


COVID-19

Cost Impacts of Medical Care Delays in the California Workers' Compensation System



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Executive Summary

The COVID-19 pandemic and resultant shelter-in-place orders brought substantial disruption to health care access nationally and in California. Between March and April 2020, health care facilities in California suspended all non-urgent medical care to preserve resources for the potential surge of COVID-19 patients. As a result of this system shock, medical care utilization declined steeply until May, when most medical care facilities started to resume normal operations. There is limited published information on the impact of the COVID-19 pandemic on medical care delays in the California workers' compensation system, and even less on how these delays in medical treatments could affect claims in the long term.

In this study, the WCIRB evaluated the long-term cost impacts of medical treatment delays on claims in the California workers' compensation system based on historical claim information. The results provide valuable insights into the adverse consequences of delayed medical care utilization in general, as well as the potential impact of the medical care delays resulting from the COVID-19 pandemic.

The key findings include:

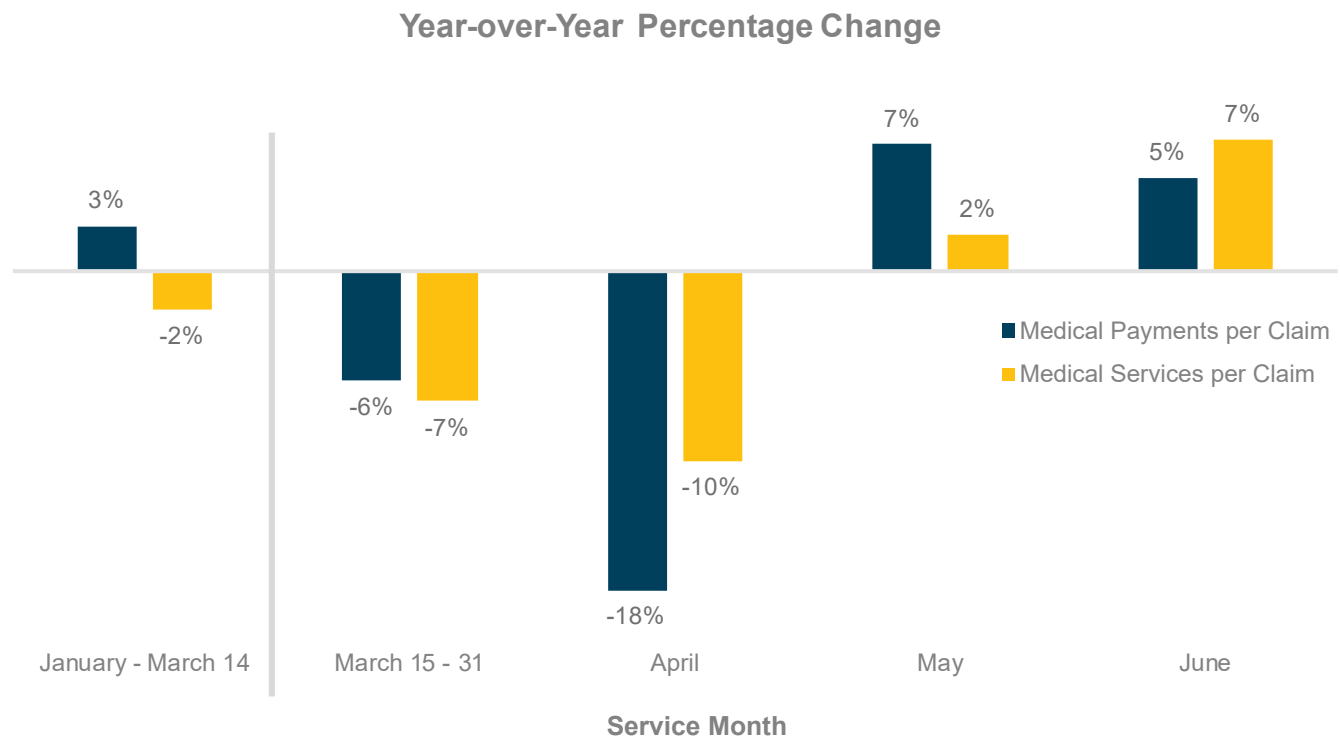
- Claims with soft tissue injuries that had a month delay before receiving the first medical service had, on average, significantly higher indemnity and medical costs than similar claims without medical care delays. The cost differential persists for years after the injury.
- Soft tissue claims with delayed care were more likely to stay open longer, have a longer duration of temporary disability and involve permanent disability.
- The long-term cost implications of delayed medical care were similar for claims with other leading medical diagnoses in the workers' compensation system, such as low back pain, dislocation and sprain and fracture.
- Soft tissue claims with delays in the first physical therapy treatment also had significantly higher medical and indemnity costs years after the injury compared to similar claims with no delays in physical therapy.

Background

Since March 19, 2020, California was under statewide shelter-in-place orders, resulting in a temporary suspension of all non-urgent medical services to allow health care facilities to prepare for a potential surge of COVID-19 patients and to also limit hospital infections for non-COVID-19 patients. As a result, there was abrupt and substantial disruption to health care access. While some services were able to go virtual via telehealth, most services were suspended until May, when health care providers began to resume normal operations in California.¹

In the California workers' compensation system, use of medical services per claim declined sharply in late March and April 2020 compared to the same time period in 2019. Figure 1 compares the medical payments and services per claim for periods in 2020 to the same period in 2019, based on the WCIRB medical transaction data through August 2020. Despite increased use of telehealth, the overall decline in service utilization led to a significant drop in claim activity and in average medical paid per claim. Despite some rebound in medical care utilization after April in the workers' compensation system at the time of this study (October 2020), there is clear evidence of delays in medical treatments for injured workers during the early weeks of the pandemic.

Figure 1. Impact of COVID-19 Pandemic on Average Medical Payments and Service Utilization²

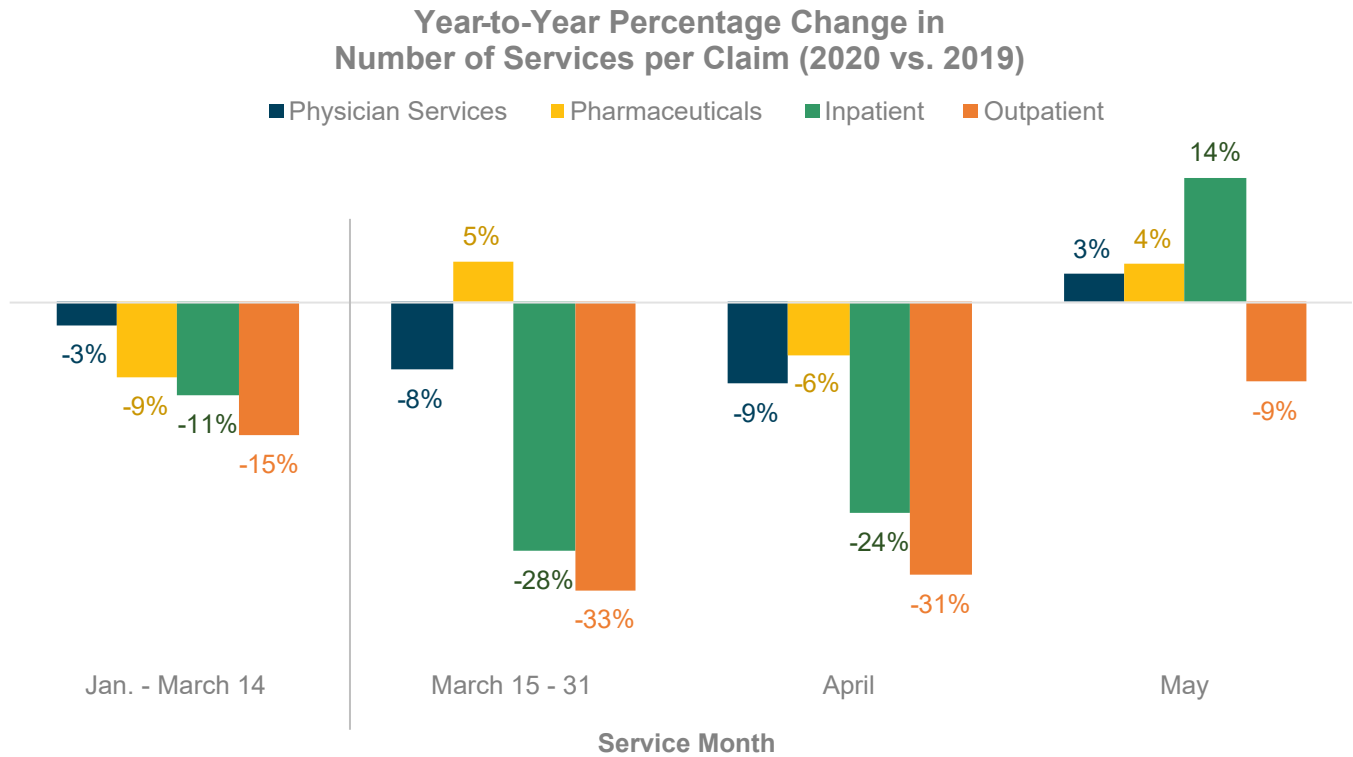


¹ California Department of Public Health. <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/ResumingCalifornia%E2%80%99sDeferredandPreventiveHealthCare.aspx>

² WCIRB medical transaction data submitted monthly by a subset of insurers through August 2020.

Figure 2. Impact of COVID-19 Pandemic on the Leading Types of Medical Services³

a. Average Service Utilization

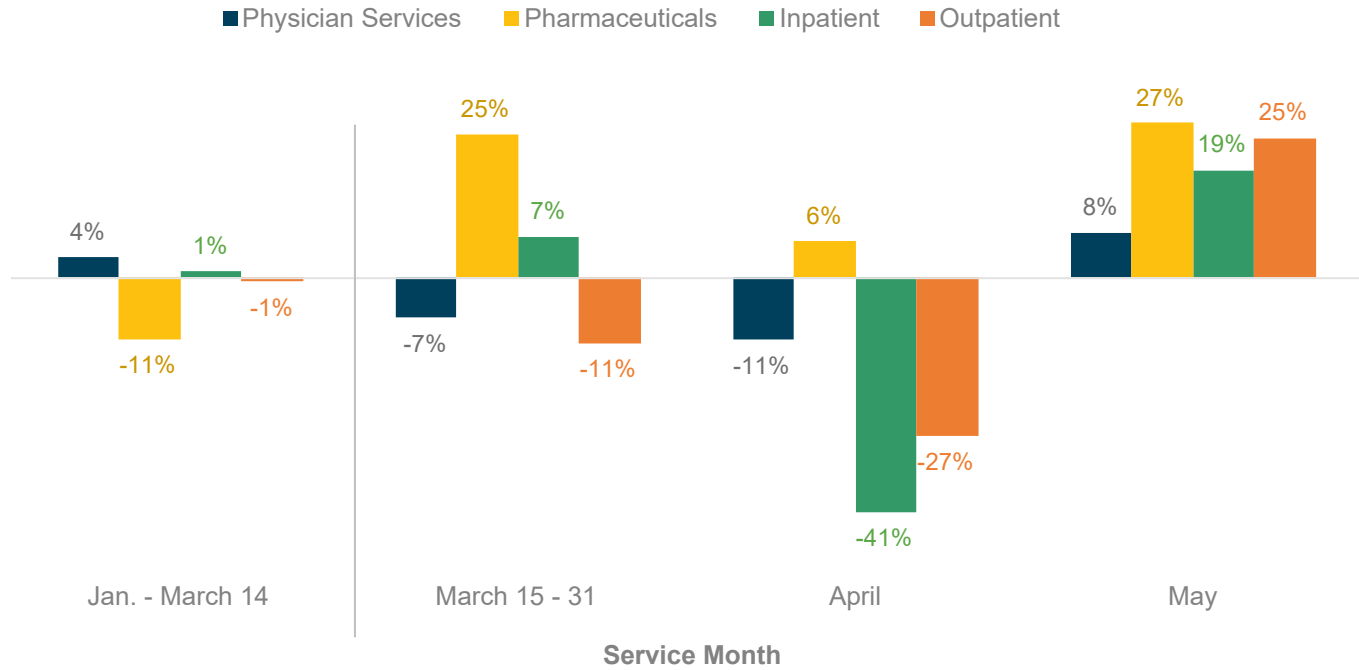


The pandemic has not affected all types of services equally. Most services provided in a hospital setting, such as inpatient care and some outpatient care, were suspended and thus utilized significantly less during the early weeks of the pandemic (Figure 2a). Physician services, such as office visits and physical therapies, were less affected partly due to the availability of telehealth. Pharmaceutical use, conversely, started to rise after the pandemic, which drove the average drug payments in the system higher than the pre-pandemic level. Most of the increase came from non-opioid pain medications. At the time of this study, utilization and payments per claim for most leading types of medical services rebounded in May. Medical payments per claim, in particular, were significantly higher in May 2020 compared to May 2019 (Figure 2b).

³ WCIRB medical transaction data submitted monthly by a subset of insurers through August 2020.

b. Average Medical Payments

Year-to-Year Percentage Change in Average Payments per Claim (2020 vs. 2019)



Delays in medical treatments for injured workers as a result of the COVID-19 pandemic may well have long-term cost implications. Because of the unique trigger for the recent medical care slowdowns, the true impact of these pandemic related-delays can only be comprehensively evaluated using post-COVID-19 data. However, historical delays in medical treatments in the workers’ compensation system may provide helpful insights into the future cost implications of the disrupted care that has occurred during the COVID-19 pandemic.

Medical care delays in the workers’ compensation system can happen for many reasons, such as less severe injuries, late reporting of claims, delays in the claims administrative processes, and doctor’s availability. Limited information is available on the cost impacts of medical care delays on workers’ compensation claims. Several published studies focusing on disability duration showed that shorter lag times between injury and seeking medical care were associated with shorter disability duration for claims with work-related musculoskeletal disorders.⁴ Also, two published research studies showed the benefits of early physical therapy (PT) on reduced opioid use and other outcomes for soft tissue claims.⁵

In this study, we will address the following research questions:

- How do delays in the first medical service and the first physical therapy treatment affect long-term medical and indemnity costs?
- How do these medical care delays affect claim closure and duration of temporary disability?
- How do the cost impacts of historical treatment delays relate to the recent delays that have occurred during the COVID-19 pandemic?

⁴ Besen, Elyssa et al. *Lag Times in the Work Disability Process: Differences Across Diagnoses in the Length of Disability Following Work-related Injury*. Work. Vol. 60.4 (2018): 635 – 648. Besen, Elyssa et al. *Lag Times in Reporting Injuries, Receiving Medical Care, and Missing Work: Associations With the Length of Work Disability in Occupational Back Injuries*. Journal of occupational and environmental medicine vol. 58,1 (2016): 53-60.

⁵ Zhang J., Yu Y. and Sabiniano E. (2020). *Physical Medicine Treatments and Their Impact on Opioid Use and Lost Time in California Workers’ Compensation*. WCIRB. Wang D., Muller K. and Lea R. (2020). *The Timing of Physical Therapy for Low Back Pain: Does It Matter in Workers’ Comp?* Workers Compensation Research Institute (WCRI).

Analysis Approach

This study analyzed historical indemnity claims with work-related injuries occurring between 2013 and 2017 in the California workers' compensation system based on the WCIRB's Unit Statistical Report (USR) and medical transaction data. Medical care delays were defined differently by injury types, as acute injuries are more likely to require immediate medical attention than chronic injuries. Therefore, for the purpose of this study, we created several cohorts of workers' compensation claims with each cohort of claims corresponding to a leading medical diagnosis⁶ in the system. The leading types of medical diagnoses encompass both acute injuries (fracture, dislocation and sprain, minor wounds) and chronic injuries (soft tissue injury and low back pain). To ensure comparable injury severity in each claim cohort, we limited our analysis of fractures to upper and lower extremities and of soft tissue injuries to shoulder, neck, knee and back.⁷

Each claim cohort by principal diagnosis was segregated into early and delayed groups based on a threshold of time from the date of injury to the date of first medical service (Table 1).⁸ Chronic injuries were assigned a slightly higher delay threshold (7 days) than the acute injuries studied (3 days). A subset of soft tissue claims that received PT within one year of the injury was also analyzed for the impact of delayed PT on long-term claim costs. Delayed PT was defined as receiving the first PT treatment more than 30 days after the first medical service. For each diagnostic claim cohort, cumulative trauma (CT) claims were excluded because these claims tend to be reported late and involve prolonged exposure which makes measuring treatment delays difficult. CT claims are also more likely to involve litigation and have other distinctive characteristics that affect claim costs.

Table 1. Identification of Early and Delayed Groups by Medical Diagnoses

Leading Medical Diagnoses	Share of Indemnity Claims	Threshold for Early and Delayed Claim Groups (Time from Injury to First Medical Service)
Dislocation and Sprain	23%	3 days
Minor Wounds	6%	3 days
Fracture ⁹	1%	3 days
Soft Tissue Injury ¹⁰	11%	7 days
Low Back Pain ¹¹	1%	7 days
Soft Tissue Injury and Physical Therapy	7%	First physical therapy within 30 days of the first medical service

⁶ The medical diagnosis for each claim represents the early primary diagnosis for the claim based on the International Classification of Diseases (ICD) codes reported to the WCIRB's medical transaction data within the 90 days of the first medical service.

⁷ Fracture claims that had the first medical service on the same day as the injury were excluded from the fracture claim cohort as those claims tend to be more severe. The exclusion aims to control for injury severity.

⁸ The threshold for each medical diagnosis was determined by the distribution of time from the injury to the first medical service for all indemnity claims of the same diagnosis. Cumulative trauma claims were excluded from the distribution.

⁹ Fracture claims with first medical service on the same day as the injury were excluded.

¹⁰ Soft tissue injuries were restricted to shoulder, neck, knee and back body parts only.

¹¹ Low back pain is a subset of soft tissue injuries. We analyzed them separately from soft tissue injuries because low back pain tends to be affected more heavily than other soft tissue injuries by the delayed medical care.

Claim costs and characteristics were measured based on incurred medical and indemnity benefits, claim closure rate, and temporary disability (TD) duration at different Unit Statistical Report levels.¹² The analysis of TD duration focused on closed indemnity claims involving only temporary disability (TD-only claims), while other outcomes were based on all indemnity claims.¹³

Many factors can influence the timing of receiving medical care. For example, workers who live in an urban area may receive care more quickly after the injury than workers with similar injuries who live in rural areas. Other factors in the claim reporting and claims administrative processes can also impact the time to receive care. Therefore, within each diagnosis claim cohort, we applied statistical adjustments and matched early and delayed groups of claims on a number of demographics (age, gender, year of injury, industry sector, region of receiving care) and injury characteristics (use of opioids/pain medications, surgery, body parts and type of pain, with the latter two based on the International Classification of Diseases (ICD) information) that are available in the WCIRB data.¹⁴ The goal of the matching process was to attempt to isolate the impacts of medical care delays from other confounding factors that we have information on. In this way, we built two groups of claims that are similar in almost all aspects except for when they had the first medical care. Propensity score matching was performed for each diagnostic claim cohort between the early and delayed groups and for the subset of closed claims that had only temporary disability¹⁵ in each claim cohort.¹⁶

¹² Unit Statistical Reports are submitted for each insurance policy to the WCIRB in annual intervals. The first Unit Statistical Report level includes information on losses valued at 18 months from policy inception. Each subsequent report level through the tenth report level reflects a valuation of losses 12 months later than the prior report level.

¹³ Temporary disability duration was calculated as incurred indemnity less vocational rehabilitation benefits divided by weekly TD benefits and then converted from the number of weeks to days.

¹⁴ Type of pain was identified using the ICD codes that represent chronic and/or acute pain published by the CDC. Injured workers with any surgery were identified as having a major surgery prior to the first medical treatment. Industrial sector was determined from the North American Industry Classification System (NAICS) information in the WCIRB USR data, in which 2017 was the latest accident year available at the time of the study.

¹⁵ See "Conditions and Limitations" for more information on factors that could influence the timing of receiving care but are not available in the WCIRB data.

¹⁶ Propensity score matching was performed using 1:1 ratio (early to delayed group) and nearest neighbor matching method. Our matching used the demographic and injury characteristics variables described in the Analysis Approach section.

Findings

Impacts of Delayed Medical Care on Medical and Indemnity Costs

Overall, claims in the delayed group created by using the predetermined delay time threshold have a longer time from injury to the first medical service than the early group. Table 2 shows the difference in median time to first medical service between the two groups for each diagnosis after controlling for demographic and injury characteristics. Soft tissue claims in the delayed group, for example, typically had a 30-day longer wait time to first medical service than the early group. The delays in initial medical treatment and in first PT treatment among these historical indemnity claims of different diagnoses resemble the duration of the overall medical care slowdowns indicated in the WCIRB medical data during the early weeks of the pandemic. While the COVID-19 pandemic not only delayed the first medical treatment but also interrupted on-going treatments, our study of delayed first medical treatment can provide insights into the potential future cost impacts of delayed care due to the COVID-19 pandemic.

Table 2. Median Time (Days) to First Medical Service for Early and Delayed Groups of Claims of Similar Characteristics

Leading Medical Diagnoses	All Matched Claims (excl. Cumulative Trauma Claims)	Early Group	Delayed Group	Medical Care Delays (Difference in Median Time)
Dislocation and Sprain	4	0	14	14
Minor Wounds	4	0	9	9
Fracture ¹⁷	4	1	11	10
Soft Tissue Injury ¹⁸	8	1	31	30
Low Back Pain	8	1	42	41
Physical Therapy for Soft Tissue Injuries	31	12	67	55

Soft tissue claims in the delayed group had significantly higher incurred medical benefits at each report level than similar claims in the early group (Figure 3a). Specifically, at first report level (valued at 18 months after policy inception), median incurred medical benefits in the delayed group are 7% higher than in the early group. The cost differential grew to 32% by the fourth report level (valued at 54 months after policy inception). The sharp contrast in the incurred medical costs between the two groups indicates the impact of delayed medical care on the expectations for higher medical costs in the long term.

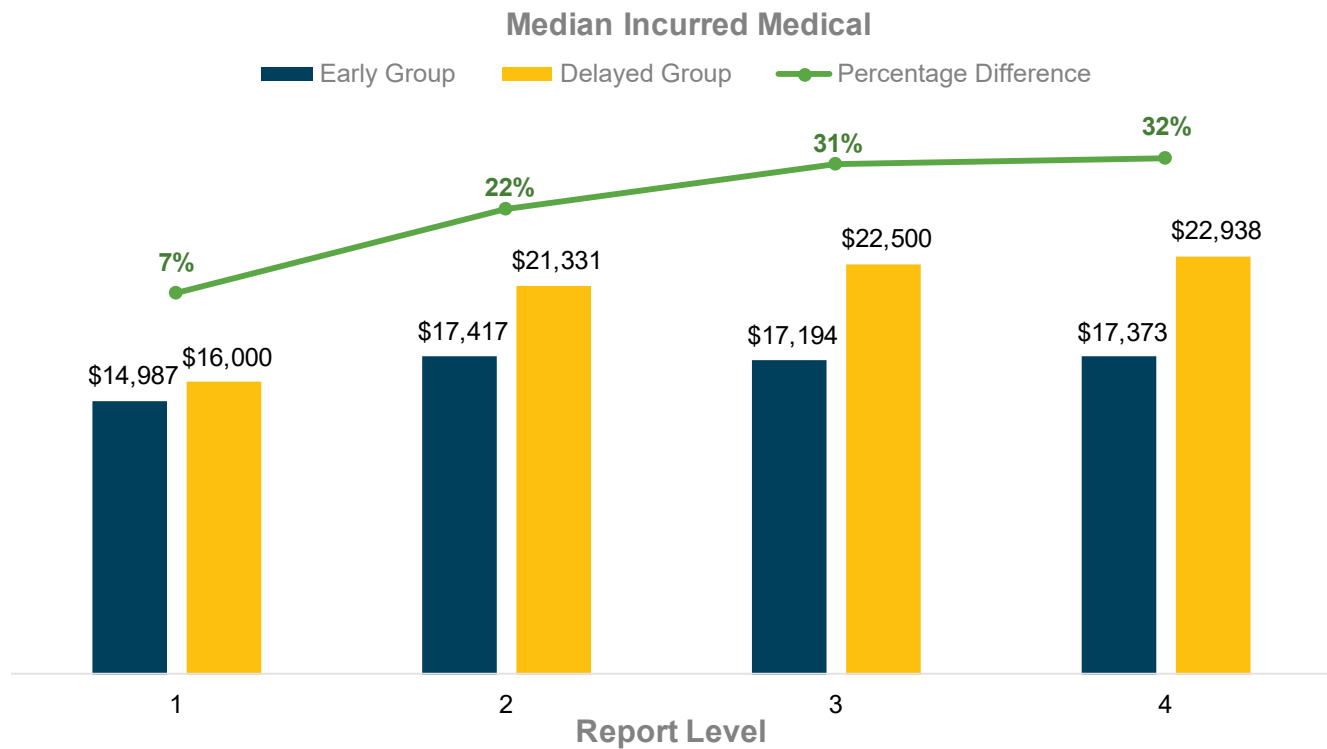
Similarly, claims with other leading diagnoses in the delayed group had higher incurred medical costs at each report level. The cost differential is most pronounced at the fourth report level, which is the latest report level reviewed in this study and is shown in Figure 3b. Given that the magnitude of the difference increases with the report level, the differentials will likely be even higher at later report levels. Claims involving low back pain had the highest difference at the fourth report level – the incurred medical costs for the delayed group are 2.5 times higher than for the early group. Other diagnostic groups also had at least 50% higher incurred medical costs for the delayed group.

¹⁷ Fracture claims with first medical service on the same day as the injury were excluded.

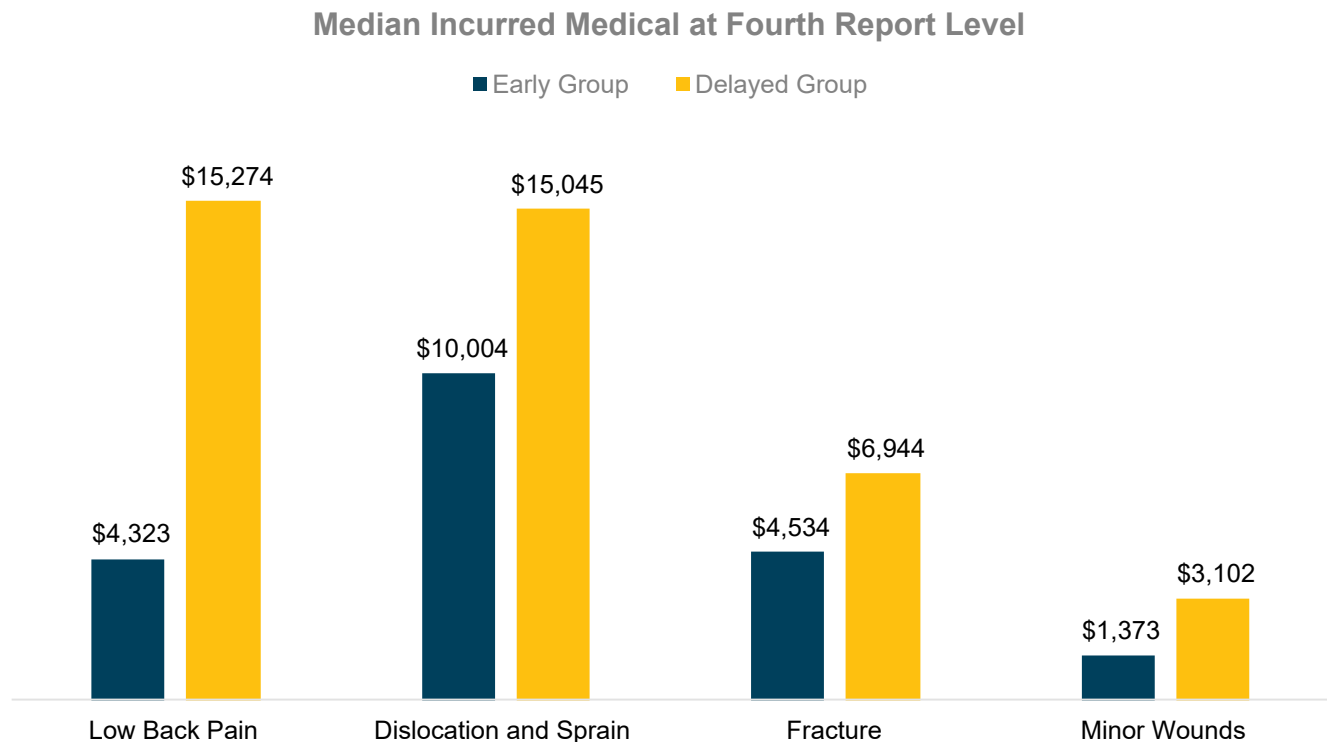
¹⁸ Soft tissue injuries were restricted to shoulder, neck, knee and back body parts only.

Figure 3. Impact of Delayed First Medical Service on Long-Term Incurred Medical Benefits

a. Soft Tissue Claims by Report Levels



b. Claims of Other Leading Diagnoses at Fourth Report Level (Valued at 54 Months after Policy Inception)¹⁹



¹⁹ The incurred medical benefits at each report level for the claims in Figure 3b are in Appendix Table A1.

We observed similar patterns for paid medical benefits on these cohorts of claims (Appendix: Table A3). For example, while the delayed group involving soft tissue injuries incurred lower medical payments at the first report level due to the slower initiation of medical treatments, they had higher medical payments starting at the second report level, consistent with the trajectory of the difference in the incurred medical. The higher median medical payments were partly due to significantly more costly outpatient care and pain medications (Table 3).

Table 3. Median Medical Payments per Claim for Soft Tissue Claims at Fourth Report Level

Leading Types of Medical Services for Soft Tissue Claims (~80% of Total Medical Paid)	Early Group	Delayed Group	Percentage Difference Comparing Delayed Group to Early Group
Outpatient Care	\$1,560	\$2,351	51%
Pharmaceuticals	\$248	\$324	31%
Inpatient Care	\$21,152	\$21,526	2%
Physician Services	\$5,079	\$4,827	-5%

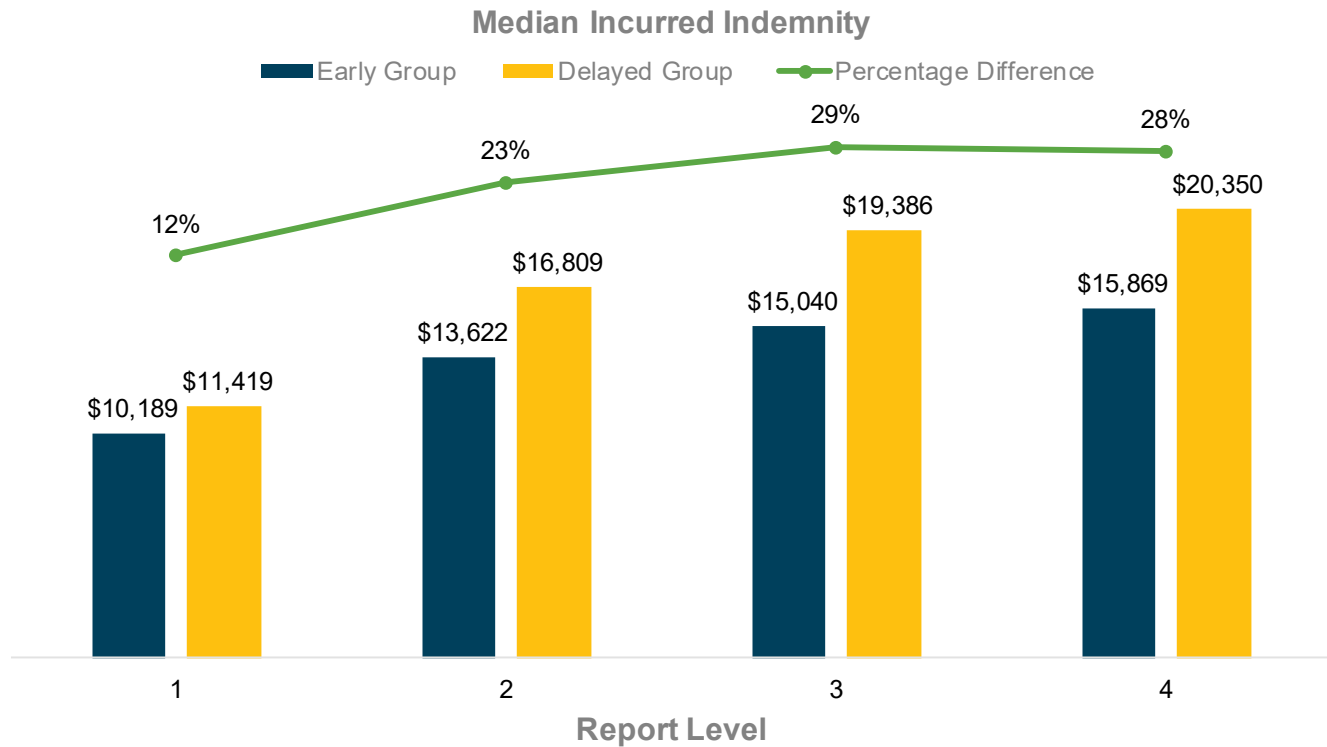
As shown in Figure 4a, median incurred indemnity benefits for soft tissue claims was also higher in the delayed group at each report level. The cost difference of 12% at the first report level increased to 28% by the fourth report level, indicative of the impact of delayed first medical service on the expectations for a longer temporary disability duration in the long term. We also found that soft tissue claims in the delayed group were more likely to involve permanent disability than those in the early group (Figure 5).

Similar patterns of higher incurred indemnity benefits hold for the other four diagnoses. Figure 4b shows the cost differential at the fourth report level, which is the latest period reviewed in this study, and the time period with the largest cost differential. Claims involving low back pain again had the largest difference in the incurred indemnity benefits, 186% higher costs among the delayed group than the early group. For claims involving acute injuries, such as dislocation and sprain as well as fractures, the delayed group had about 50% higher incurred indemnity costs than the respective early group at the fourth report level.

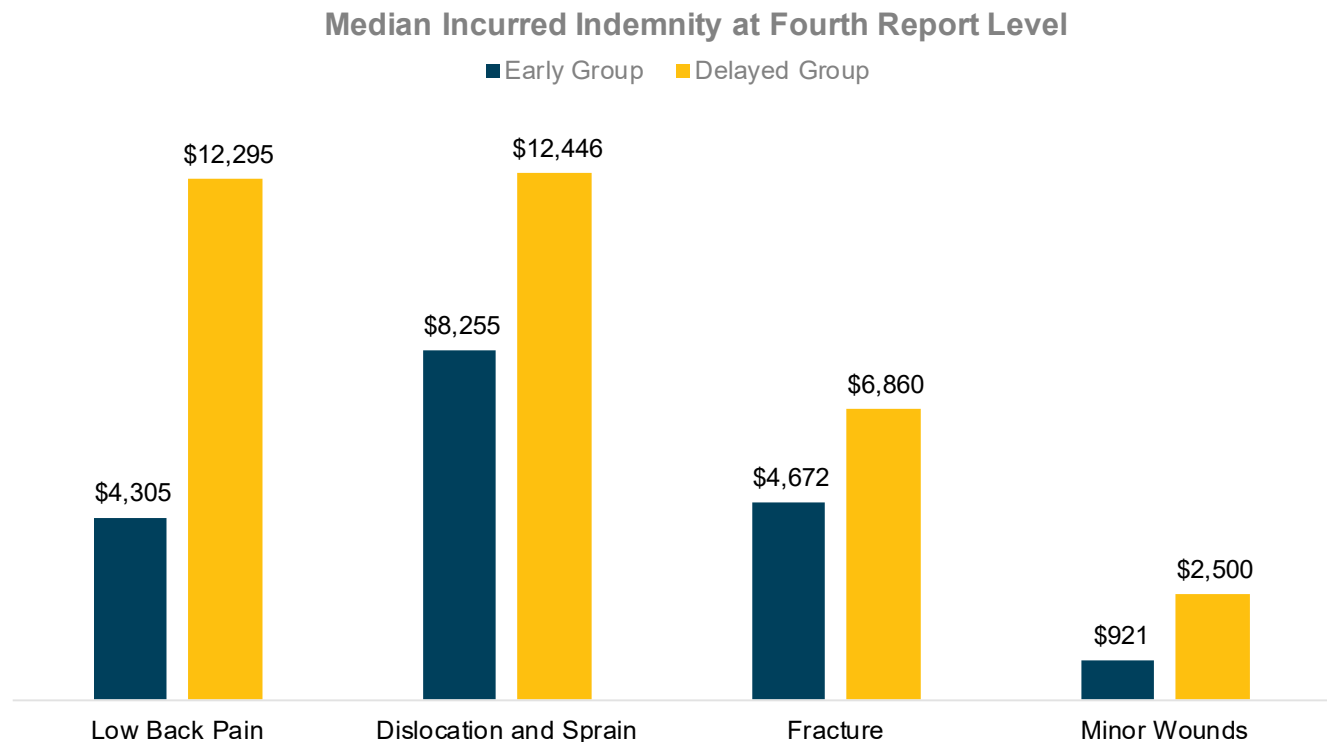
The patterns of paid indemnity benefits on these cohorts of claims are similar to those of paid medical (Appendix: Table A4). While the early group incurred more indemnity payments at the first report level likely due to early recognition of disability and work absence, indemnity payments for the delayed group were higher at the second and later report levels.

Figure 4. Impact of Delayed First Medical Service on Long-Term Incurred Indemnity Benefits

a. Soft Tissue Claims by Report Levels

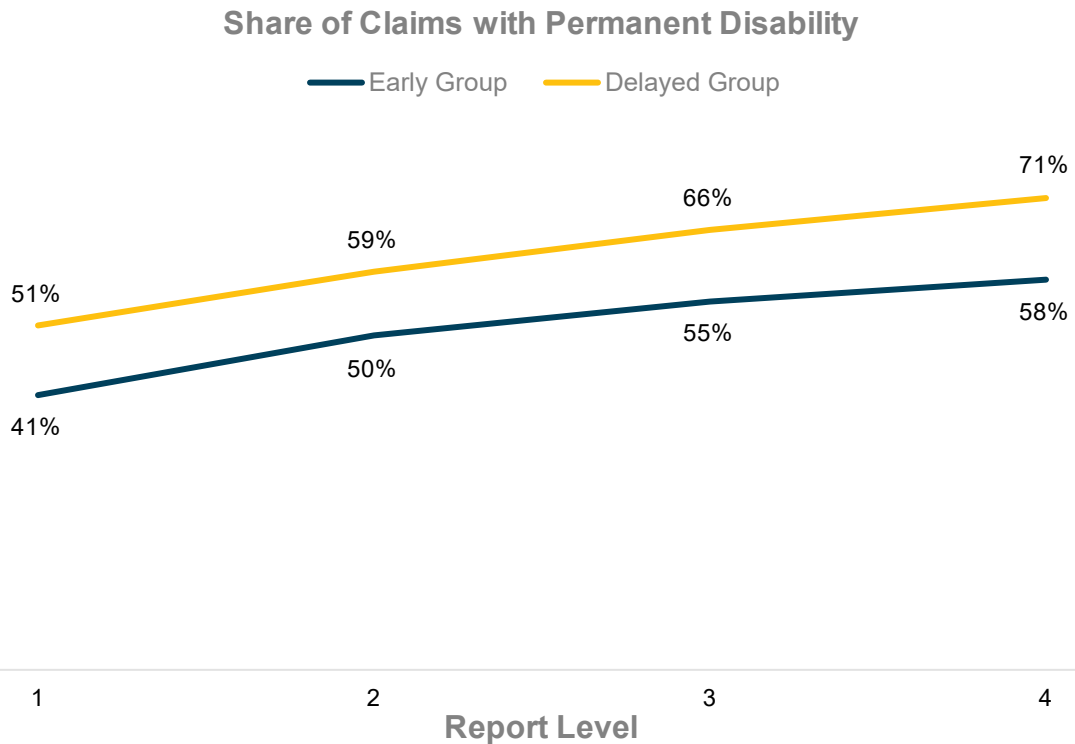


b. Claims of Other Leading Diagnoses at Fourth Report Level (Valued at 54 Months after Policy Inception)²⁰



²⁰ The incurred indemnity benefits at each report level for the claims in Figure 4b are in Appendix Table A2.

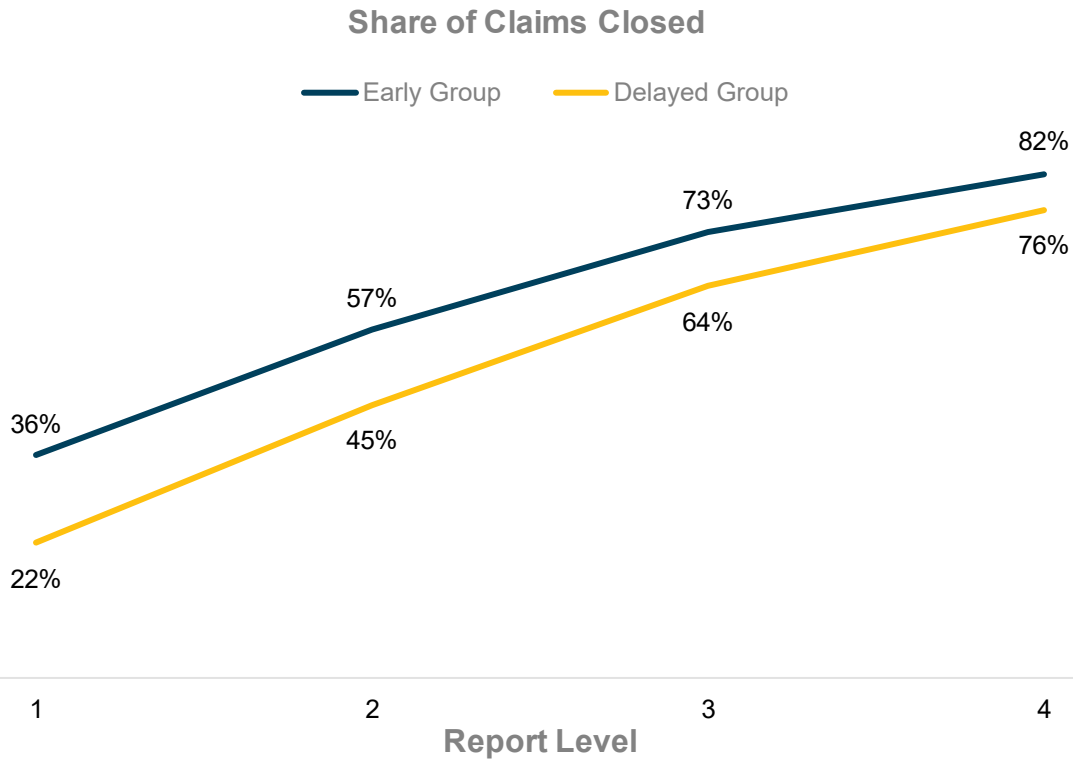
Figure 5. Share of Indemnity Soft Tissue Claims with Permanent Disability



One driving factor for high claim costs is claim duration as there is a strong correlation between the length of time a claim is open and its cost. As shown in Figure 6a, soft tissue claims in the delayed group closed much more slowly throughout the first four report levels than the early group. The differences between the two groups are larger at earlier report levels. The patterns hold for claims of the other diagnoses analyzed in this study (Figures 6b-6c). We observed the largest difference in claim closure rate between the two groups at the first report level, as shown in Figure 6b.

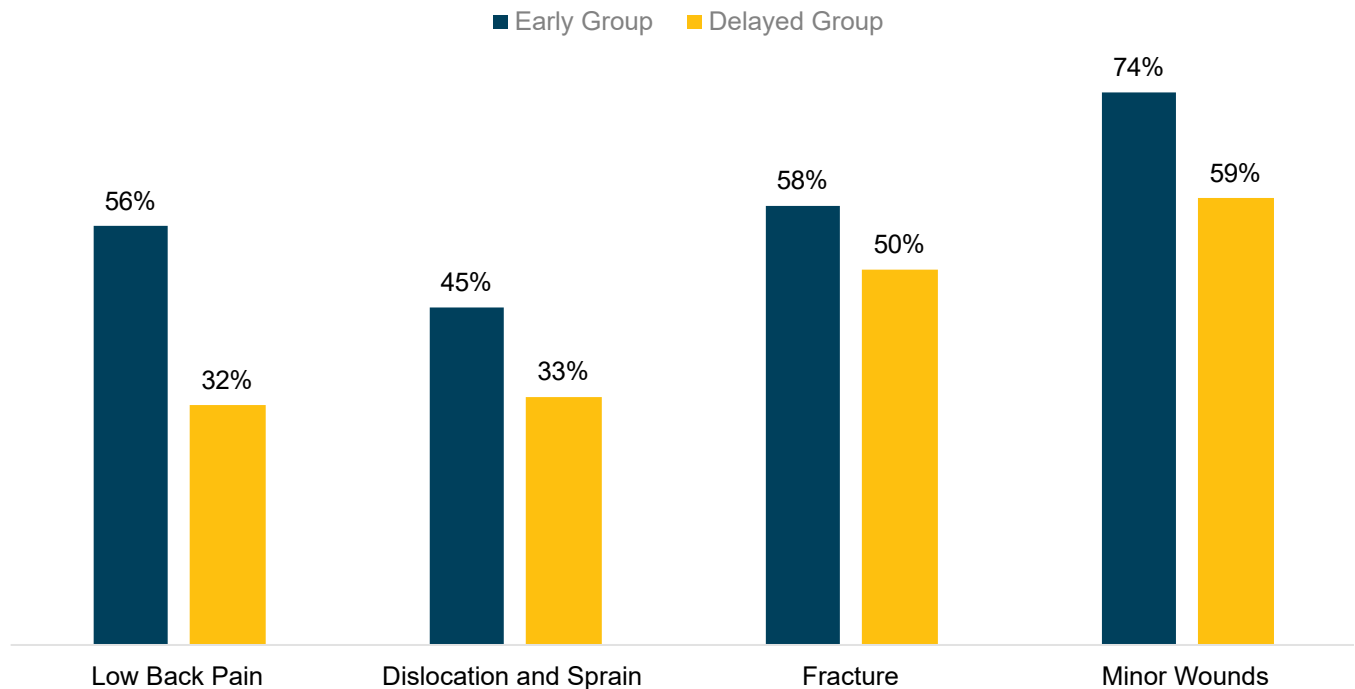
Figure 6. Impact of Delayed First Medical Service on Claim Closure Rate

a. Soft Tissue Claims



b. Claims of Other Leading Diagnoses at First Report Level (Valued 18 Months after Policy Inception)

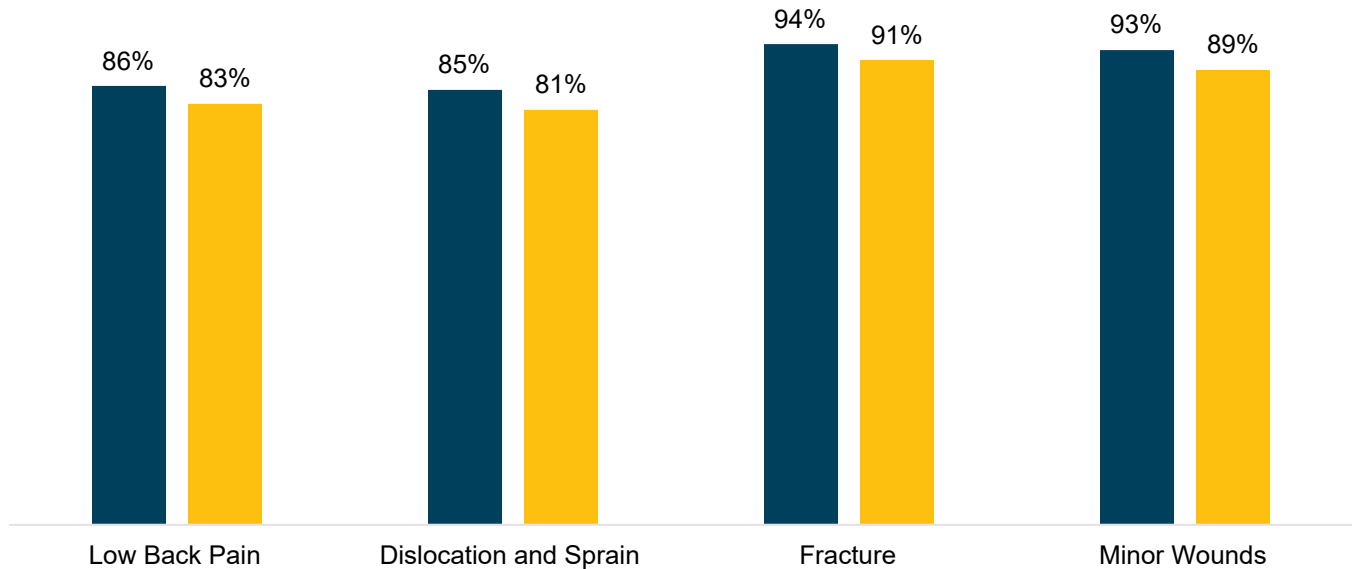
Share of Claims Closed at First Report Level



c. Claims of Other Leading Diagnoses at Four Report Level (Valued 54 Months after Policy Inception)

Share of Claims Closed at Fourth Report Level

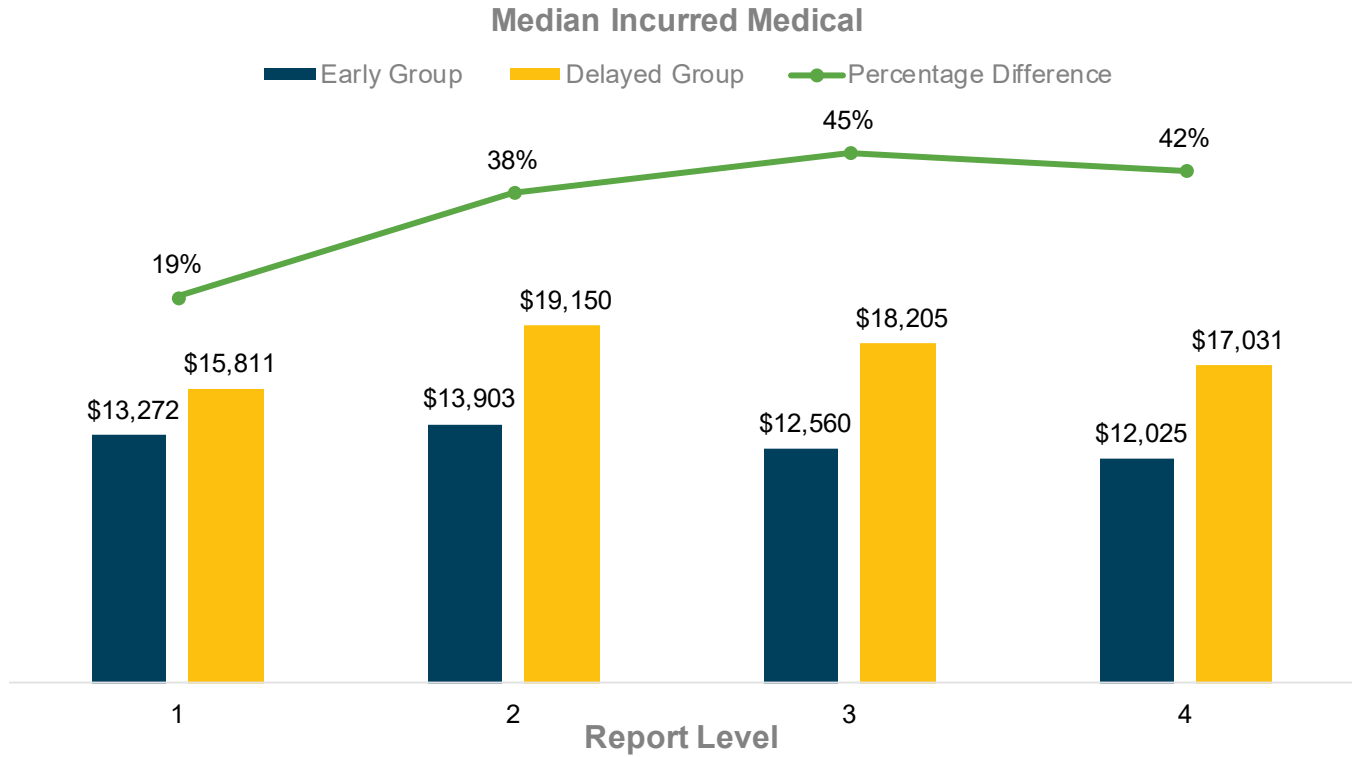
■ Early Group ■ Delayed Group



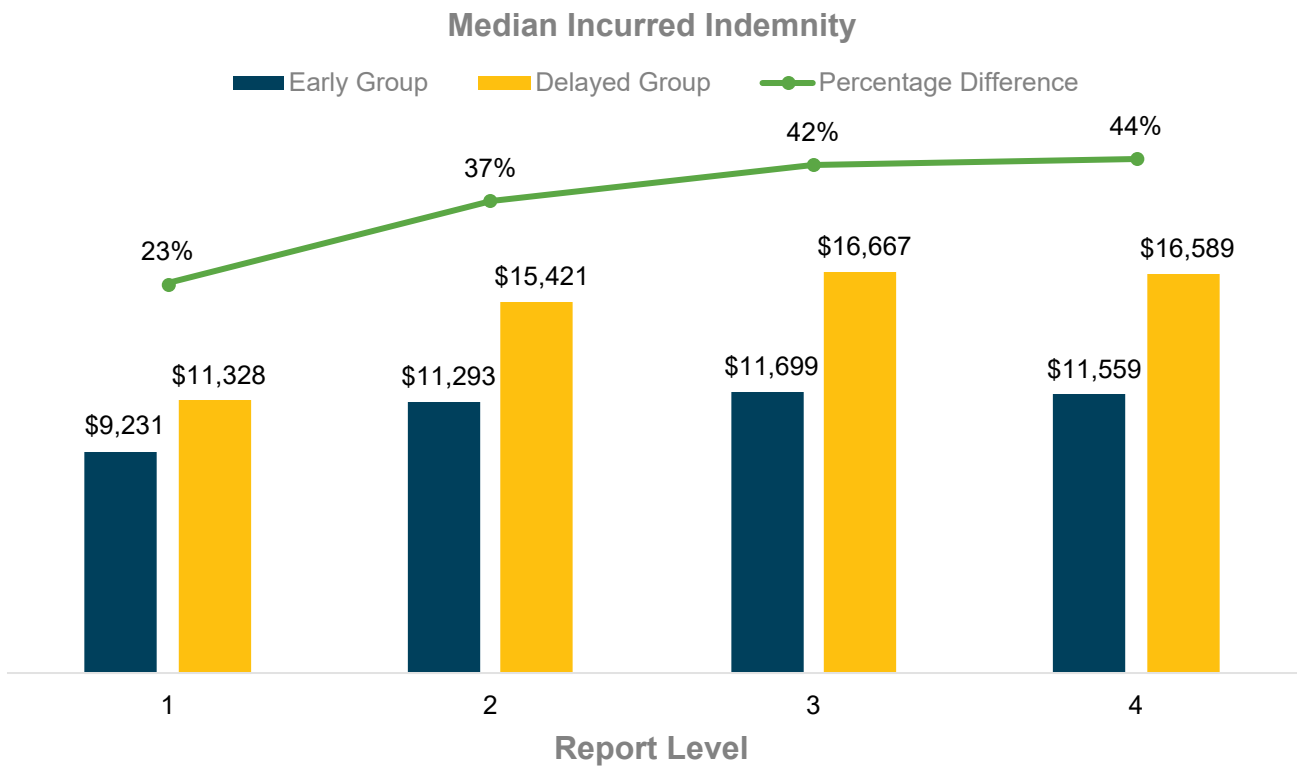
We performed a similar cost impact analysis on a subset of claims that were closed between the third and fourth report level to assess whether claim duration has a large impact on the cost difference between the early and delayed groups (Figure 7 shows the results for soft tissue claims). For closed soft tissue claims, the difference in both incurred medical and indemnity benefits appears to be more pronounced over time. The delayed group also had a faster growing paid medical and indemnity benefits for the first four report levels than the early group (Appendix: Table A5). The results suggest that the long-term cost impacts of delayed medical treatments hold even for claims with a similar duration.

Figure 7. Impact of Delayed First Medical Service on Incurred Medical and Incurred Indemnity Benefits for Soft Tissue Claims Closed between Third and Fourth Report Levels

a. Incurred Medical Benefits for Closed Soft Tissue Claims



b. Incurred Indemnity Benefits for Closed Soft Tissue Claims

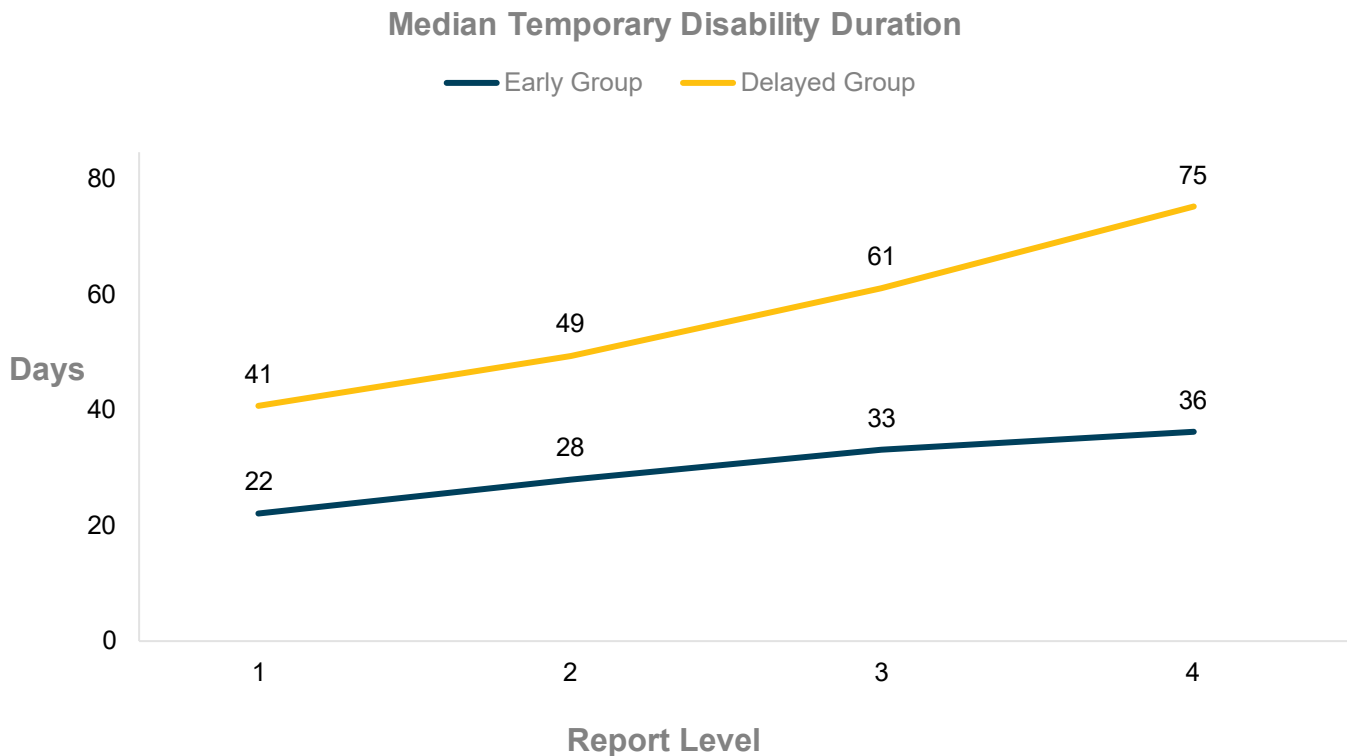


Impact of Delayed Medical Care on Temporary Disability Duration

The impact of medical care delays on TD duration was analyzed using closed indemnity claims in the study that involve only temporary disability and no permanent disability. Regardless of medical diagnosis, those in the delayed group consistently had a longer TD duration than the claims with similar characteristics and a similar claim duration in the early group throughout the first four report levels (Figure 8). The differences between the two groups are larger for claims closed at later report levels. For example, the median TD duration for the delayed group involving soft tissue injuries was almost twice as long as for the early group starting at the third report level (losses valued at 42 months after policy inception). Similar patterns are seen for claims with other diagnoses (Figure 8b). Claims involving low back pain had the biggest differential in median TD duration, about 6 times longer in the delayed group than in the early group at the fourth report level.

Figure 8. Impact of Delayed First Medical Service on Temporary Disability Duration for Indemnity Claims Closed at Each Report Level²¹

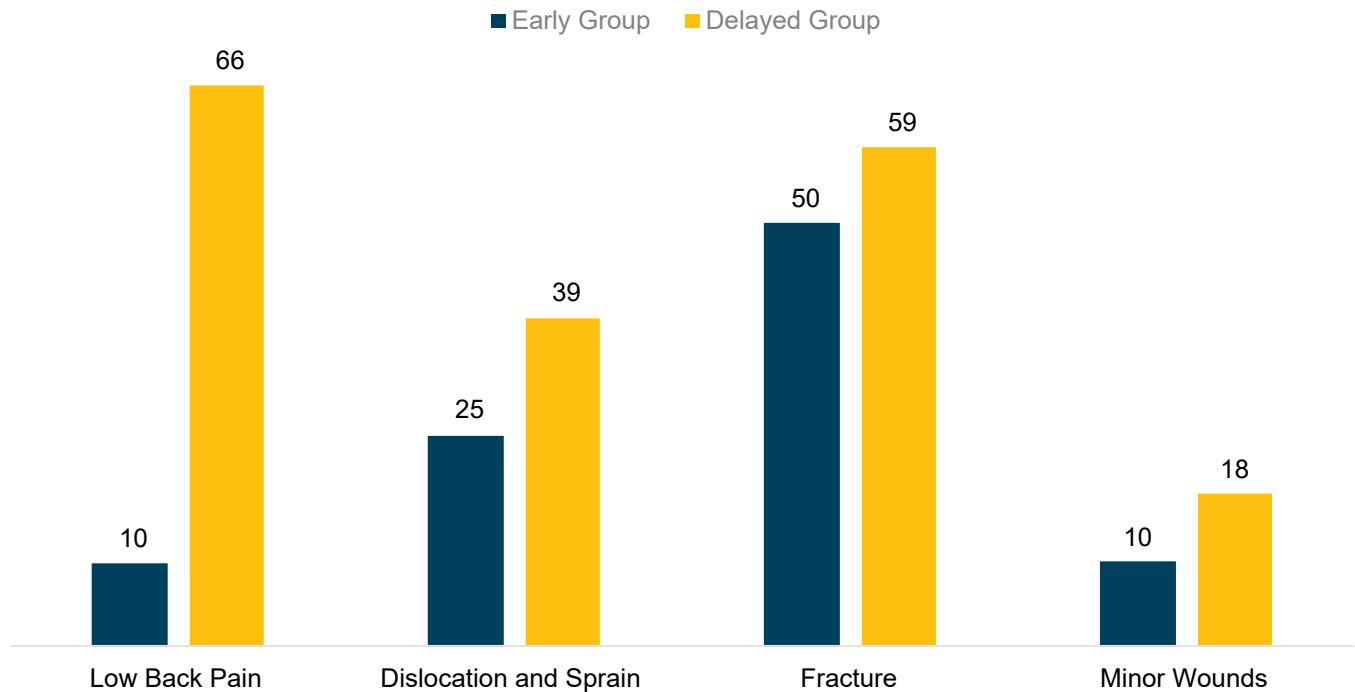
a. Closed Soft Tissue Claims with Temporary Disability Only



²¹ In Figure 8 the claim population at each report level includes TD-only indemnity claims closed at that specific report level. Therefore, the claim population at each report level is mutually exclusive, and the early and delayed groups have a similar claim duration.

b. Closed Temporary Disability Only Claims of Other Leading Diagnoses at Fourth Report Level (Valued at 54 Months after Policy Inception)²²

Median Temporary Disability Duration (Days) at Fourth Report Level



Impact of Delayed Physical Therapy on Soft Tissue Claim Costs and Temporary Disability Duration

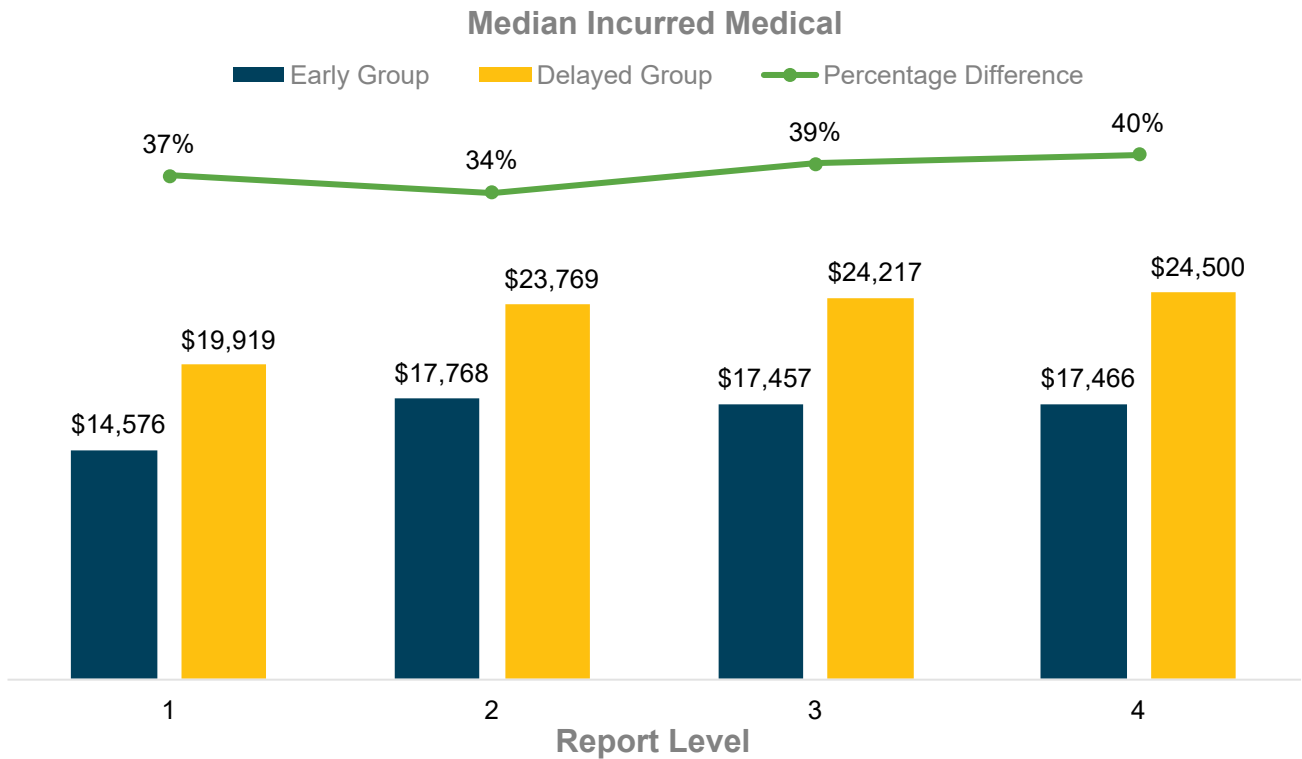
In addition to the delayed first medical service, we also examined how delayed first PT affects the costs of soft tissue claims in the long term. As expected, soft tissue claims involving delayed first PT had approximately 40% higher incurred medical benefits and almost 50% higher incurred indemnity benefits across the first four report levels (Figure 9). Paid medical and indemnity benefits were also 30% to 50% higher among claims with delayed PT treatment (Appendix: Table A7). Interestingly, the difference in both paid and incurred indemnity benefits between the two groups narrowed over time. Nonetheless, the persistently large cost differentials speak to the long-term cost impacts associated with early PT. One important reason may be because soft tissue claims that had early PT are less likely to use opioids, as shown in the WCIRB 2019 research study on the association between early PT and long-term opioid use.²³

²² The TD duration at each report level for the claims in Figure 8b are in Appendix Table A6.

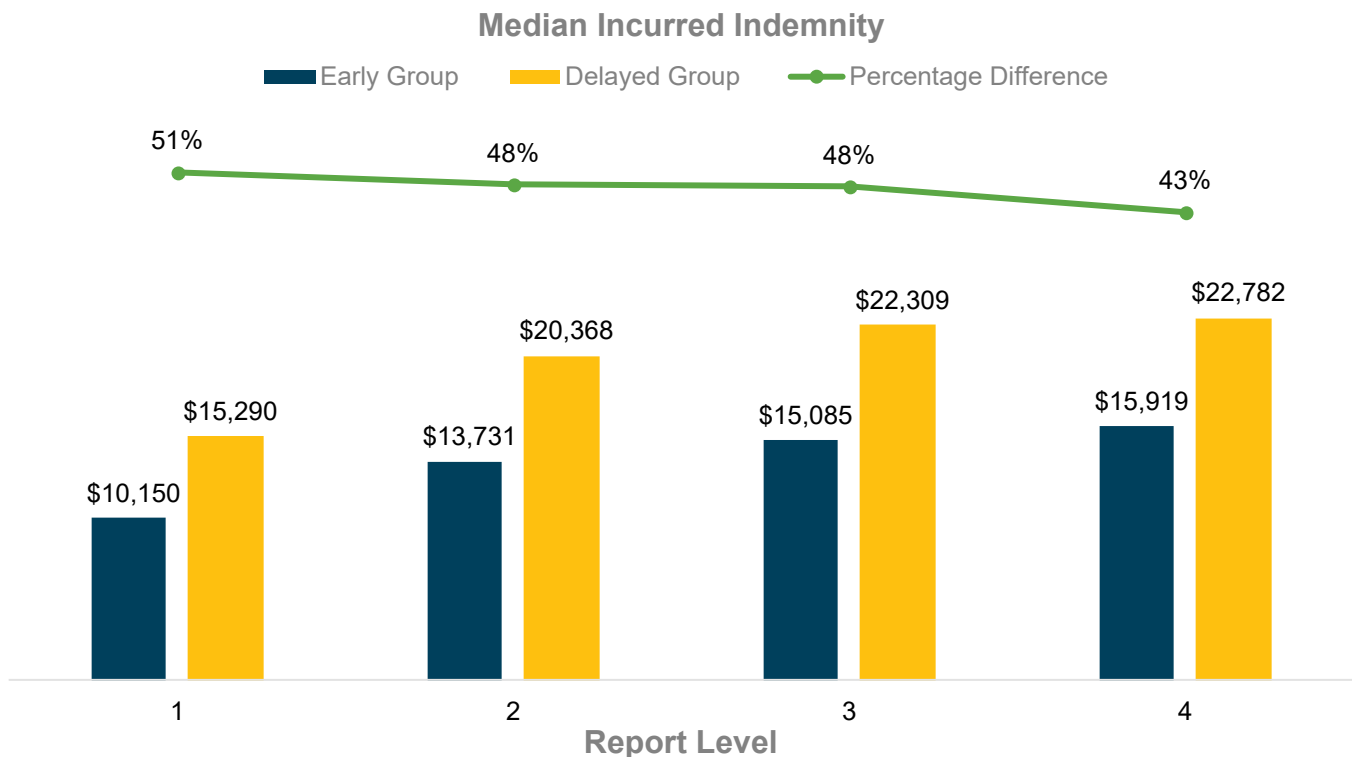
²³ Zhang J., Yu Y. and Sabiniano E. (2020). *Physical Medicine Treatments and Their Impact on Opioid Use and Lost Time in California Workers' Compensation*. WCIRB.

Figure 9. Impact of Delayed First Physical Therapy on Soft Tissue Claim Costs

a. Incurred Medical Benefits



b. Incurred Indemnity Benefits



As shown in Figures 10 and 11, claims with soft tissue injuries and delayed PT tended to stay open longer and have a longer TD duration than similar claims with early PT. This suggests that early PT on soft tissue claims may help reduce work-related disability duration and facilitate earlier return to work.

Figure 10. Impact of Delayed First Physical Therapy on Soft Tissue Claim Closure Rate

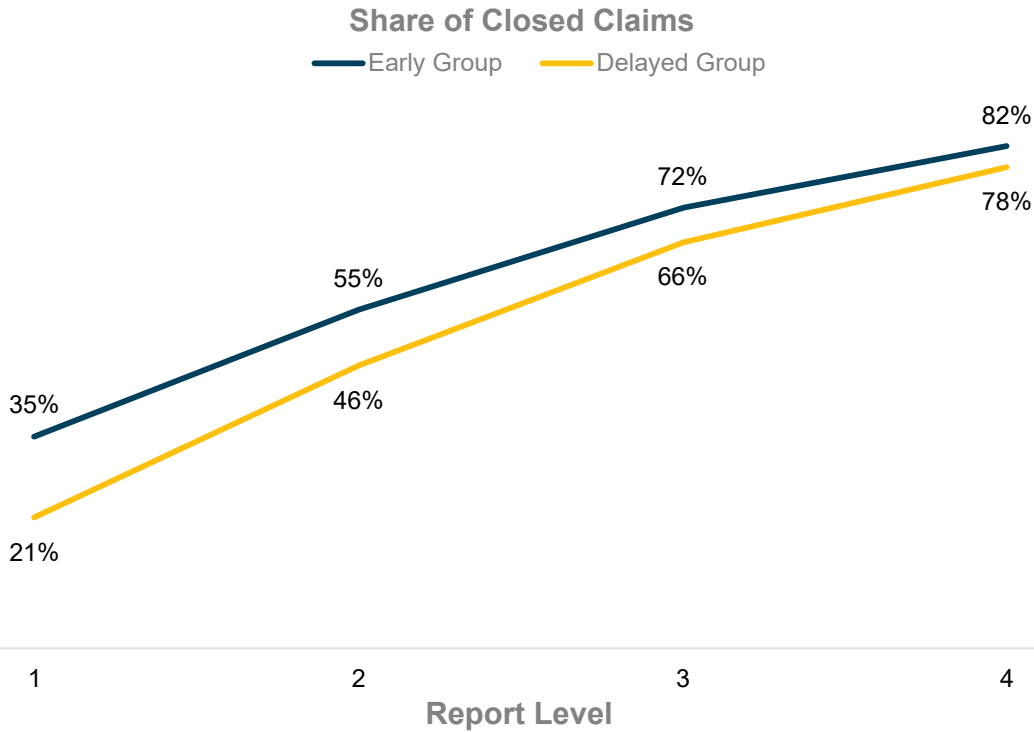
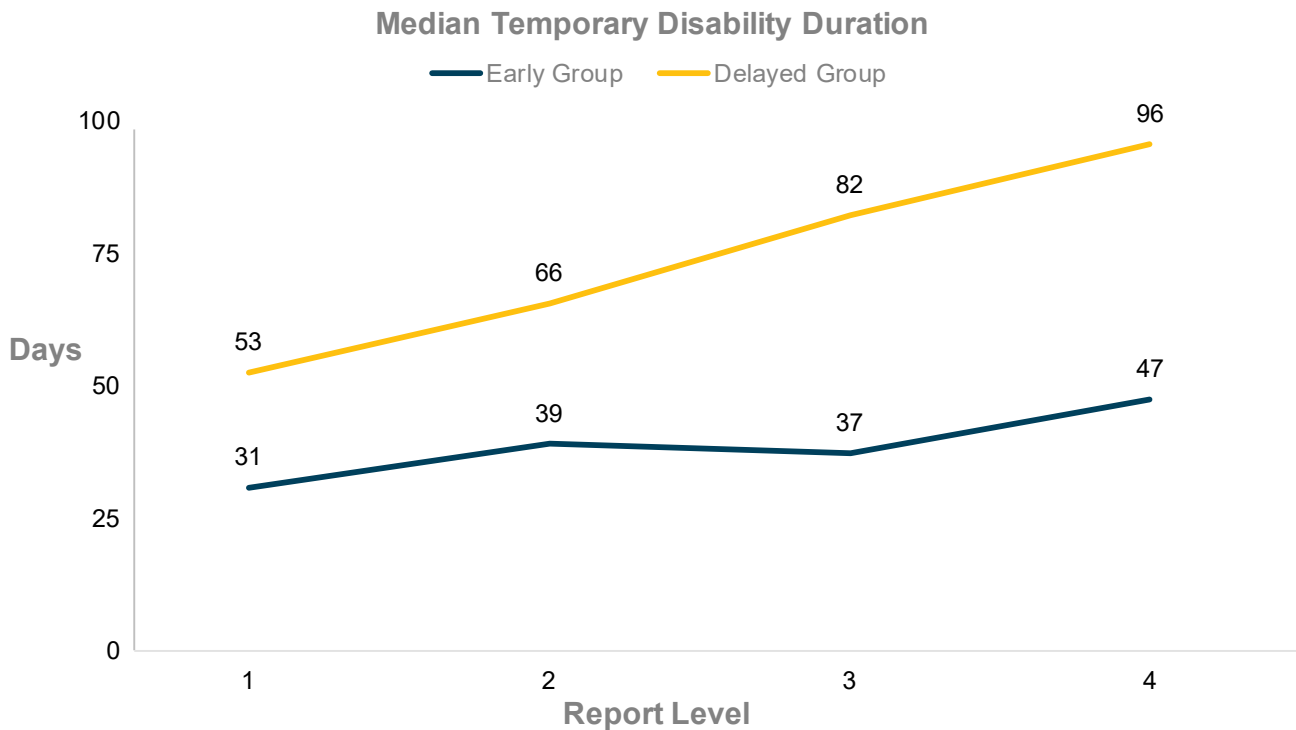


Figure 11. Impact of Delayed First Physical Therapy on Temporary Disability Duration among Closed Soft Tissue Claims with Only Temporary Disability



Conclusions

The COVID-19 pandemic and the resultant shelter-in-place orders brought substantial disruption to health care access for injured workers in California. While most of the medical service providers started to resume normal operations after April 2020, drops in medical treatment utilization and thus delays in medical care were experienced in late March and April in the California workers' compensation system. Our study of the impacts of medical care delays using historical indemnity claim information in the WCIRB's data highlights the significant long-term cost implications of delayed first medical service on medical and indemnity costs even approximately four years after the injury. Our results also underscore the cost savings associated with early PT for soft tissue claims and the positive impact on work-related disability duration. The medical care delays that have occurred during the COVID-19 pandemic were due to unprecedented system shocks and affected both first medical treatment and on-going treatments. Yet, the extent of delays to first medical service in our study using the historical data is similar to the typical delays reflected in the medical treatment patterns during the early weeks of the pandemic. These similarities suggest that the study results can provide insights into the cost impacts of medical delays arising from the COVID-19 pandemic and resultant shelter-in-place orders.

Conditions and Limitations

- The study is based solely on the experience of insured employers. No self-insured employer experience is reflected in the study.
- The study focuses on indemnity claims as they tend to be more costly than medical-only claims in the California workers' compensation system. We included five leading medical diagnoses in the California workers' compensation system and intended to use these groups of claims as examples to assess the long-term cost impacts of delayed medical care. Claims with other diagnoses are not included in this study.
- As discussed in the report, many factors affect the timing of receiving care. While we tried to match claims in the early and delayed group on a comprehensive set of confounding factors derived from the WCIRB data, we did not control for influencing factors that are not available in the data, such as litigation and claims administrative processes. We also do not have robust data on delays in claim reporting, which we started to collect in the new WCIRB indemnity transaction data in 2020. As a result, we were not able to account for delayed claim reporting in this study.
- The WCIRB's medical transaction data does not have information on injury severity, which is a key factor for the timing of receiving care. However, we examined claims with different diagnostic groups separately and matched within each diagnosis claim cohort on pain type based on the ICD codes, major surgery, opioid use, and use of other pain medications, all of which partially account for injury severity.
- The data in this study reflects information on claims submitted by insurers to the WCIRB through submissions of Unit Statistical Report and medical transaction data. While the individual insurer data submissions are regularly checked for consistency and comparability with other data submitted by the insurer as well as with data submitted by other insurers, the source information underlying each insurer's data submission is not audited by the WCIRB.

The data source for all tables is the WCIRB medical transaction data and the WCIRB Unit Statistical Report data. The early and delayed groups of different principal diagnoses in each table were created by using the methodology described in the Analysis Approach. All appendix tables are referenced in the research report.

Table A1. Median Incurred Medical Benefits (Accident Years 2013 through 2017)

Leading Medical Diagnoses		Report Level			
		1	2	3	4
Low Back Pain	Early Group	\$4,521	\$4,230	\$3,978	\$4,323
	Delayed Group	\$10,015	\$13,293	\$14,955	\$15,274
	Percentage Difference	122%	214%	276%	253%
Dislocation and Sprain	Early Group	\$10,130	\$11,008	\$10,418	\$10,004
	Delayed Group	\$12,098	\$15,137	\$15,358	\$15,045
	Percentage Difference	19%	38%	47%	50%
Fracture	Early Group	\$6,362	\$5,010	\$4,614	\$4,534
	Delayed Group	\$8,432	\$7,270	\$6,998	\$6,944
	Percentage Difference	33%	45%	52%	53%
Minor Wounds	Early Group	\$1,346	\$1,388	\$1,383	\$1,373
	Delayed Group	\$3,020	\$3,324	\$3,368	\$3,102
	Percentage Difference	124%	139%	144%	126%

Table A2. Median Incurred Indemnity Benefits (Accident Years 2013 through 2017)

Leading Medical Diagnoses		Report Level			
		1	2	3	4
Low Back Pain	Early Group	\$2,987	\$3,730	\$3,809	\$4,305
	Delayed Group	\$6,786	\$10,013	\$12,127	\$12,295
	Percentage Difference	127%	168%	218%	186%
Dislocation and Sprain	Early Group	\$5,950	\$7,830	\$8,290	\$8,255
	Delayed Group	\$7,542	\$10,990	\$12,188	\$12,446
	Percentage Difference	27%	40%	47%	51%
Fracture	Early Group	\$5,263	\$5,201	\$4,812	\$4,672
	Delayed Group	\$6,391	\$6,597	\$6,859	\$6,860
	Percentage Difference	21%	27%	43%	47%
Minor Wounds	Early Group	\$830	\$928	\$928	\$921
	Delayed Group	\$1,755	\$2,500	\$2,610	\$2,500
	Percentage Difference	111%	169%	181%	171%

Table A3. Median Paid Medical Benefits (Accident Years 2013 through 2017)

Leading Medical Diagnoses		Report Level			
		1	2	3	4
Soft Tissue Injury	Early Group	\$5,360	\$10,229	\$13,276	\$15,167
	Delayed Group	\$4,768	\$11,000	\$15,677	\$18,887
	Percentage Difference	-11%	8%	18%	25%
Low Back Pain	Early Group	\$2,437	\$3,362	\$3,559	\$3,968
	Delayed Group	\$2,929	\$6,924	\$10,504	\$12,610
	Percentage Difference	20%	106%	195%	218%
Dislocation and Sprain	Early Group	\$4,168	\$7,116	\$8,603	\$9,134
	Delayed Group	\$4,107	\$8,641	\$11,642	\$13,165
	Percentage Difference	-1%	21%	35%	44%
Fracture	Early Group	\$3,580	\$4,451	\$4,454	\$4,398
	Delayed Group	\$3,571	\$5,467	\$6,470	\$6,783
	Percentage Difference	0%	23%	45%	54%
Minor Wounds	Early Group	\$1,199	\$1,329	\$1,343	\$1,337
	Delayed Group	\$1,731	\$2,588	\$2,912	\$2,915
	Percentage Difference	44%	95%	117%	118%

Table A4. Median Paid Indemnity Benefits (Accident Years 2013 through 2017)

Leading Medical Diagnoses		Report Level			
		1	2	3	4
Soft Tissue Injury	Early Group	\$4,689	\$9,459	\$12,518	\$14,533
	Delayed Group	\$3,823	\$10,615	\$15,433	\$17,960
	Percentage Difference	-18%	12%	23%	24%
Low Back Pain	Early Group	\$1,326	\$2,353	\$2,845	\$3,300
	Delayed Group	\$1,778	\$5,882	\$9,699	\$10,638
	Percentage Difference	34%	150%	241%	222%
Dislocation and Sprain	Early Group	\$2,596	\$5,218	\$6,841	\$7,402
	Delayed Group	\$2,504	\$6,849	\$9,755	\$11,093
	Percentage Difference	-4%	31%	43%	50%
Fracture	Early Group	\$4,033	\$4,625	\$4,635	\$4,572
	Delayed Group	\$4,309	\$5,472	\$6,341	\$6,488
	Percentage Difference	7%	18%	37%	42%
Minor Wounds	Early Group	\$616	\$806	\$869	\$883
	Delayed Group	\$900	\$1,600	\$2,088	\$2,200
	Percentage Difference	46%	99%	140%	149%

Table A5. Median Paid Medical and Indemnity Benefits for Closed Claims with Soft Tissue Injuries (Accident Years 2013 through 2015)

Closed Soft Tissue Claims ²⁴		Report Level			
		1	2	3	4
Median Paid Medical	Early Group	\$4,960	\$9,086	\$11,210	\$12,017
	Delayed Group	\$4,730	\$10,876	\$15,064	\$16,905
	Percentage Difference	-5%	20%	34%	41%
Median Paid Indemnity	Early Group	\$4,397	\$8,477	\$10,631	\$11,559
	Delayed Group	\$4,034	\$11,190	\$15,025	\$16,589
	Percentage Difference	-8%	32%	41%	44%

Table A6. Median Temporary Disability Duration (Days) for Closed Temporary Disability Only Claims²⁵ (Accident Years 2013 through 2017)

Leading Medical Diagnoses		Report Level			
		1	2	3	4
Low Back Pain	Early Group	16	14	17	10
	Delayed Group	45	37	46	66
	Percentage Difference	180%	167%	172%	575%
Dislocation and Sprain	Early Group	21	22	24	25
	Delayed Group	28	39	39	39
	Percentage Difference	33%	77%	62%	55%
Fracture	Early Group	44	60	50	50
	Delayed Group	57	50	52	59
	Percentage Difference	30%	-16%	5%	18%
Minor Wounds	Early Group	9	9	9	10
	Delayed Group	14	17	16	18
	Percentage Difference	56%	93%	73%	80%

Table A7. Median Paid Medical and Indemnity Benefits for Early and Similar Delayed Groups of Soft Tissue Claims involving Physical Therapy (Accident Years 2013 through 2017)

Soft Tissue Claims involving Physical Therapy ²⁶		Report Level			
		1	2	3	4
Median Paid Medical	Early Group	\$5,167	\$10,277	\$13,338	\$15,382
	Delayed Group	\$6,488	\$13,280	\$17,767	\$20,741
	Percentage Difference	26%	29%	33%	35%
Median Paid Indemnity	Early Group	\$4,472	\$9,399	\$12,500	\$14,618
	Delayed Group	\$7,101	\$14,352	\$18,995	\$20,949
	Percentage Difference	59%	53%	52%	43%

²⁴ Soft tissue indemnity claims that were closed between the third and fourth report levels.

²⁵ The claim population at each report level includes TD-only indemnity claims closed at that specific report level. Therefore, the claim population at each report level is mutually exclusive, and the early and delayed groups have a similar claim duration.

²⁶ For the purpose of this study, we included only soft tissue claims that had a physical therapy within a year of the injury.

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