

Can state laws permitting more direct access to physical therapy reduce healthcare use and spending? An instrumental variable analysis of Medicare patients with atraumatic rotator cuff tears

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BACKGROUND

Seeking physical therapy (PT) early for treatment may reduce healthcare spending and utilization among patients with musculoskeletal conditions.

Current guidelines outlined by the American Academy of Orthopaedic Surgeons recommend using PT as the first line of treatment.

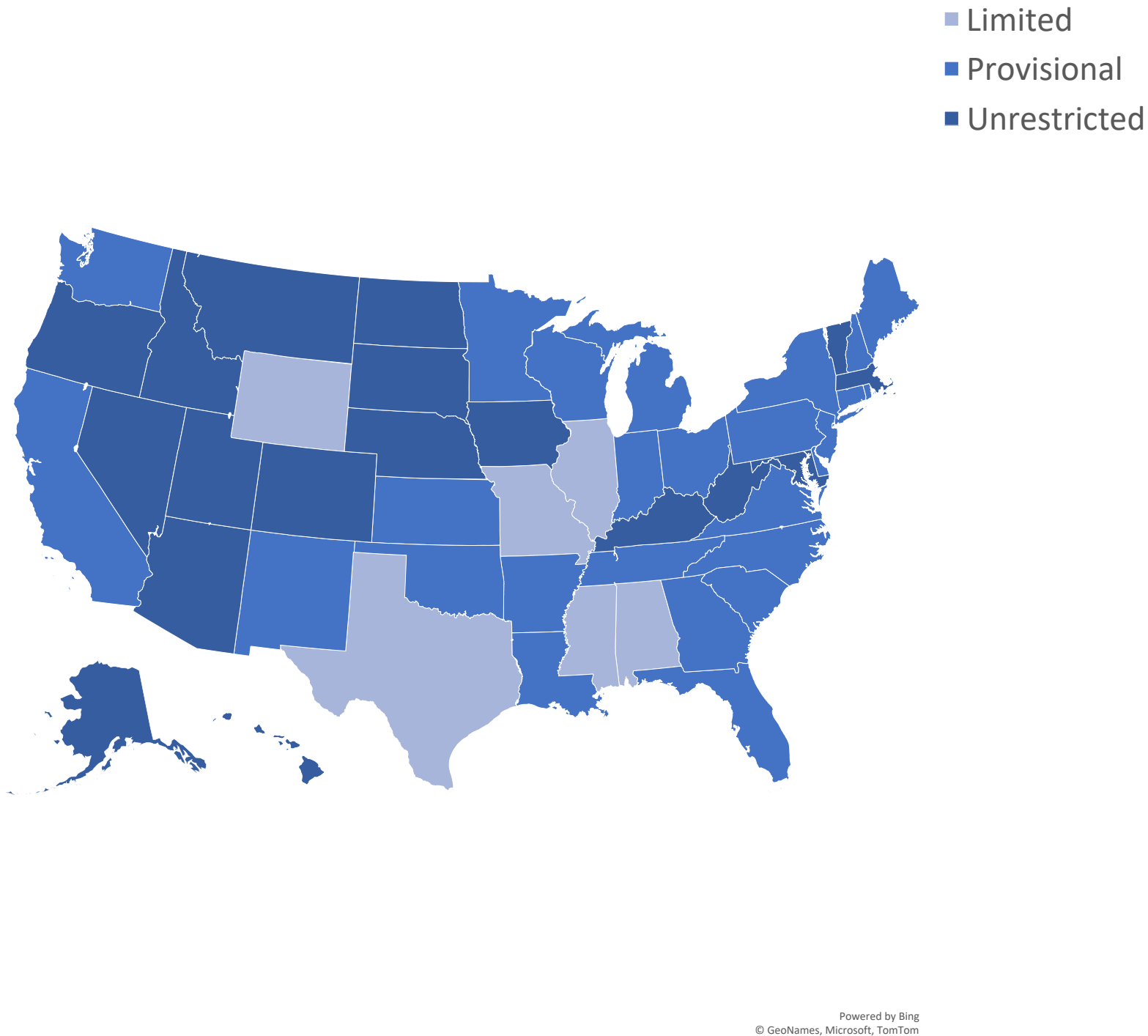


Fig 1: Variation in PT direct access laws by state in 2017

State laws vary in the extent to which patients can access a physical therapist without a physician referral, ranging from limited (**6 states**), provisional (**26 states and DC**) to unrestricted direct access (**18 states**).

OBJECTIVE

The objective was to assess whether **greater early use of PT** in states permitting more direct access was associated with reductions in subsequent in healthcare utilization and spending.

POPULATION STUDIED

Using Medicare claims data from 2016 to 2018, identified beneficiaries with a new onset of shoulder pain (index date) in 2017 with a subsequent diagnosis of atraumatic rotator cuff tear (ARCT).

METHODS

Instrumental variable methods to assess the impacts on spending and utilization for those patients whose use of physical therapy was influenced by **state direct access laws**.

Outcome variables	IV	Approach
<ul style="list-style-type: none">Early physical therapyUtilization (X-ray, Advanced imaging, injections, surgical repair and hospitalization)Spending (total, provider, outpatient, inpatient, DME, SNF, hospice, prescription drug costs, HHA)	APTA direct access categories (states with limited access served as our reference category)	IV approach Two-stage least square regression (2SLS) $PT_i = \alpha_0 + \alpha_1 Z_i + \alpha_m X_i + \partial_i$ (1) $Outcomes_i = \beta_0 + \beta_1 PT_i^* + \beta_m X_i + \epsilon_i$ (2)

RESULTS

After applying all our exclusion criteria, total sample of **66,361** individuals. 15.1% patients used early PT.

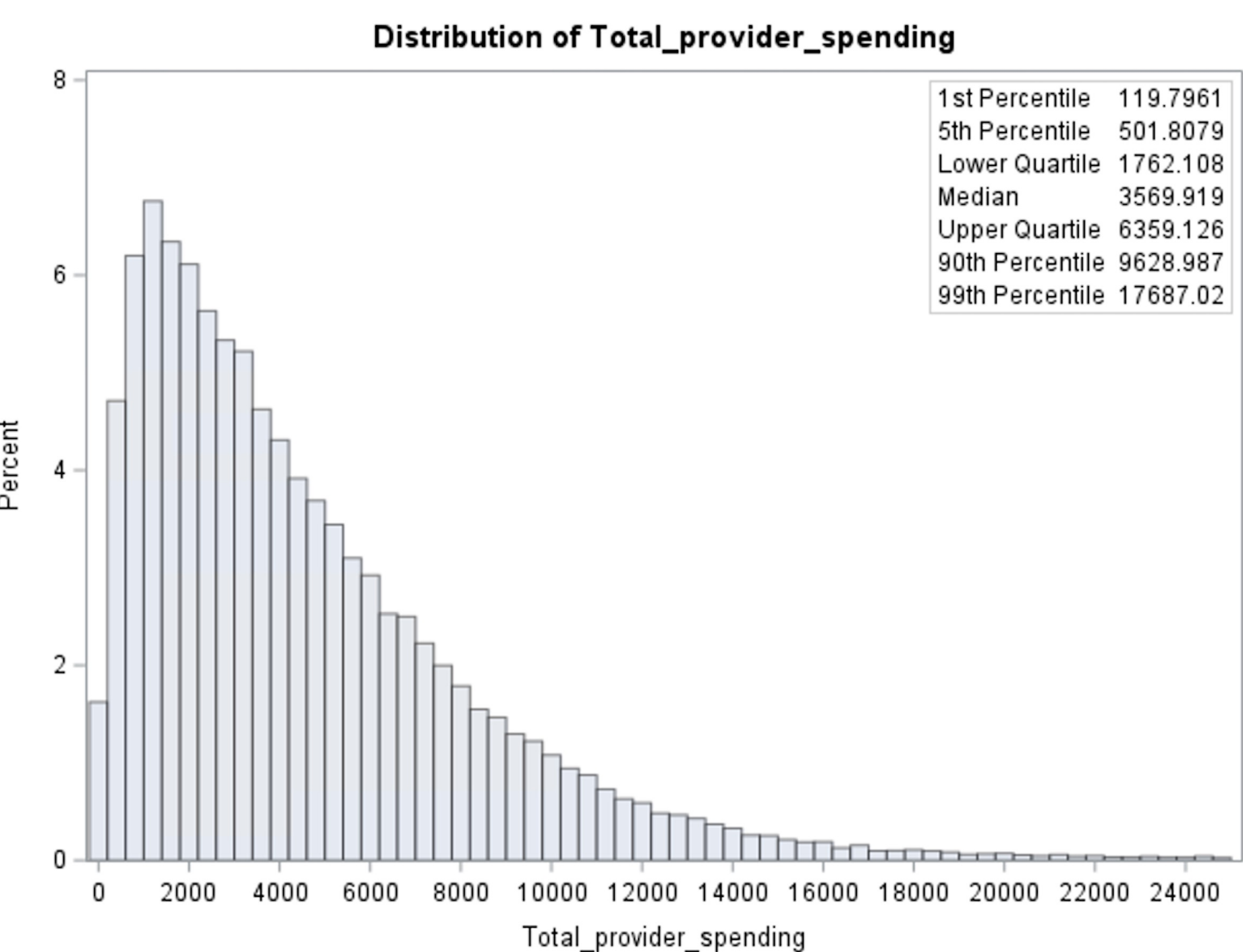


Fig 2: Distribution of total provider spending.

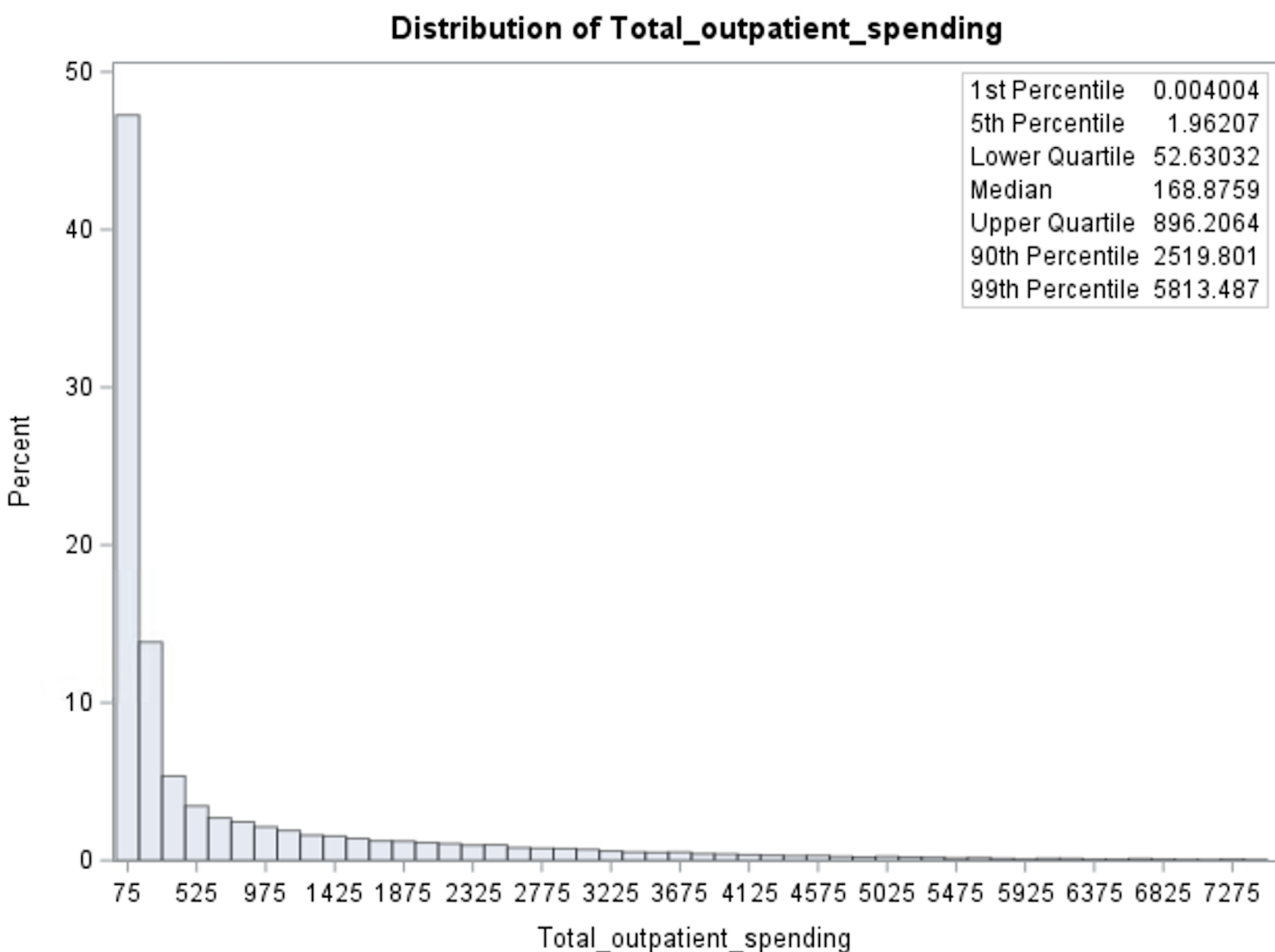


Fig 3: Distribution of total outpatient spending.

PRINCIPAL FINDINGS

Healthcare utilization measures	IV estimates (standard error)	Healthcare spending measures	IV estimates (standard error)
F-value	16.38*	Total	-777 (6,541)
Xray	-0.34 (0.22)	Provider	6,869 * (2,553)
Advanced imaging ^a	0.35 (0.43)	Outpatient	-6,529 * (1,620)
ARCT surgical repair	-0.5 * (0.22)	Inpatient	-7,331 * (3,579)
Hospitalization	-0.51 * (0.19)	Prescription drug	10,833 * (3,513)
Injection	-0.10 (0.11)	Skilled Nursing Facilities	-2,128 (1,820)
^a CT and MRI *Statistically significant results (p<0.05) in bold 2SLS model that controls for all the covariates sex, age categories, race categories, FRI, CCI, use of physical therapy in the baseline period, baseline expenditure		Hospice	6.6 (5.7)
		Durable medical equipment	-1,086 (960)
		Home health agency	-1,414 * (322)

DISCUSSION AND CONCLUSIONS

- The choice to visit a physical therapist as early provider, influenced by state direct access laws, is associated with lower rate of surgery and and hospitalization.
- No change in overall healthcare spending due to shift from outpatient, inpatient to provider and prescription drug spending.
- Our results have direct policy **implications** where further liberalizing the state direct access laws can decrease utilization for some services.
- Future studies should examine the impact of these laws on other orthopaedic conditions.

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