



Medical Treatment Dynamics: A State-Level Analysis

INTRODUCTION

Medical treatment patterns have been evolving in recent years, particularly for specialty services like major surgery and physical therapy. While aggregate trends across NCCI jurisdictions appear modest, understanding jurisdictional differences is important because these differences may reflect changes in healthcare delivery and provider practices that ultimately influence medical utilization and costs.

This research brief disaggregates the results to highlight those differences and explores how meaningful shifts in time to first medical treatment and treatment duration interact with each other across jurisdictions.

KEY FINDINGS

- **Time to first medical treatment trends (Accident Year 2016 to 2023)**
 - Average time to first treatment increased, particularly for claims involving major surgery and physical therapy
 - Same-day care has declined as treatment shifted toward nonfacility settings with longer wait times
- **Treatment duration trends (Accident Year 2016 to 2023)**
 - Average treatment duration remained stable, albeit with considerable variation across jurisdictions
- **Relationship between changes in time to first treatment and treatment duration by jurisdiction**
 - No relationship across all lost-time claims
 - Positive relationship observed for certain claim cohorts, including major surgery and physical therapy claims

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TERMINOLOGY

Terms used throughout this study include:

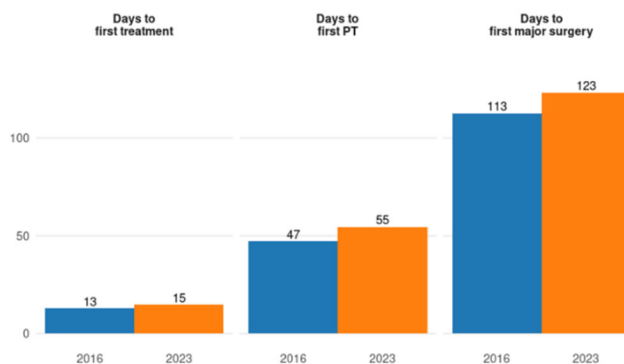
- **Accident Year (AY)**—The year in which an injury occurred.
- **ALL**—Aggregate results based on all jurisdictions included in the study. Such results are labeled as ALL.
- **Correlation**—A relationship between statistical variables that tend to vary, be associated, or occur together in a way not expected based on chance alone.
 - **Weighted Pearson correlation**—A measure of the strength and direction of a relationship between two variables, where observations are assigned different weights. In this study, jurisdictions are weighted by their AY 2023 claim counts so that states with larger claim volumes have a greater influence on the overall correlation.
 - **Spearman correlation**—A measure of the strength and direction of a relationship between two variables using the rankings instead of the actual values of the variables.
- **Facility**—Institutional setting in which medical care is provided, including hospital inpatient, hospital outpatient, and ambulatory surgery center settings.
- **Nonfacility**—Noninstitutional setting in which medical care is provided, including physician offices, independent physical therapy clinics, and other office-based settings.
- **Indemnity/Lost-time claims**—Workers compensation claims in which an injured worker misses time from work due to the injury and is eligible for wage replacement benefits, separate from medical benefits.
- **Treatment duration**—The number of days between the first and the last medical service.
- **Physical therapy (PT) claims**—This research focuses on PT claims without major surgery performed at a facility to better isolate PT-specific patterns because PT use in claims involving major surgery is often driven by the surgery itself.
- **Major surgery (MS) claims**—Claims with any major surgical procedure performed at a facility, including hospital inpatient, hospital outpatient, or ambulatory surgery center settings. Claims with major surgery performed in a physician's office do not meet this criterion.
- **Medical utilization unit**—A relative measure of total medical resources used, developed by NCCI. This measure accounts for the following medical services and commodities:
 - Physician (professional) services
 - Hospital services (both inpatient and outpatient)
 - Ambulatory surgery center services
 - Prescription drugs
 - Medical equipment
- **Time to first treatment**—The number of days between accident/injury date and the first medical service date.
- **Time to first major surgery**—The number of days between accident/injury date and the first major surgery date.
- **Time to first physical therapy**—The number of days between accident/injury date and the first physical therapy service date.

INITIAL TREATMENT IS OCCURRING LATER IN MOST JURISDICTIONS

Initial treatment marks the first step in an injured worker's recovery journey. Figure 1 shows the average number of days to get the first medical treatment, the first physical therapy (PT), and the first major surgery by AY. The average increase in time to initial treatment from 2016 to 2023 was 2 days, and specialty services saw larger increases: 8 days for first physical therapy and 10 days for first major surgery.

Refer to Appendix A for data underlying the research.

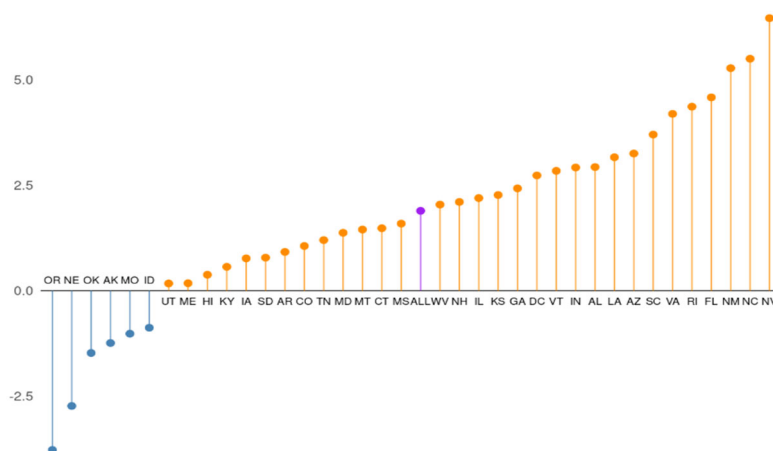
Figure 1: Average Days to First Medical Services



In Figure 2, while the average time to initial medical treatment increased by only 2 days (shown in purple for ALL), changes varied across jurisdictions, ranging from a 4-day decrease in Oregon to a 6-day increase in Nevada. The variation is influenced by many factors, such as access to care, injury mix, and treatment guidelines, among others.

Refer to Appendix B for jurisdiction-specific data.

**Figure 2: Change in Average Days to First Medical Treatment (2016–2023)
All Lost-Time Claims**



For PT claims,¹ the increase in time to first PT varies significantly. The size of the increase varies from about a 1-day increase in Louisiana to a roughly 17-day increase in West Virginia and Nevada.

¹ State-level changes in days to first treatment for PT claims are provided in Appendix B; see the data table corresponding to Figure 8.

For major surgery claims,² there are wide divergences across states, ranging from 8 days shorter time to first major surgery in Nebraska to 57 days longer time in Nevada.³

Increases in time to first medical treatment stem from two interconnected shifts:

- Declining same-day treatment: The share of claims treated on the injury date declined from 48% in 2016 to 43% in 2023, while the share treated after the injury date increased from 52% to 57%. As more claims shift to being treated after the injury date, the average time to first treatment naturally rises.
- Venue shift: When first treatment was received beyond the injury date, claimants were more likely to seek care in nonfacility settings, which typically resulted in longer wait times before receiving initial treatment. Among claims initially treated after the injury date:
 - 3% more claims were cared for in a **nonfacility** setting in AY 2023 than in AY 2016 (Figure 3).
 - In 2016, the average time to first treatment is 27 days in a **nonfacility**, 11 days longer than in a **facility**. The average time to first treatment also increased in both venues by a few days from 2016 to 2023 (Figure 4).

Figure 3: Share of Claims by AY
Among claims initially treated after the injury date
Nonfacility vs. Facility

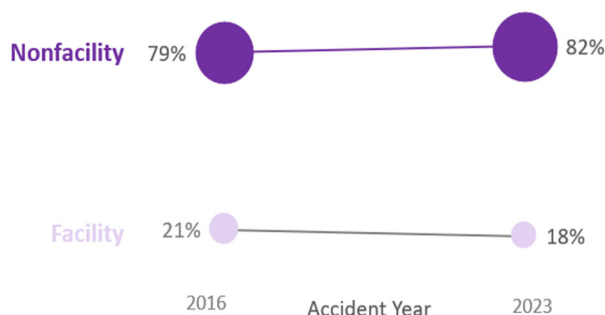
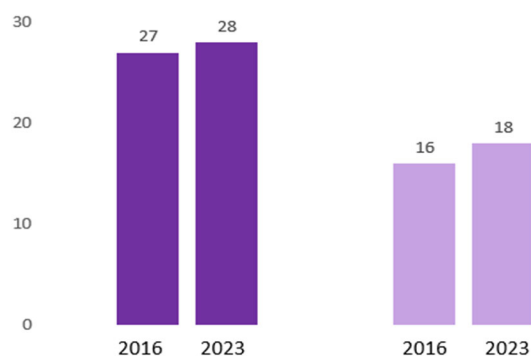
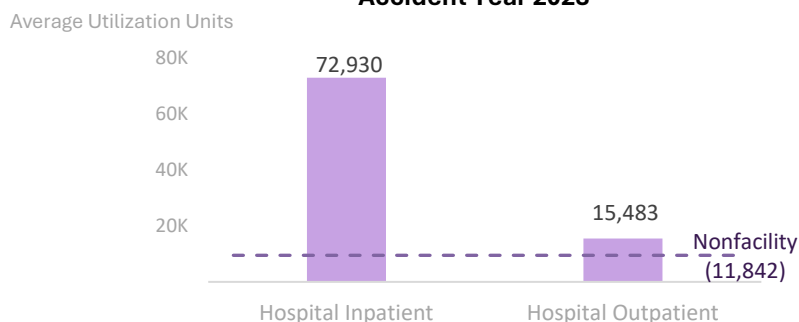


Figure 4: Average Days to First Treatment by AY
Among claims initially treated after the injury date
Nonfacility vs. Facility



The shift toward nonfacility first care affects more than the time of initial treatment—it also has implications for overall medical utilization. Utilization in nonfacility settings is generally lower than in facility settings. As shown in Figure 5, claims first treated in nonfacility settings have the lowest overall utilization units, despite later treatment initiation. By comparison, utilization is approximately six times higher for claims first treated in a hospital inpatient setting and 31% higher for those first treated in a hospital outpatient setting. Consistent with the growing share of nonfacility first care, overall medical utilization declined by 3% during the same period.

Figure 5: First Visits at Nonfacility Have Lower Overall Utilization
Accident Year 2023



² State-level changes in days to first treatment for MS claims are provided in Appendix B; see the data table corresponding to Figure 9.

³ See page 5 for additional observations and discussion regarding Nevada.

Overall, time to initial treatment has increased across most jurisdictions, reflecting fewer same-day treatments and a shift toward nonfacility settings. This trend is important because, while injured workers are waiting longer for initial care, the growing use of nonfacility providers coincides with lower overall medical utilization.

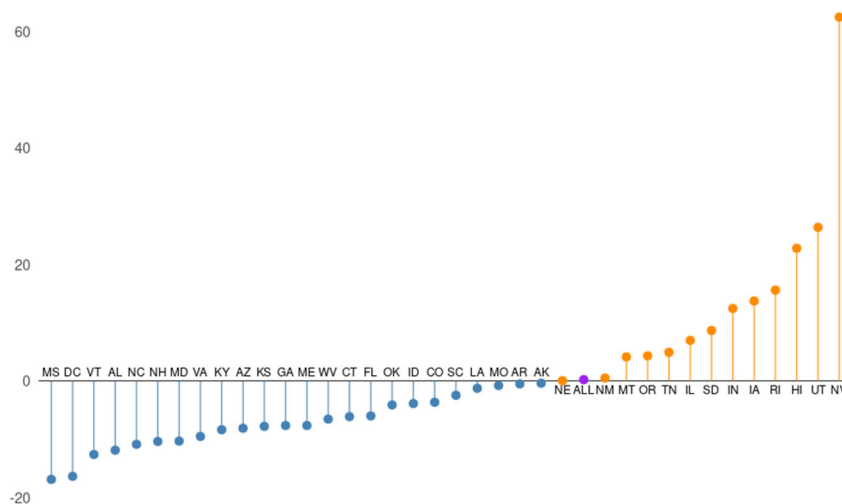
TREATMENT DURATION CHANGES DIFFERED WIDELY BY JURISDICTION

On an aggregate, countrywide basis, treatment duration was consistent between the time periods, averaging 217.8 days in 2016 and 218.0 days in 2023. Although time to first medical treatment increased modestly, treatment duration did not, suggesting that slower time to initial care did not translate into longer treatment pathways once care was initiated.

However, the flat aggregate change in treatment duration (shown in purple for ALL) obscures substantial variation across states. As Figure 6 reveals, changes vary widely—from a 17-day reduction in Mississippi to a 62-day increase in Nevada.

What is driving Nevada's increase? Our research indicates that shifts in injury mix and major surgery rates do not account for the observed change. Instead, it is possible that broader system-level pressures may be at play, such as potential access-to-care challenges. Given that Nevada experienced the largest increase in both average treatment duration and time to first medical treatment, further research into Nevada's workers compensation system and care delivery dynamics may help provide valuable insight into the mechanisms underlying these trends.

**Figure 6: Changes in Average Days of Treatment Duration (2016–2023)
All Lost-Time Claims**



All states experienced longer time to getting the first PT visit. However, after that first PT, changes in treatment duration⁴ are mixed, ranging from 32 days shorter duration in Nebraska to 59 days longer duration in Nevada.⁵

For major surgery claims, there is also wide variation across states, with 14 days shorter treatment duration⁶ in Mississippi to 61 days longer duration in Nevada.⁷

⁴ For PT claims, treatment duration after the first PT is the number of days between the first PT visit and the last medical service.

⁵ State-level changes in treatment duration for PT claims are provided in Appendix B; see the data table corresponding to Figure 8.

⁶ For major surgery claims, treatment duration after first major surgery is the number of days between the first major surgery and the last medical service.

⁷ State-level changes in treatment duration for MS claims are provided in Appendix B; see the data table corresponding to Figure 9.

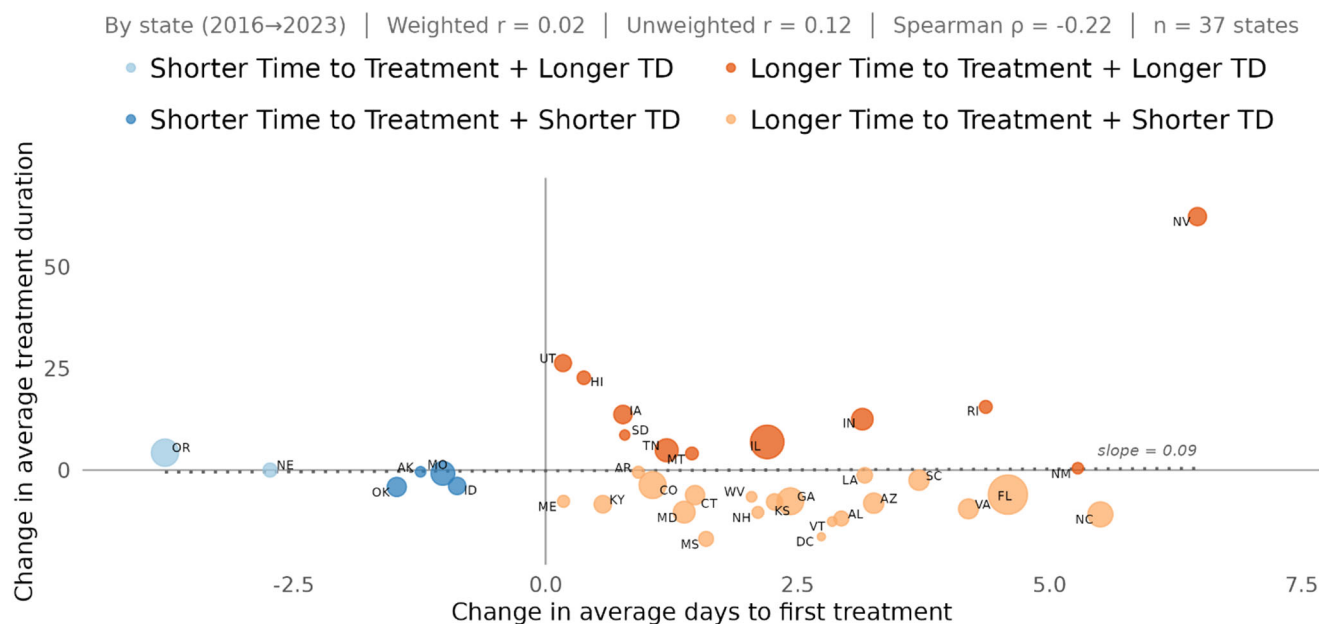
RELATIONSHIP BETWEEN TIME TO FIRST TREATMENT AND TREATMENT DURATION CHANGE

Figure 7⁸ examines the relationship between changes in time to first treatment and treatment duration for all lost-time claims. Although longer time to first medical treatment is often assumed to contribute to longer treatment duration, most jurisdictions in this research experienced the opposite pattern: increases in time to first treatment were accompanied by decreases in treatment duration. This is reflected in the light orange bubbles and suggests that, for many states, the timing of initial treatment is not strongly linked to the overall treatment duration once care begins.

In Figure 7, Δ denotes change. Jurisdictions in the upper-right quadrant (dark orange bubbles) experienced longer time to first treatment as well as longer treatment duration. Conversely, jurisdictions in the lower-left quadrant (dark blue bubbles) experienced decreases in both measures. In these states, the two metrics moved in the same direction. However, this relationship does not hold for jurisdictions represented by the light orange and light blue bubbles, where the measures moved in opposite directions. The largest concentration of states falls within the light orange cluster, indicating longer time to first treatment but shorter overall treatment duration. As discussed above, this suggests that longer time to first treatment does not necessarily translate into increase in treatment duration.

To summarize the relationship across states, we use a weighted Pearson correlation, shown in the figure as “Weighted $r = 0.02$.”⁹ This number captures how closely the two metrics move together, giving more weight to states with more claim counts, indicated by the states with larger bubbles. On a scale from 0 (which means no relationship) to 1 (which means the two metrics move perfectly together in the same direction), the weighted correlation is 0.02, meaning that there is essentially no relationship between changes in time to first treatment and changes in treatment duration across all lost-time claims.

**Figure 7: Relationship Between Δ Time to First Treatment and Δ Treatment Duration (2016–2023)
All Lost-Time Claims**



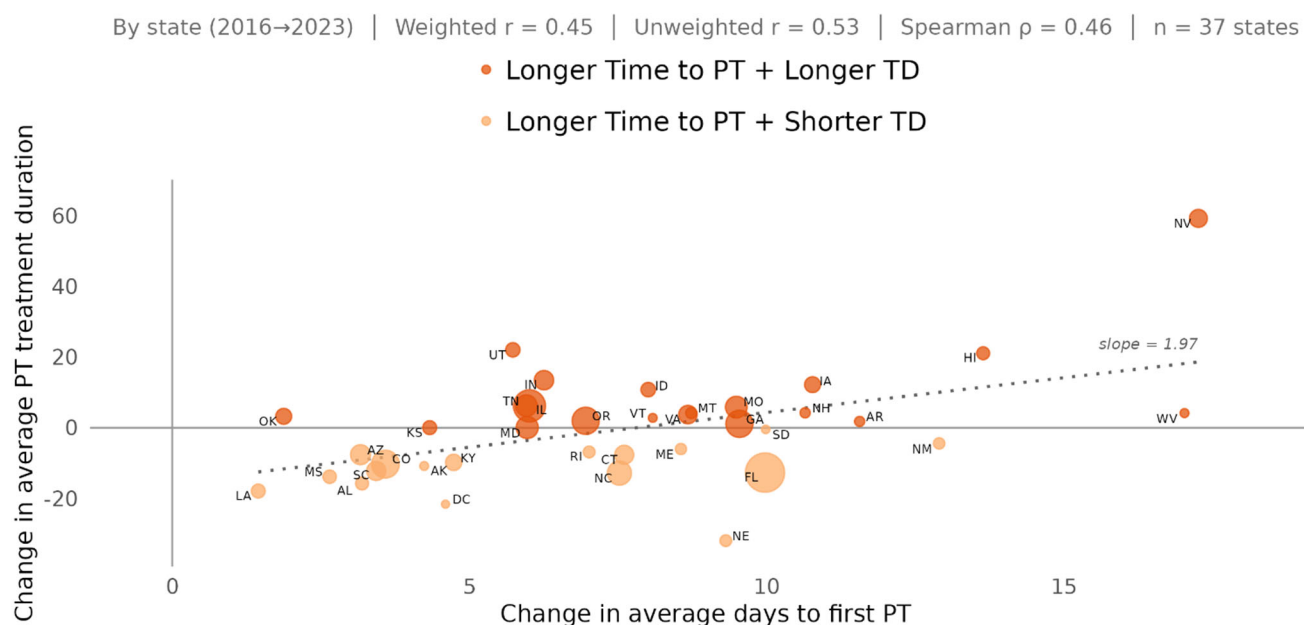
⁸ State-level data underlying Figure 7 is provided in Appendix B; see the data tables corresponding to Figures 2 and 6.

⁹ The unweighted Pearson correlation and the Spearman correlation are also shown for additional references.

The absence of a relationship between changes in time to first treatment and treatment duration for all lost-time claims obscures important differences across claim cohorts. Claims involving neither PT nor major surgery exhibit a negative correlation between the two measures. In contrast, PT and major surgery claims show a positive correlation, with jurisdictions experiencing longer time to first treatment also tending to experience longer treatment duration. These findings suggest that slower initial care may have a more direct impact on treatment duration for claims requiring more intensive or specialized treatment, while the relationship is less evident, and even reversed, for less medically intensive claims.

All states experienced longer time to the first PT service. Among them, the **dark orange** states also saw increases in treatment duration, while the **light orange** states saw decreases, as illustrated in Figure 8. Overall, the relationship is a positive 0.45, meaning the metrics generally move in the same direction. The dotted line represents a fitted weighted linear regression, which provides another way to assess the association between the two metrics. The slope of this line is roughly 2, which reflects the direction and magnitude of the relationship. In practical terms, for every additional day to first PT, total treatment duration increases by two days.

Figure 8: Relationship Between Δ Time to First Treatment and Δ Treatment Duration (2016–2023) Physical Therapy (PT) Claims

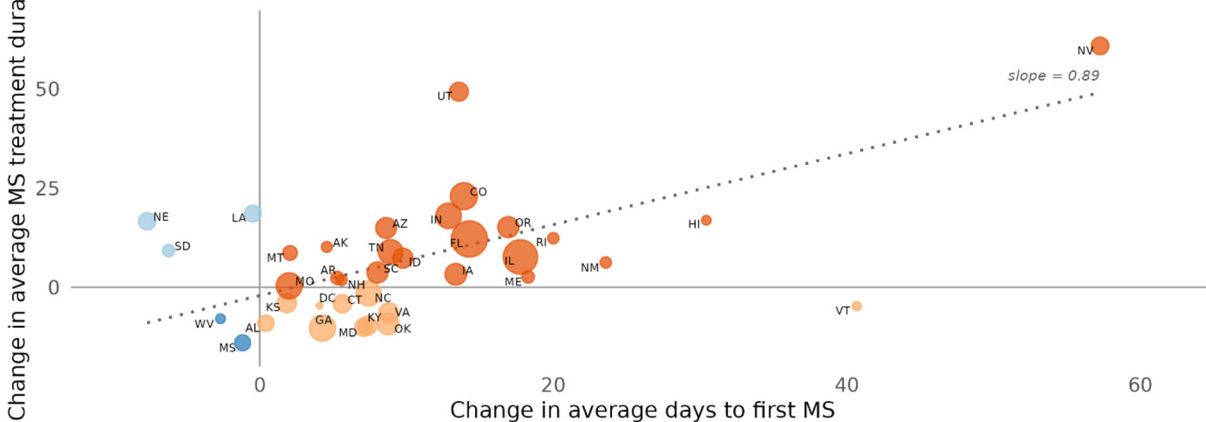


For major surgery claims illustrated in Figure 9, there is a relatively strong relationship between the two metrics, with a weighted correlation of 0.60. The **dark orange** states saw increases in both the average days to first major surgery and treatment duration. Among this group, Nevada stands out in the upper right-hand corner, well apart from the other states.

**Figure 9: Relationship Between Δ Time to First Treatment and Δ Treatment Duration (2016–2023)
Major Surgery (MS) Claims**

By state (2016→2023) | Weighted $r = 0.60$ | Unweighted $r = 0.51$ | Spearman $\rho = 0.37$ | $n = 37$ states

- Shorter Time to Surgery + Longer TD
- Shorter Time to Surgery + Shorter TD
- Longer Time to Surgery + Longer TD
- Longer Time to Surgery + Shorter TD



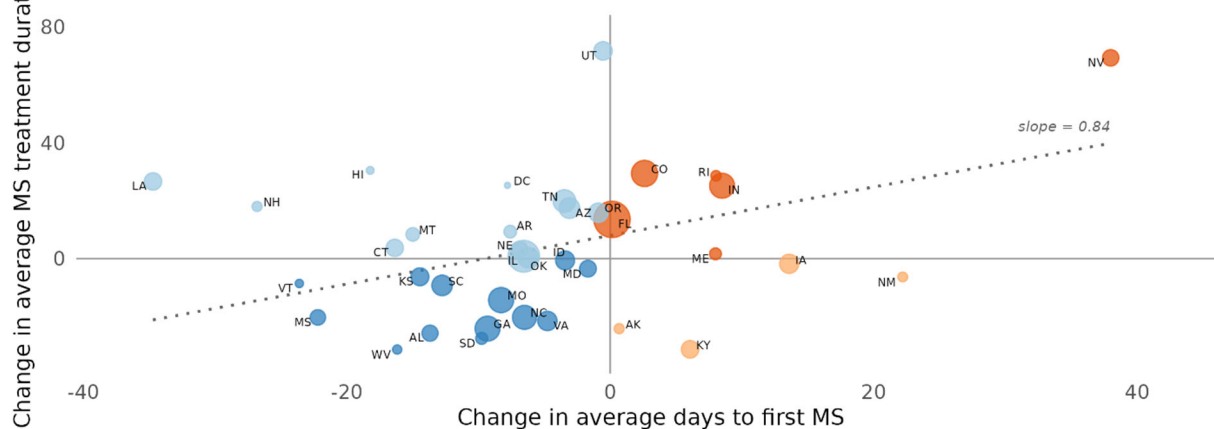
Roughly three out of four major surgery claims involve one major surgery, while one out of four involves multiple surgeries. Claims with multiple surgeries tend to be more severe. To better understand these differences, we break major surgery claims into two cohorts. For single major surgery claims, the relationship closely mirrors the result for all major surgery claims, which is expected, given that most major surgery claims involve one major surgery.

The relationship for multiple major surgery claims looks very different, as illustrated in Figure 10. There is a moderate weighted correlation of 0.40. There are fewer states with a longer time and a lot more states with a shorter time to the first major surgery. Both light blue and dark blue states indicate a shorter time to the first major surgery. However, only the dark blue states also experienced a decrease in treatment duration.

**Figure 10: Relationship Between Δ Time to First Treatment and Δ Treatment Duration (2016–2023)
Multiple Major Surgery (MS) Claims**

By state (2016→2023) | Weighted $r = 0.40$ | Unweighted $r = 0.29$ | Spearman $\rho = 0.20$ | $n = 37$ states

- Shorter Time to Surgery + Longer TD
- Longer Time to Surgery + Longer TD
- Shorter Time to Surgery + Shorter TD
- Longer Time to Surgery + Shorter TD



CLOSING REMARKS

Medical treatment patterns for workers compensation claims in NCCI jurisdictions have evolved in recent years. Across most jurisdictions, injured workers experienced longer time to receiving initial medical treatment, particularly for specialty services such as major surgery and physical therapy.

Despite these increases in time to first treatment, average treatment duration remained largely unchanged for lost-time claims overall. This stability, however, masks considerable variation across jurisdictions, with most states experiencing shorter treatment durations and others seeing increases. Nevada stands out with a substantial rise in treatment duration.

This research finds no meaningful relationship between changes in time to first treatment and treatment duration for all lost-time claims. However, we observe a positive correlation for major surgery and physical therapy claims, where the two metrics tend to move in the same direction, suggesting that timing to receiving the first specialized care may affect the overall length of treatment.

Injured workers are increasingly receiving their first medical care after the injury date and are more likely to begin treatment in nonfacility settings, which are associated with lower overall utilization. Together, these patterns may present opportunities to improve outcomes. Directing initial care toward nonfacility settings when appropriate, while ensuring timely access to specialty services when needed, may help reduce medical utilization and support effective treatment and recovery for the injured workers.

ACKNOWLEDGMENTS

I would like to thank my team member Kirk Bitu for his contributions throughout this study. Special thanks to Raji Chadarevian for his insights and advice to enhance the depth of this research.

APPENDIX A

DATA

Data for this study is sourced from NCCI's Medical Data Call (MDC).

We used MDC experience reported to NCCI at the beginning of April 2026 for:

- Medical services provided between January 1, 2016, and September 30, 2025, for Accident Years 2016 to 2023
 - Claims are lost-time/indemnity claims; medical-only claims are excluded
 - Each claim contains two years of service history after the accident/injury date
 - Accident Year 2023 is defined as October 1, 2022, through September 30, 2023
- The 37 jurisdictions: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV

Jurisdiction-specific results are based on the applicable jurisdiction. Data is used with permission.

APPENDIX B

DATA TABLES

FIGURE 2: AVERAGE DAYS TO FIRST MEDICAL TREATMENT

STATE	2016	2023	CHANGE
ALL	12.8	14.7	1.9
AK	13.7	12.5	-1.2
AL	9.9	12.9	2.9
AR	10.4	11.3	0.9
AZ	9.4	12.7	3.3
CO	9.2	10.2	1.1
CT	17.1	18.5	1.5
DC	16.9	19.6	2.7
FL	12.1	16.7	4.6
GA	13.9	16.4	2.4
HI	10.0	10.4	0.4
IA	14.3	15.1	0.8
ID	10.6	9.8	-0.9
IL	13.7	15.9	2.2
IN	12.2	15.1	2.9
KS	16.1	18.3	2.3
KY	14.2	14.8	0.6
LA	17.1	20.3	3.2
MD	12.5	13.9	1.4
ME	11.4	11.6	0.2
MO	17.9	16.8	-1.0
MS	13.8	15.4	1.6
MT	11.9	13.4	1.5
NC	9.4	14.9	5.5
NE	18.1	15.4	-2.7
NH	8.2	10.4	2.1
NM	12.4	17.7	5.3
NV	8.5	14.9	6.5
OK	21.0	19.6	-1.5
OR	14.4	10.6	-3.8
RI	7.4	11.8	4.4
SC	16.1	19.8	3.7
SD	10.0	10.8	0.8
TN	12.0	13.2	1.2
UT	8.8	9.0	0.2
VA	8.1	12.3	4.2
VT	9.7	12.5	2.8
WV	7.4	9.4	2.0

FIGURE 6: AVERAGE DAYS OF TREATMENT DURATION

STATE	2016	2023	CHANGE
ALL	217.8	218.0	0.2
AK	181.1	180.7	-0.4
AL	219.0	207.1	-11.9
AR	194.7	194.2	-0.5
AZ	204.5	196.4	-8.1
CO	230.9	227.3	-3.7
CT	259.1	253.0	-6.1
DC	207.1	190.7	-16.4
FL	225.4	219.4	-6.0
GA	239.2	231.5	-7.7
HI	189.8	212.5	22.8
IA	212.8	226.5	13.7
ID	241.6	237.7	-3.9
IL	206.8	213.8	7.0
IN	197.0	209.4	12.4
KS	226.3	218.5	-7.8
KY	226.7	218.3	-8.4
LA	274.5	273.2	-1.3
MD	187.4	177.1	-10.3
ME	215.9	208.2	-7.7
MO	192.9	192.1	-0.8
MS	243.1	226.2	-16.9
MT	258.5	262.6	4.1
NC	235.7	224.9	-10.9
NE	242.7	242.7	0.0
NH	209.5	199.2	-10.4
NM	252.2	252.6	0.5
NV	200.0	262.4	62.4
OK	225.7	221.6	-4.1
OR	173.5	177.8	4.3
RI	177.7	193.3	15.6
SC	263.1	260.6	-2.5
SD	251.9	260.6	8.7
TN	218.2	223.1	4.9
UT	159.5	185.9	26.4
VA	230.6	221.1	-9.5
VT	245.7	233.1	-12.6
WV	167.1	160.5	-6.6

APPENDIX B (cont'd)RELATIONSHIP BETWEEN Δ TIME TO FIRST TREATMENT AND Δ TREATMENT DURATION (2016–2023)

FIGURE 8: PHYSICAL THERAPY CLAIMS

FIGURE 9: MAJOR SURGERY (MS) CLAIMS

FIGURE 10: MULTIPLE MS CLAIMS

STATE	Δ DAYS TO 1ST TREATMENT	Δ TREATMENT DURATION	Δ DAYS TO 1ST TREATMENT	Δ TREATMENT DURATION	Δ DAYS TO 1ST TREATMENT	Δ TREATMENT DURATION
AK	4.2	-10.8	4.6	10.2	0.7	-24.2
AL	3.2	-15.8	0.4	-9.1	-13.7	-25.7
AR	11.6	1.8	5.3	2.4	-7.6	9.3
AZ	3.2	-7.6	8.6	14.9	-3.1	17.5
CO	3.6	-10.3	13.9	23.0	2.6	29.5
CT	7.6	-7.6	5.6	-4.2	-16.4	3.7
DC	4.6	-21.6	4.1	-4.6	-7.8	25.3
FL	10.0	-12.7	14.3	12.2	0.1	13.6
GA	9.5	1.1	4.3	-10.3	-9.3	-24.2
HI	13.6	21.1	30.4	16.9	-18.2	30.5
IA	10.8	12.2	13.4	3.3	13.6	-1.8
ID	8.0	10.8	9.8	7.3	-3.4	-0.6
IL	6.0	6.2	17.8	7.6	-6.6	0.8
IN	6.3	13.5	12.9	18.0	8.5	25.2
KS	4.3	0.0	1.8	-4.0	-14.4	-6.2
KY	4.7	-9.8	7.3	-9.7	6.1	-31.3
LA	1.4	-17.9	-0.5	18.6	-34.7	26.7
MD	6.0	0.1	7.1	-10.1	-1.7	-3.4
ME	8.6	-6.0	18.3	2.6	8.0	1.7
MO	9.5	5.9	2.0	0.4	-8.3	-14.3
MS	2.6	-13.9	-1.2	-14.0	-22.2	-20.3
MT	8.7	4.2	2.1	8.6	-15.0	8.4
NC	7.5	-12.8	7.4	-1.5	-6.5	-20.3
NE	9.3	-32.0	-7.7	16.6	-6.9	3.1
NH	10.6	4.2	5.6	1.8	-26.8	18.0
NM	12.9	-4.4	23.6	6.2	22.2	-6.3
NV	17.3	59.3	57.3	60.8	38.0	69.4
OK	1.9	3.3	8.7	-9.3	-6.2	0.4
OR	7.0	2.0	16.9	15.1	-0.9	15.9
RI	7.0	-6.8	20.0	12.4	8.0	28.6
SC	3.4	-12.2	8.0	3.7	-12.8	-9.2
SD	10.0	-0.4	-6.2	9.2	-9.8	-27.5
TN	6.0	6.3	8.9	8.9	-3.5	19.9
UT	5.7	22.1	13.6	49.3	-0.5	71.8
VA	8.7	3.7	8.8	-6.5	-4.8	-21.5
VT	8.1	2.8	40.7	-4.7	-23.6	-8.6
WV	17.0	4.2	-2.7	-7.9	-16.2	-31.4