Physical Therapist Scope of Practice

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Introduction & Motivation

- Physical Therapists (PTs) provide non-pharmaceutical and non-surgical interventions, substituting costly physician care.
- While all states recognize PT as an autonomous clinical profession, the allowable practices differ substantially.
- Patient safety considerations but also by professional competition and lobbying.
- This landscape produces meaningful cross-state variation, which makes PT a strong candidate for studying the effects of regulatory restrictiveness.
- This paper provides a systematic measure to study the cross-state variation.
- This evidence can help states and policymakers evaluate PT regulations and benchmark them against other health professions.

Previous Literature

- Difference in state regulations can significantly shape labor markets and healthcare outcomes, influencing wages, hours worked, and service prices. (Kleiner et al., 2016)
- Providing prescriptive authority to pharmacists improves timely access and reduce costly care. (Shakya et al., 2025)
- Expanding prescriptive authority for psychologists reduces suicide rates by 5–7 percent.(Choudhury and Plemmons, 2023)
- Many restrictions can be due to professional level competitions and not necessarily safety concerns.(Huijbregts, 2007)
- When PT allowed first without referrals, it reduces opioids and surgeries and autonomy increases service availability in rural and underserved areas.(Hon et al., 2021)
- Expanding chiropractice scope of practice improves wages and reduces hours worked. (Timmons et al., 2016)

Data Collection

- A systematic review was conducted for each state's legislation regarding the Scope of Practice (SOP) of PT.
- The primary data was cross checked by a team of expert lawyers and verified.
- Location data was collected from YourEconomy Time Series (YTS) data.

Attribute Scope

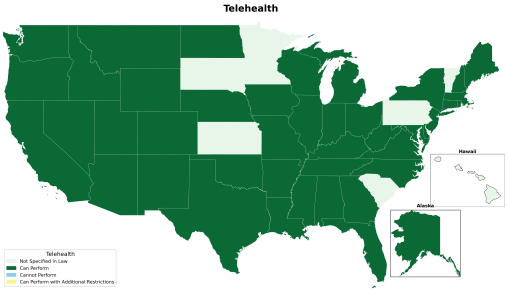


Figure: 1

(a) Telehealth SOP

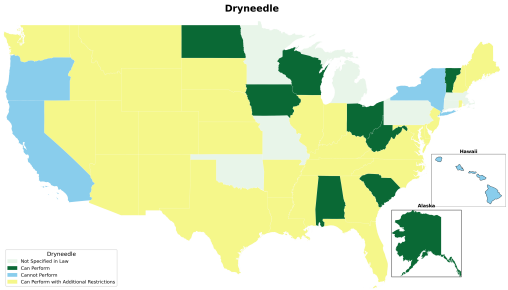


Figure: 2

(b) Dry Needling SOP

Attribute Scope

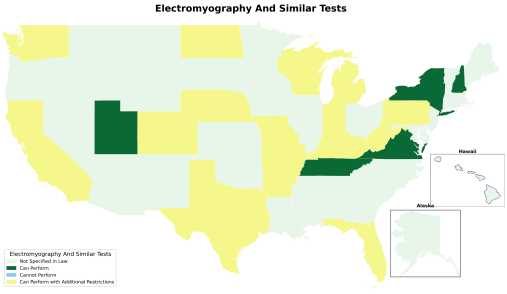


Figure: 1

(a) Electromyography and Similar Tests SOP

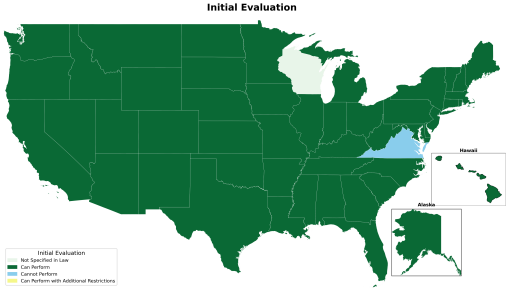


Figure: 2

(b) Initial Evaluation SOP

Attribute Scope

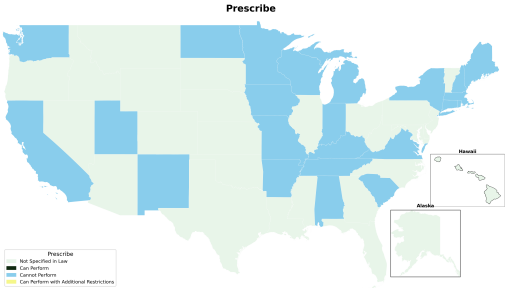


Figure: 1

(a) Prescription SOP

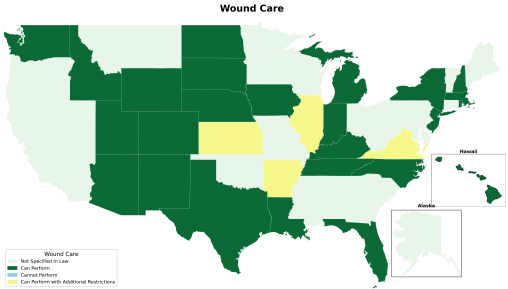


Figure: 2

(b) Wound Care SOP

Attribute Scope

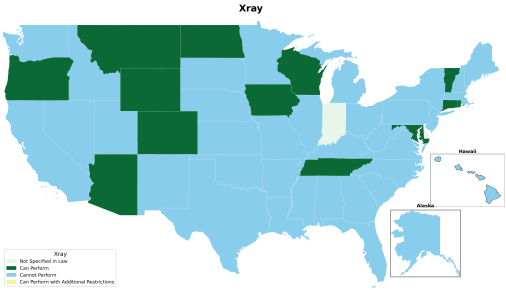


Figure: 1

(a) X-Ray SOP

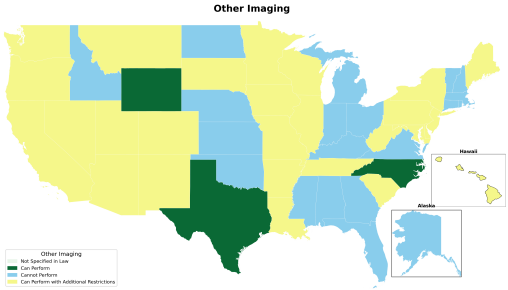


Figure: 2

(b) Other Imaging SOP

Treatment Days SOP

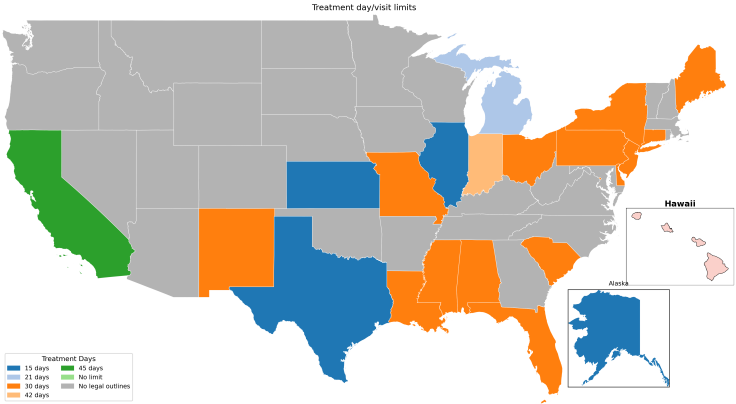


Figure: Number of Days PT can treat a patient

Count of PT across Counties

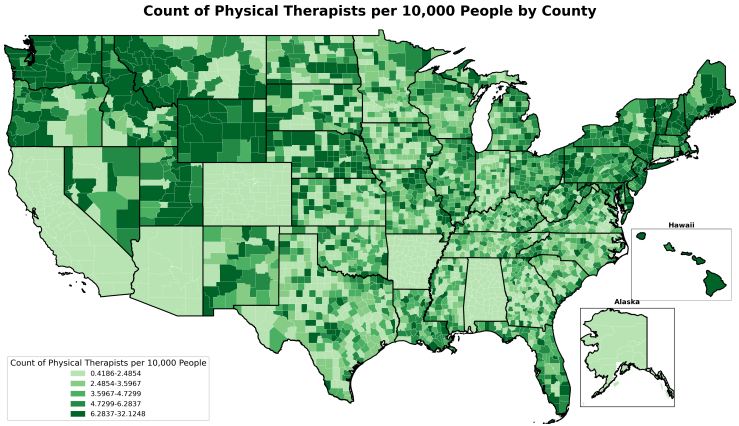
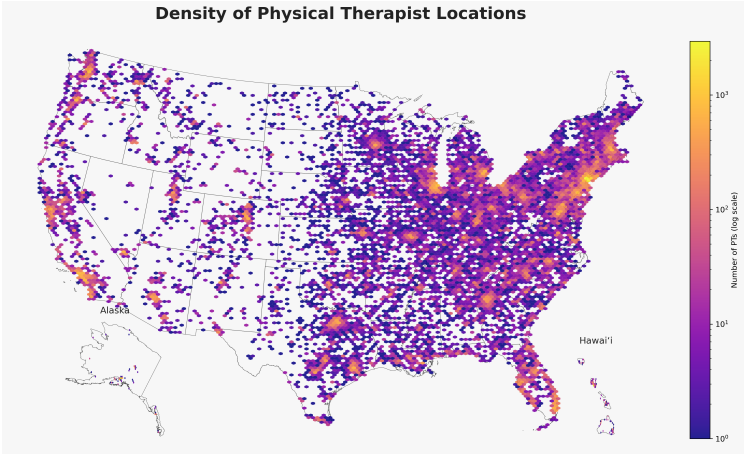


Figure: Count of PT per 10,000 people

Location of PTs



Scope of Practice Autonomy Index (Non-weighted)

- Based on previous literature (Flowers et al., 2024; Trudeau et al., 2025)
- For each state, count the number of SOP items that physical therapists *can perform without restriction*; 1 if can perform, 0 otherwise.
- Let x_i denote this total count for state i; compute the minimum and maximum values of x_i across all states, denoted $\min(x)$ and $\max(x)$.
- Construct a 0–10 index using min–max normalization:

$$A_{\text{index},i} = \frac{x_i - \min(x)}{\max(x) - \min(x)} \times 10,$$

where higher values indicate a less restrictive (higher autonomy) scope of practice.

Scope of Practice Autonomy Index (Weighted)

- Assign ordered weights to each SOP category to reflect regulatory restrictiveness:
  0 = not specified, **1 = with additional license**, **2 = can perform**.
- Convert each state's SOP entries to weighted values and sum them to obtain a raw score S_i.
- Normalize S_i to a 0–10 scale using observed minimum and maximum values:

$$A_{\text{index},i} = \frac{S_i - \min(S)}{\max(S) - \min(S)} \times 10.$$

- Higher scores continue to reflect less restrictive (higher autonomy) practice authority, now incorporating partial permissions.

Non-Weighted Index Ranking

No.	Rank	State	NW
1	1	Iowa	10
2	1	North Dakota	10
3	1	Tennessee	10
4	1	Wyoming	10
5	2	Arizona	7.5
6	2	Colorado	7.5
7	2	New Hampshire	7.5
8	2	New York	7.5
9	2	North Carolina	7.5
10	2	Rhode Island	7.5
11	2	Texas	7.5
12	2	Utah	7.5
13	3	Alabama	5
14	3	Alaska	5
15	3	Connecticut	5
16	3	District of Columbia	5
17	3	Florida	5
18	3	Idaho	5
19	3	Indiana	5
20	3	Kentucky	5
21	3	Louisiana	5
22	3	Maryland	5
23	3	Massachusetts	5
24	3	Michigan	5
25	3	Montana	5

No.	Rank	State	NW
26	3	Nebraska	5
27	3	New Jersey	5
28	3	New Mexico	5
29	3	Ohio	5
30	3	Oregon	5
31	3	Vermont	5
32	3	Washington	5
33	3	West Virginia	5
34	3	Wisconsin	5
35	4	Arkansas	2.5
36	4	California	2.5
37	4	Delaware	2.5
38	4	Georgia	2.5
39	4	Hawaii	2.5
40	4	Illinois	2.5
41	4	Maine	2.5
42	4	Mississippi	2.5
43	4	Missouri	2.5
44	4	Nevada	2.5
45	4	Oklahoma	2.5
46	4	South Carolina	2.5
47	4	South Dakota	2.5
48	4	Virginia	2.5
49	5	Kansas	0
50	5	Minnesota	0
51	5	Pennsylvania	0

Weighted Index Ranking

No.	Rank	State	W-Index
1	1	Tennessee	10.000000
2	2	Colorado	8.888889
3	2	Iowa	8.888889
4	2	North Dakota	8.888889
5	2	Wyoming	8.888889
6	3	Arizona	7.777778
7	3	Texas	7.777778
8	3	Utah	7.777778
9	4	New Hampshire	6.666667
10	4	New York	6.666667
11	4	North Carolina	6.666667
12	4	Rhode Island	6.666667
13	4	Washington	6.666667
14	5	Arkansas	5.555555
15	5	District of Columbia	5.555555
16	5	Florida	5.555555
17	5	Indiana	5.555555
18	5	Kentucky	5.555555
19	5	Louisiana	5.555555
20	5	Maryland	5.555555
21	5	Montana	5.555555
22	5	Nebraska	5.555555
23	5	New Jersey	5.555555
24	5	New Mexico	5.555555
25	5	West Virginia	5.555555

No.	Rank	State	W-Index
26	5	Wisconsin	5.555555
27	6	Idaho	4.444445
28	6	Illinois	4.444445
29	6	Michigan	4.444445
30	6	Oregon	4.444445
31	7	Alabama	3.333333
32	7	Alaska	3.333333
33	7	California	3.333333
34	7	Connecticut	3.333333
35	7	Delaware	3.333333
36	7	Maine	3.333333
37	7	Massachusetts	3.333333
38	7	Missouri	3.333333
39	7	Nevada	3.333333
40	7	Ohio	3.333333
41	7	South Dakota	3.333333
42	7	Vermont	3.333333
43	7	Virginia	3.333333
44	8	Georgia	2.222222
45	8	Hawaii	2.222222
46	8	Mississippi	2.222222
47	8	South Carolina	2.222222
48	9	Kansas	1.111111
49	9	Oklahoma	1.111111
50	9	Pennsylvania	1.111111
51	10	Minnesota	0.000000

Top and Bottom 10

Lowest 10 E-Index		Highest 10 E-Index	
State	NW-Index	State	NW-Index
Kansas	0	Iowa	10
Minnesota	0	North Dakota	10
Pennsylvania	0	Tennessee	10
Arkansas	2.5	Wyoming	10
California	2.5	Arizona	7.5
Delaware	2.5	Colorado	7.5
Georgia	2.5	New Hampshire	7.5
Hawaii	2.5	New York	7.5
Illinois	2.5	North Carolina	7.5
Maine	2.5	Rhode Island	7.5

Figure: 1

Non-Weighted Ranking

Lowest 10 W-Index		Highest 10 W-Index	
State	W-Index	State	W-Index
Minnesota	0	Tennessee	10
Kansas	1.111111	Colorado	8.888889
Oklahoma	1.111111	Iowa	8.888889
Pennsylvania	1.111111	North Dakota	8.888889
Georgia	2.222222	Wyoming	8.888889
Hawaii	2.222222	Arizona	7.777778
Mississippi	2.222222	Texas	7.777778
South Carolina	2.222222	Utah	7.777778
Alabama	3.333333	New Hampshire	6.666667
Alaska	3.333333	New York	6.666667

Figure: 2

Weighted Ranking

Correlation: Autonomy and Count of PT

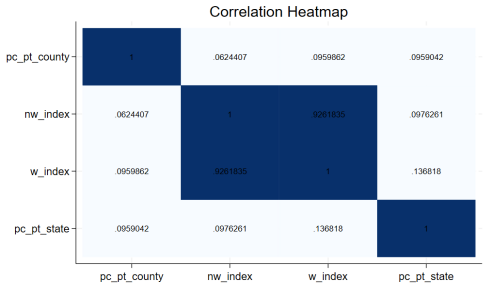


Figure: 1

Correlation Heat Map

	State Count	County Count
W Index	0.0351013*** (0.004712)	0.0000121*** (2.32e-06)
NW Index	0.0232057*** (0.0043861)	0.00000728*** (2.16e-06)

Figure: 2

Basic Reg

Further Work

- Exploring Autonomy and Labor market outcomes (wages, sorting etc.)
- Exploring Autonomy and Patient Outcomes (wait times, costs, etc).
- Explore spatial heterogeneity (urban vs rural)
- Explore spill overs and interactions with other similar health providers.

Conclusion

- PT autonomy varies widely across states.
- Weighted and non-weighted indices broadly agree on relative restrictiveness.
- Preliminary evidence shows higher autonomy is associated with greater PT availability.
- This index enables future causal work on labor markets and access for PTs.
- The index along with the consecutive studies will enable states and other policy makers to make better informed decisions.

Thank you!

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