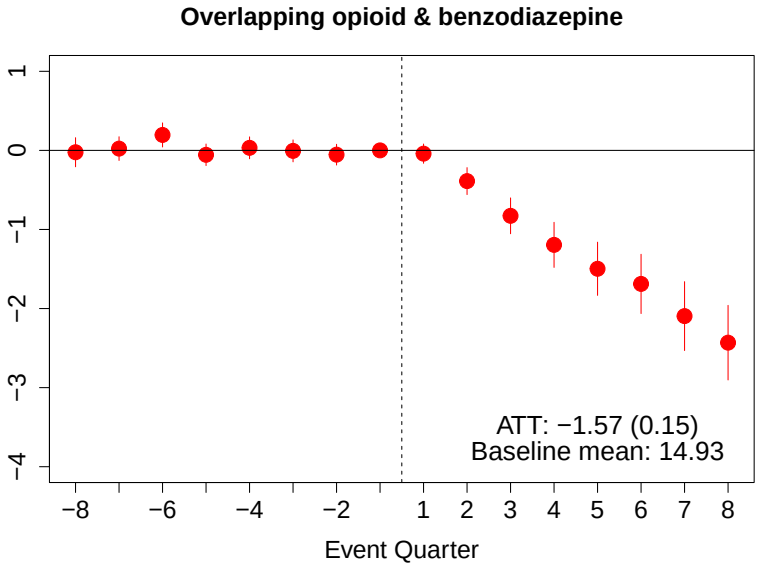
Opioid-naïve and low prior opioid use: 2% and 13% reduction; high prior users: 23% reduction

High dose prescriptions see greatest reduction

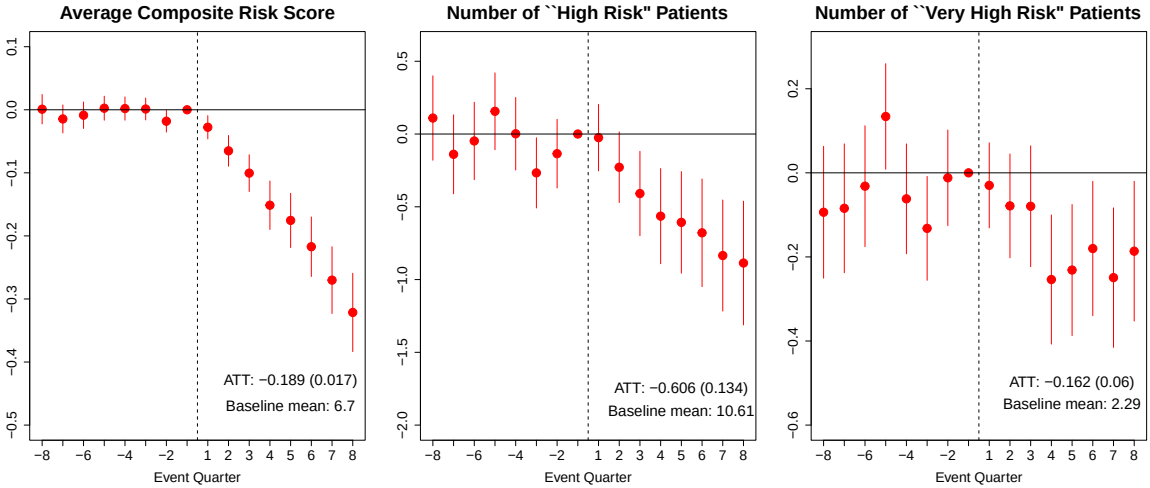


17%, 14%, 11%, and 6% reductions

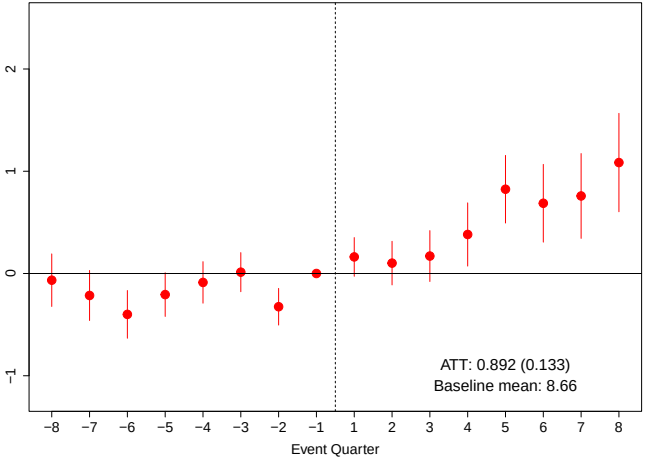
Number of patients with opioid-benzo on-hand declines by 11%



6-7% decline in predicted measure of overdose risk in patients



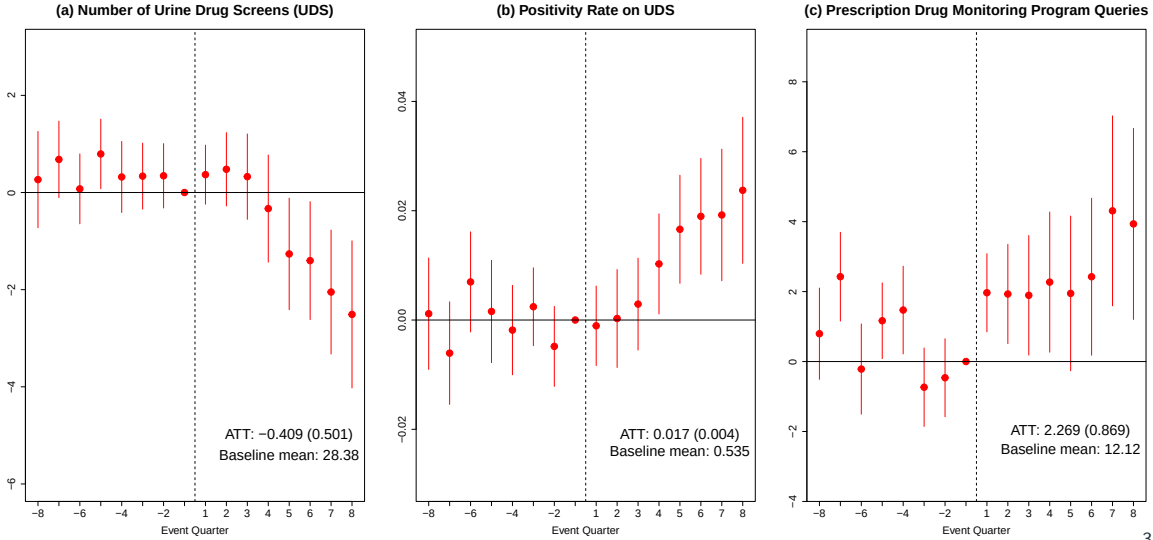
PCPs substitute opioids with alternate pain treatments



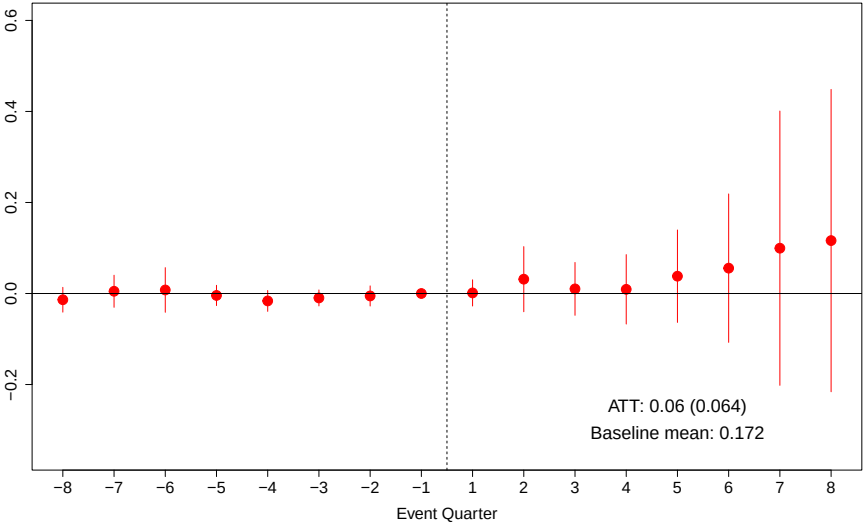
10% increase in referrals to pain clinics, acupuncture, physical therapy, etc.

- Note the baseline referral mean is 1/10 the opioid prescribing rate

Physicians improve risk evaluation



Limited effects on medication for opioid use disorder



Academic detailing succeeded in aligning physician behavior

On the basis of altering physician behavior, the targeted physician education outperformed:

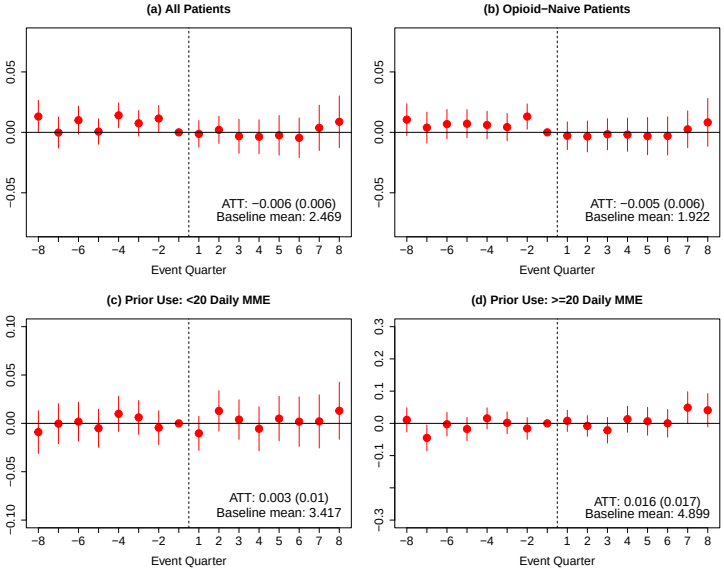
- Other supply-side opioid policies
  - Blanket prescribing limits: Sacks et al. 2021 finds increases short-term prescriptions
  - Broad and blunt policy tools:
    - Naloxone access laws: very noisy effects (Rees et al. 2019, Doleac & Mukherjee 2022)
    - Prescription drug monitoring programs: ambiguous impacts (Buchmueller & Carey 2018) with unintended consequence of diverting to heroin (Kim 2021, Balestra et al. 2021)
  - Letters and emails to high prescribers: Sacarny et al. 2016, 2022 finds no impacts

- Pharmaceutical promotion/detailing by sales reps
  - Smaller effects: Agha & Zeltzer 2021; Carey, Lieber, & Miller 2021 (2%-5%)
  - Short-lived: Shapiro 2018, Carey, Lieber, & Miller 2021

Results: Downstream Outcomes

Did patient outcomes improve?

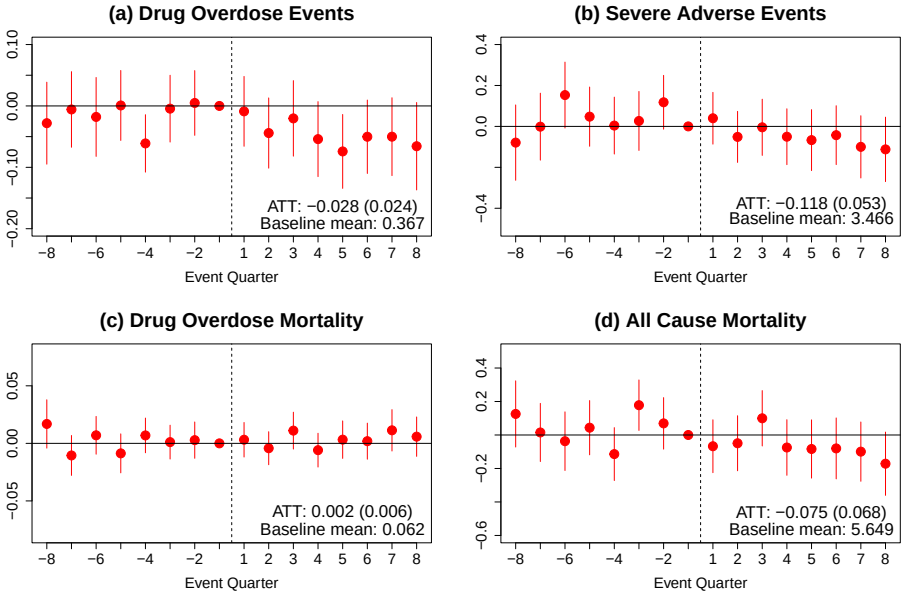
Pain is unchanged: 95% CI rule out 1/4 of a percent



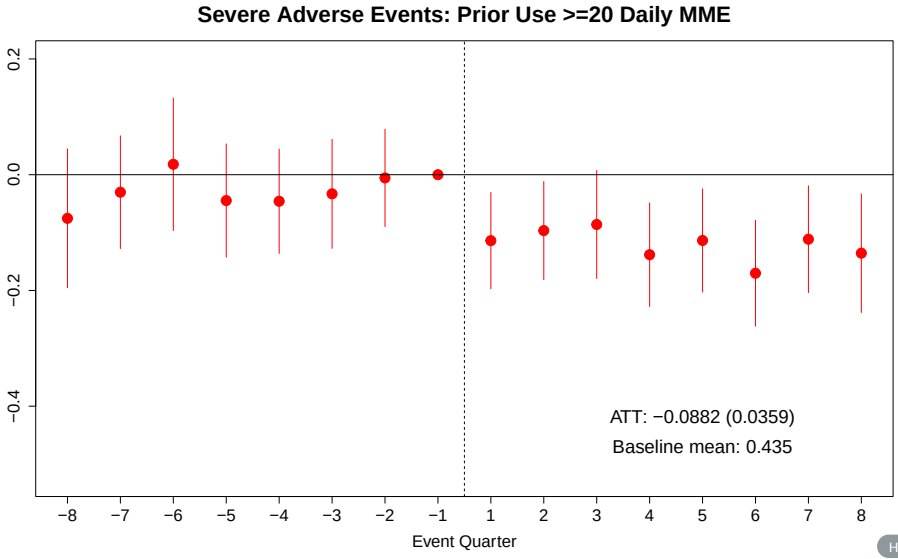
Quasi-experiment estimates on pain

- Often argued that physicians are trading off compassionate pain treatment with risks of addiction when prescribing opioids
- Some small-scale RCTs have challenged that conventional wisdom
  - E.g., Krebs et al. 2018 find NSAIDs as effective as opioids in patients with chronic back, hip, or knee pain ($N = 240$)
- I provide quasi-experimental evidence that *physician-induced reductions* in opioids do not lead to increases in pain for large populations
  - PCPs reduce opioids for precisely the patients who are unlikely to be benefiting in terms of pain relief

Statistically significant 3.4% reduction in severe adverse events



Large (20%) reduction among high prior opioid users



Cost-Benefit Analysis

What was the cost effectiveness of detailing an additional PCP team?

Item	Estimate Source	Dollar Value (2020$)
Naloxone Rx	VA Federal Supply Schedule	ATT: 0.898×8 qtr $\times$ \$67.84
Opioid Rx	VA Federal Supply Schedule	ATT: -16.871×8 qtr $\times$ \$35.26
Serious Adverse Events	VA Average Cost	ATT: -0.118×8 qtr $\times$ \$12,262
Detailing Cost	VA Human Resources Data	Salary \$139,784 $\div$ 273 visits/year
Other detailing costs	IRS Standard Mileage Rate	50 miles $\times$ \$0.575 per mile

Net Marginal Benefit: $=$**\$15,306.16** per visit

- *Caveats:* Analysis ignores statistically insignificant outcomes, ignores initial fixed cost, and is calculated over two years

Mechanisms

Are the results driven by learning ("education") or a fear of being monitored ("Hawthorne effect")?

I argue mostly education for several reasons:

- No explicit penalties for being a high prescriber in the VA
  - Senior and higher salaried PCPs reduced prescribing the most Heterogeneity
- VA surveys found over 90% of treated providers cited improvements in knowledge (Bounthavong et al. 2021)
- Prior research on monitoring-related notifications have generally found short-lived or no impacts on prescribing
- Persistent changes for years, suggesting PCPs being shifted to different practice trajectories similar to differences between graduating cohorts (Schnell & Currie 2018)

What can we learn more generally about educating experts?

- Information provided by expert peers is more powerful than incentive/nudge from outside sources (e.g., salesperson)
  - Perhaps peers are more respected by clinicians
- Experts likely have expert knowledge on the expected treatment effect heterogeneity of their patients
  - Physicians allocate resources based on expert judgment when facing cost-saving incentives (Gaynor, Rebitzer, & Taylor 2004)
  - Likely context-specific: Abaluck et al. 2021 do not find private knowledge of treatment effects in stroke prevention

Conclusion

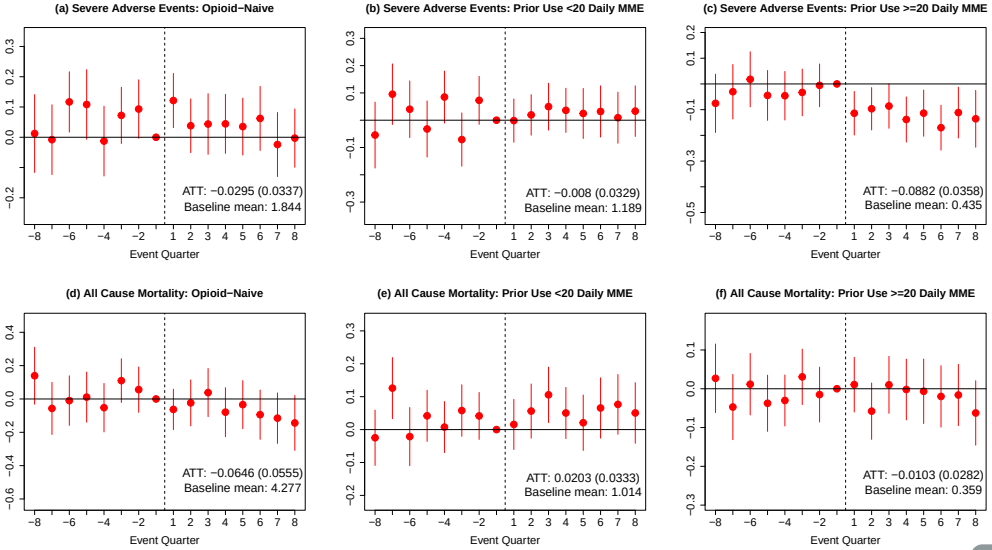
- Investigate the largest opioid education program in the US targeted at clinicians
- Education succeeded in altering provider behavior
  - Naloxone prescribing: $+328\%$
  - Opioid prescribing: -10%
  - Alternate pain treatments: $+10\%$
  - PDMP queries: $+20\%$
- Patient pain was unchanged
- Modest but statistically significant improvements to severe adverse events, mostly concentrated among high prior opioid users
- Educational outreach to experts by experts may be an effective tool for policymakers
  - Open question as to whether this extends to other settings

Thank you: Mark Bounthavong, Melissa Christopher, everyone in ADS, and all the academic detailers

Contact: jonathanzhang@mcmaster.ca

Full paper: www.jonathanzhang.net/opioideducation

Downstream outcomes by predicted opioid overdose risk



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Covariate-Specific Trends

		Sequentially adding controls:		
	Baseline	+ Station	+ Panel Size	+ # High Risk Patients
	(1)	(2)	(3)	(4)
Naloxone Rx	0.898***	0.911***	0.908***	0.902***
	(0.108)	(0.099)	(0.107)	(0.114)
Opioid Rx	−16.871***	−17.071***	−15.895***	−14.638***
	(1.940)	(1.987)	(1.946)	(2.027)
Agonist Rx	0.060	0.068	0.066	0.078
	(0.069)	(0.072)	(0.071)	(0.069)
PDMP Queries	2.269**	2.492**	2.397**	2.113**
	(0.916)	(1.062)	(1.148)	(1.067)
Pain Score	−0.006	−0.006	−0.007	−0.005
	(0.006)	(0.006)	(0.06)	(0.006)
SAEs	−0.118**	−0.122**	−0.127**	−0.133**
	(0.051)	(0.052)	(0.055)	(0.055)
Mortality	−0.075	−0.082	−0.080	−0.080
	(0.062)	(0.067)	(0.064)	(0.066)

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Placebo Test: Patients who did not see PCP in prior year

	Outcome:						
	Naloxone	Opioids	Agonist	PDMPs	Pain	SAEs	Deaths
ATT	0.007***	−0.123***	0.002	0.032***	0.0001	−0.008	0.008
	(0.003)	(0.044)	(0.003)	(0.012)	(0.020)	(0.013)	(0.029)
Mean Dep. Var	0.0002	0.657	0.002	0.016	-	0.177	1.122
N=	780,068	780,068	780,068	780,068	780,068	780,068	780,068

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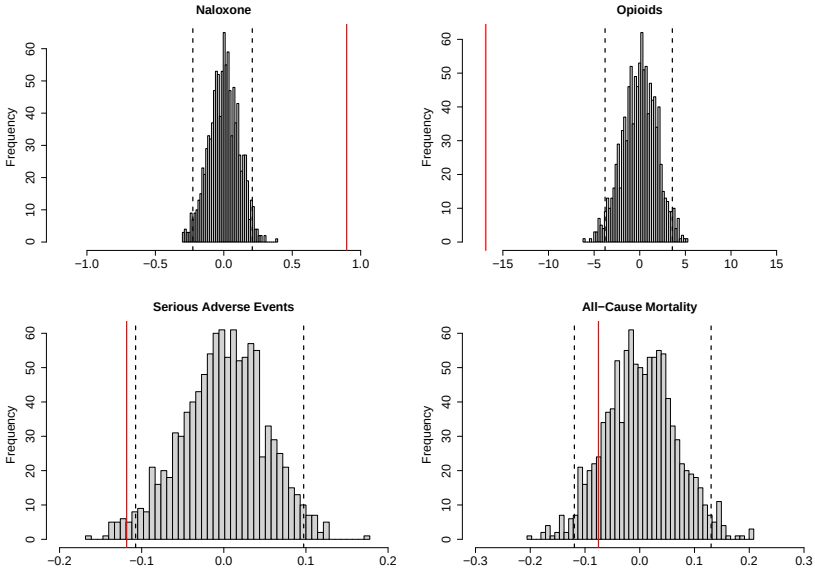
Permutation Test



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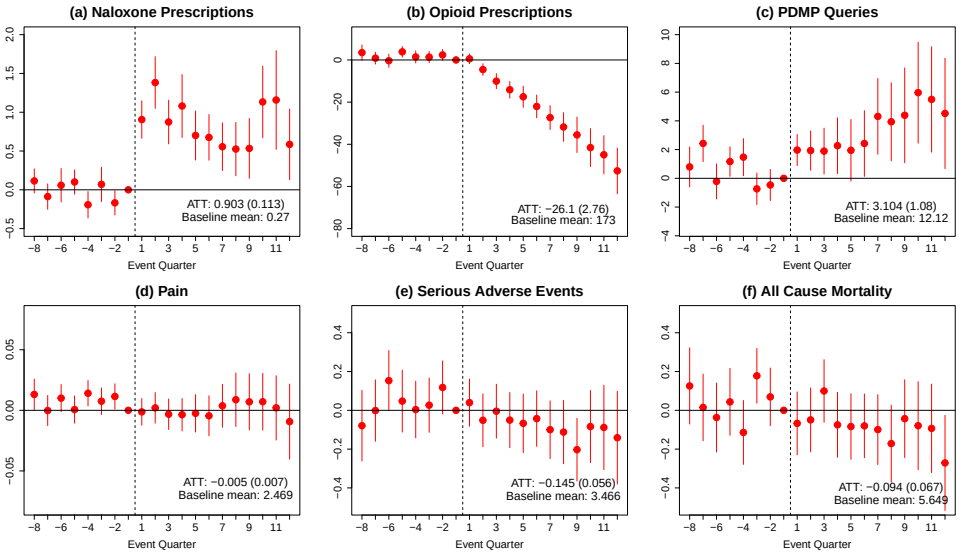
Findings persist into year 3



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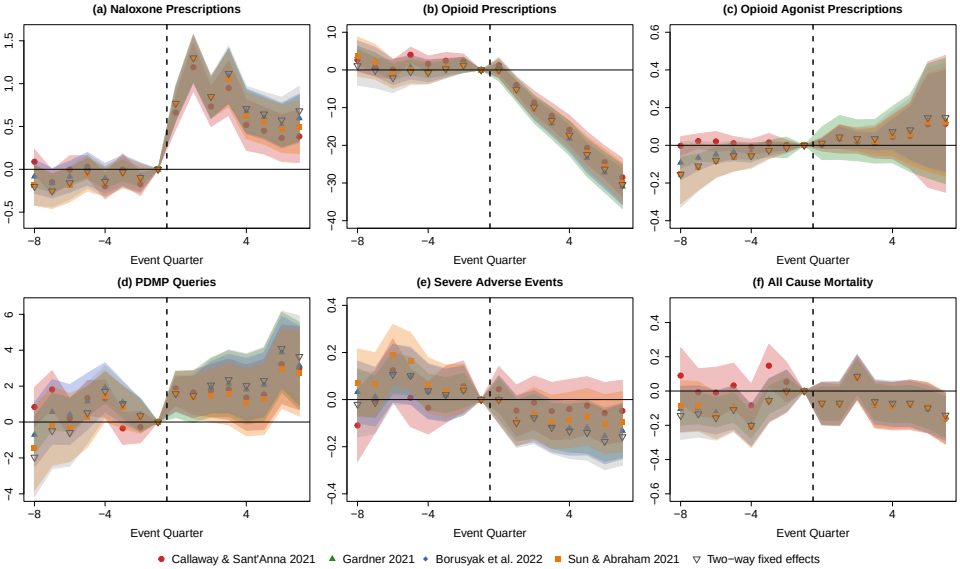
Alternate DiD estimators



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Modeling for peer spillovers

	Dependent variable:						
	Naloxone	Opioids	Agonists	PDMPs	Pain	SAEs	Death
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Treated_{it}$	0.740***	−14.536***	0.096	7.034***	0.019	0.163***	0.157***
	(0.142)	(3.678)	(0.076)	(1.654)	(0.064)	(0.078)	(0.053)
$Treated_{it} \times FractionDetailed_{it}$	0.180	−5.334	−0.012	−9.015***	0.049	−0.510***	−0.221***
	(0.207)	(5.427)	(0.070)	(2.413)	(0.126)	(0.095)	(0.078)
Pre-Detailing Mean	0.274	173.334	0.172	12.124	2.469	3.466	5.649

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Heterogeneous effects by PCP characteristics

	Naloxone	Opioid	Agonist	PDMP	Pain	SAEs	Mortality
Male-Led Teams	0.924***	−22.880***	0.127	4.268*	−0.007	−0.019	−0.029
(N=2,460)	(0.189)	(2.801)	(0.155)	(1.906)	(0.010)	(0.073)	(0.101)
Pre-Detailing Mean:	0.338	211.702	0.352	13.094	2.469	3.649	6.272
Female-Led Teams	0.802***	−10.371***	0.025	2.091	−0.008	−0.175***	−0.104
(N=3,413)	(0.132)	(2.478)	(0.037)	(1.300)	(0.008)	(0.072)	(0.083)
Pre-Detailing Mean:	0.237	146.125	0.024	11.803	2.472	3.331	5.234
Young ($<$ 55) Teams	0.764***	−11.530***	0.006	4.627***	−0.002	−0.109	−0.030
(N=2,959)	(0.154)	(2.429)	(0.038)	(1.638)	(0.009)	(0.085)	(0.099)
Pre-Detailing Mean:	0.231	161.149	0.070	12.871	2.487	3.340	5.206
Old ($\geq$ 55) Teams	0.887***	−22.859***	0.135	3.608***	−0.006	−0.035	−0.125
(N=2,685)	(0.173)	(3.201)	(0.153)	(1.655)	(0.009)	(0.077)	(0.094)
Pre-Detailing Mean:	0.332	188.497	0.279	13.409	2.471	3.593	6.074
Below Median Salary	0.837***	−8.135***	0.017	1.856	−0.012	−0.063	−0.105
(N=2,953)	(0.142)	(2.406)	(0.037)	(1.530)	(0.009)	(0.085)	(0.097)
Pre-Detailing Mean:	0.178	144.311	0.079	12.325	2.437	3.452	5.367
Above Median Salary	0.952***	−23.731***	0.108	4.058***	−0.003	−0.164**	−0.051
(N=2,952)	(0.168)	(2.724)	(0.127)	(1.479)	(0.008)	(0.079)	(0.092)
Pre-Detailing Mean:	0.380	210.052	0.249	12.872	2.533	3.584	5.727

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