

When PCPs reduced clinical volume during the pandemic, they reduced EHR use by less

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Background

- A lack of PCPs is already creating access barriers for routine care
- An aging workforce, EHR-driven administrative burden, and pandemic-era burnout mean that many PCPs intend to reduce their clinical volume¹
- The consequences for PCPs' EHR use patterns and panel composition are unknown

Study questions

- How much EHR time do PCPs save when they reduce clinical volume?
- Do EHR use trends vary by when PCPs initiated their reductions?
- How do PCPs' patient panels evolve after a reduction?

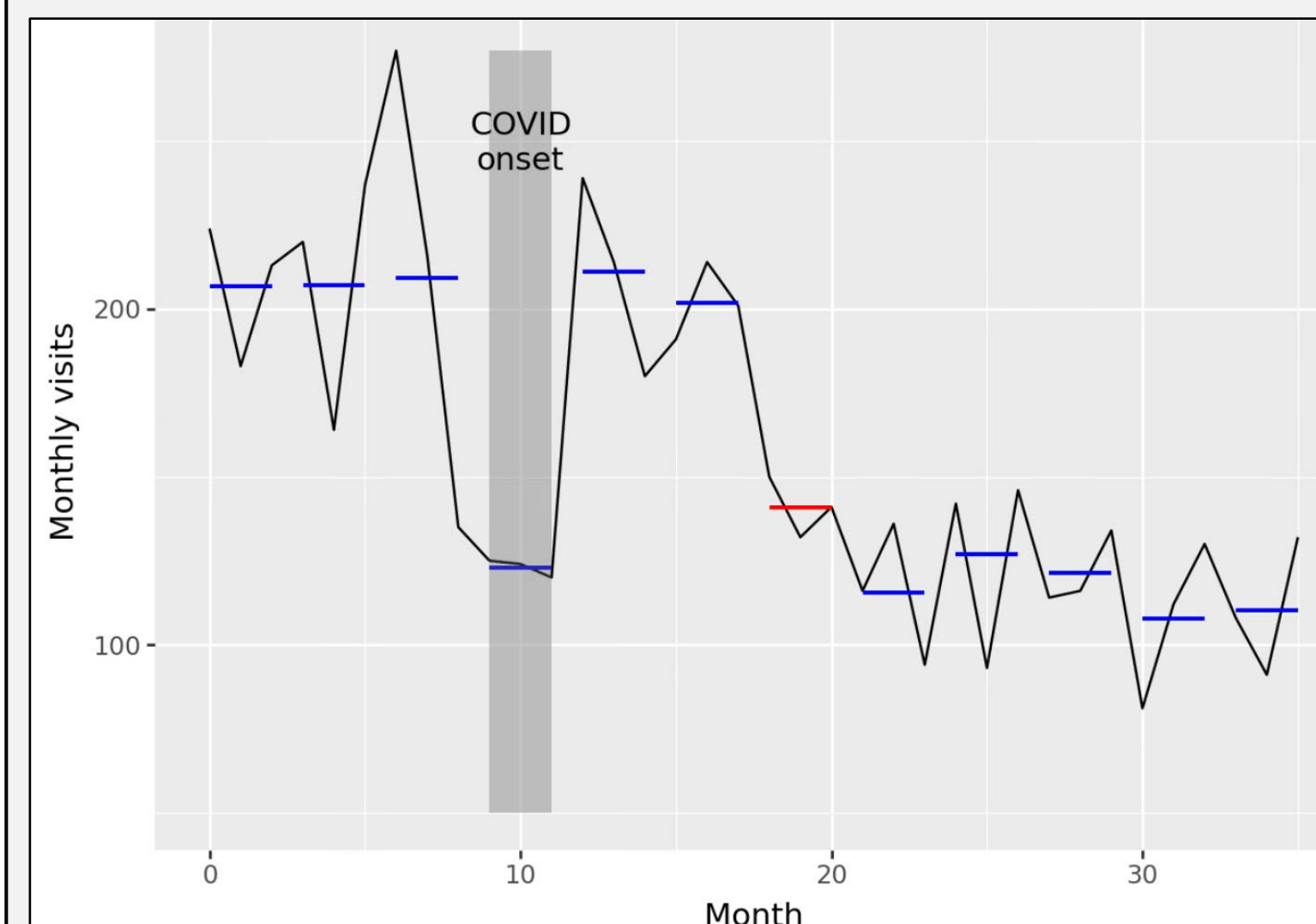
Data

- Monthly Epic Signal audit log data from May 2019 to April 2022
- 17,943 PCPs across 184 health systems
- EHR-use variables: total time in EHR, patient In-Basket message volume, number of days off with EHR use
- Patient panel variables: patient age, problems per visit, orders per visit, percent of visits billed to new patients, percent billed as severe (level 4 or 5 complexity)
- Physician variables: primary care subspecialty, health system type, number of physicians in system, region

Methods

- Identify clinical volume reducers: a quarter marks a reduction if every subsequent quarter has at least 10% less volume than every previous quarter (excluding COVID-onset, Feb – Apr '20)
- Estimate changes in EHR use for reducers vs. non-reducers using staggered difference-in-differences (Callaway Sant'Anna)

Example of volume timeseries for reducer:



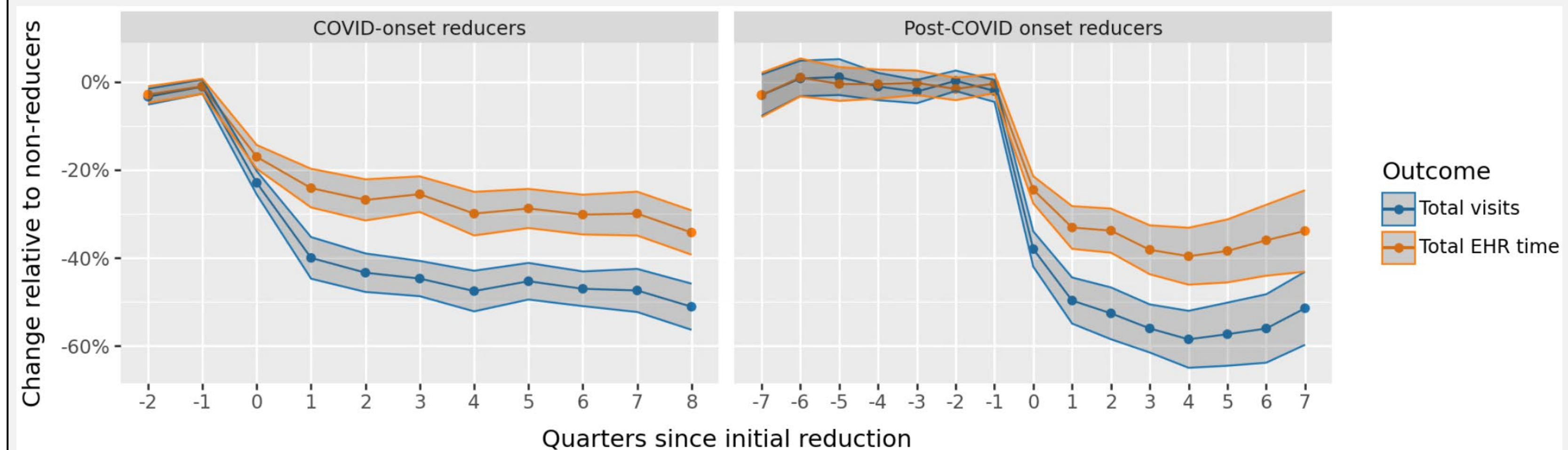
Results: sample description

- 4.5% of PCPs were identified as reducers
- Reducers resembled non-reducers in pre-COVID baseline (May '19 – Jan '20)

	Non-reducers	Reducers	Difference
N	17,812	873	
Specialty			
General Internal Medicine, %	41.8%	41.9%	-0.1%
Family Medicine, %	56.6%	56.5%	0.2%
Geriatric Medicine, %	1.6%	1.6%	0.0%
Clinical effort			
Total visits per month	220.8	205.8	15.0***
Total days worked per month	15.1	14.7	0.4*
EHR use			
EHR minutes per visit	20.0	19.8	0.2
Patient In-Basket messages per visit	0.29	0.25	0.04***
Unscheduled days per month with EHR use	6.2	6.3	-0.2
Organizational setting			
Total physicians	634.6	656.7	-22.1
Total PCPs	181.5	178.9	2.6
Patient panel			
Age	54.3	54.2	0.2
Problems per visit	10.9	10.8	0.1
% of visits billed as severe	58.7%	56.7%	2.0%*
% of visits billed for new patients	5.3%	5.4%	-0.1%

Results: EHR use

- COVID-onset reducers had smaller but faster reductions than post-COVID onset reducers
- EHR use declined by less than visit volume



Results: other practice patterns

- Patient In-Basket messages per visit initially increased but then fell back to baseline
- Panel composition did not substantially change

Outcome	Pre-COVID mean	Change relative to non-reducers as percentage of Pre-COVID mean: Quarters after initial reduction									
		0	1	2	3	4	5	6	7	8	
EHR use											
Patient In-Basket messages per visit	0.3	21.9%***	30.3%***	27.2%***	26.1%***	26.7%***	18.4%**	13.8%*	9.5%	4.8%	
Unscheduled days per month with EHR use	6.3	5.4%**	8.4%***	8.2%***	9.7%***	11.6%***	7.4%**	9.1%***	9.7%***	10.7%***	
Patient characteristics											
Age	54.2	1.1%***	1.6%***	2.0%***	1.8%***	1.9%***	1.6%***	1.8%***	1.8%***	1.4%***	
Problems per visit	10.7	1.4%***	3.0%***	4.1%***	3.7%***	4.6%***	4.0%***	4.3%***	3.9%***	2.5%*	
% of visits billed as severe	56.2%	2.2%***	3.0%**	3.4%**	4.5%***	4.7%***	3.4%*	4.4%**	3.2%*	3.6%	
% of visits billed for new patients	5.2%	-5.6%*	-7.1%	-3.7%	-2.3%	-7.0%	-3.2%	-3.3%	-5.0%	-2.4%	

Conclusion

- EHR use may involve substantial "fixed costs" that do not scale with visit volume
- PCPs did not selectively retain healthier patients when reducing clinical volume during COVID