



# COVID-19's Impact on Medical Treatment in Workers Compensation—A First Look at 2020

## INTRODUCTION

There is no question that the COVID-19 pandemic has had and will continue to have a measurable impact on medical treatment of injured workers in the workers compensation (WC) system. The question is ... to what extent? The simple answer is a single metric, and that is time. It may be years before we grasp the full effect of this pandemic on WC. However, we can assess the effect of COVID-19 on WC by monitoring the data<sup>1</sup> as it comes through and having it tell the story as it develops.

NCCI is undertaking several activities to better understand the impacts of the COVID-19 pandemic on the WC system.<sup>2</sup> One action is monitoring several medical data-related metrics, which were developed to provide insight into the effect of COVID-19 on several aspects of the medical system as it relates to WC [1].<sup>3</sup> These metrics track quarterly results over time, allowing us to compare the data before the onset of the pandemic and workers compensation medical experience thereafter. In this article we share some of the aggregated-multi-state results for these metrics including data from the first (1Q20) and second quarter of 2020 (2Q20). As data emerges, future updates to these metrics will be available on [ncci.com](https://www.ncci.com). A medical data dashboard will include state-specific results, allowing the user to compare a state's experience to a multi-state benchmark.

## KEY OBSERVATIONS

- Hospitalization and intensive care unit (ICU) treatment are key cost indicators of COVID-19 claims
- Overall active<sup>4</sup> claim volume decreased during 2Q20
- Increased use of telemedicine in 2Q20, to varying degrees across states
- Evaluation and management and physical medicine show a decrease in the utilization of in-person services in 2Q20
- The share of claims with surgery has remained steady, but the decreased intensity of surgery procedures seems to reflect a change in injuries or surgery mix
- Drug share of medical costs took an upward turn, in part driven by increased utilization of opioids

<sup>1</sup> The data source used in this study is NCCI's Medical Data Call (MDC). The MDC represents data from most of the workers compensation premium written, which includes experience for large-deductible policies. Lump-sum settlements are not required to be reported. Also, self-insured data is generally not included.

<sup>2</sup> For more industry information related to COVID-19 visit [COVID-19 and Workers Compensation: What You Need to Know](https://www.ncci.com/COVID-19-and-Workers-Compensation-What-You-Need-to-Know) on [ncci.com](https://www.ncci.com)

<sup>3</sup> For more discussions on some of the motivations for monitoring the metrics discussed in this article see: [COVID-19's Impact on Medical Treatment in Workers Compensation—What to Measure](https://www.ncci.com/COVID-19s-Impact-on-Medical-Treatment-in-Workers-Compensation-What-to-Measure) on [ncci.com](https://www.ncci.com)

<sup>4</sup> A claim is considered active if the injured worker has at least one medical encounter during the period

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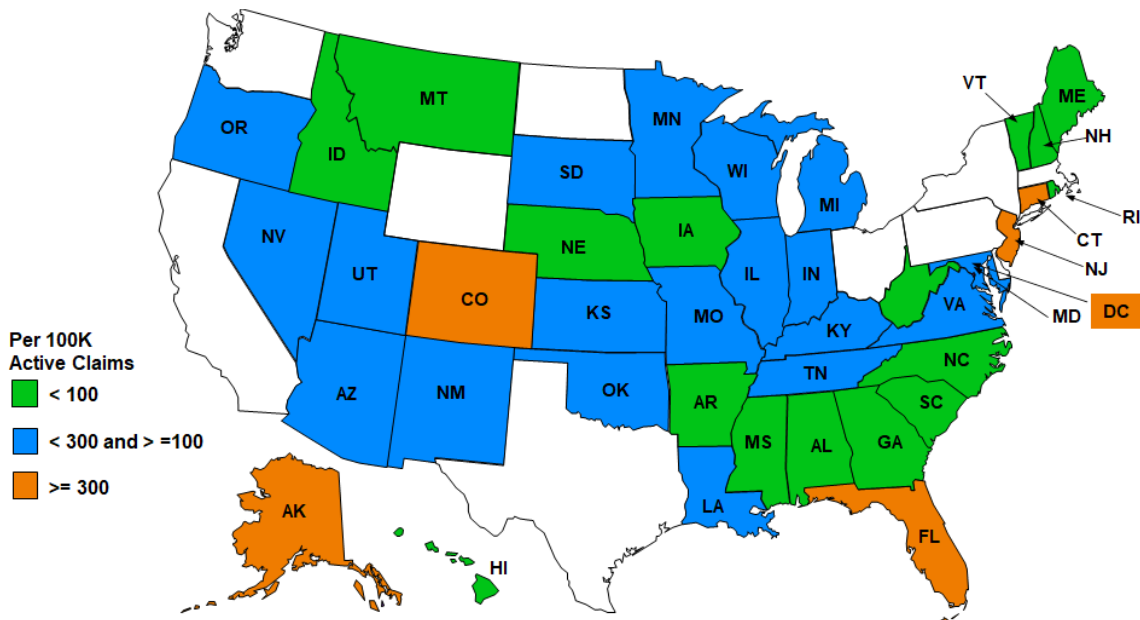
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## CLAIMS WITH A COVID-19 MEDICAL TREATMENT

The Centers for Medicare & Medicaid Services (CMS) and the National Center for Health Statistics (NCHS) provide guidelines for coding and reporting medical transactions using the International Classification of Diseases (ICD-10-CM) [2]. These guidelines explicitly suggest that a medical service related to COVID-19 should be reported by the medical provider with the appropriate identifying diagnosis code in order to be reimbursed. We identify claims with a paid COVID-19 medical treatment other than a lab test using the diagnosis reporting and designate such claims as **COVID-19 medical claims**. As of 2Q20<sup>5</sup>, approximately 1,200 COVID-19 medical claims have been reported through the Medical Data Call. This does not constitute all COVID-19 WC claims as it does not include claims that have indemnity payments but no paid medical services beyond lab testing.

Metric 1 measures the number of COVID-19 medical claims per 100K active claims. Across all jurisdictions included in this study<sup>6</sup>, the number of COVID-19 medical claims per 100K active claims is around 200. This incident rate varies by jurisdiction, from less than 100 to over 300 per 100K active claims.

**Metric 1—Number of COVID-19 Claims per 100K Active Claims**



One measure of the severity of symptoms of the COVID-19 diagnosis is whether the patient was hospitalized. Of those hospitalized, another measure of the severity is whether the patient is admitted to an intensive care unit (ICU). Metric 2 shows statistics related to hospital admissions for COVID-19 medical claims through 2Q20. We observe the following:

- 20% of COVID-19 medical claims had an inpatient stay
- Of those claimants with an inpatient stay, 19% were in an ICU for some portion of their hospital stay
- The average length of inpatient stays for COVID-19 medical claims is 7.5 days
- The average cost per day is \$5,400, totaling on average \$38,500 per inpatient stay
- COVID-19 medical claims requiring an ICU visit tend to incur longer and more expensive inpatient stays, at 11.5 days and \$67,300 per inpatient stay, respectively

<sup>5</sup> Based on data received as of Oct 15, 2020

<sup>6</sup> AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MI, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI and WV

**Metric 2—Hospital Admissions for COVID-19 Medical Claims**



20%  
Share of COVID claims with an inpatient stay

\$38.5K  
Average paid per stay



19%  
Share of inpatient stays with ICU services

75%  
Increase in cost for stays with an ICU visit



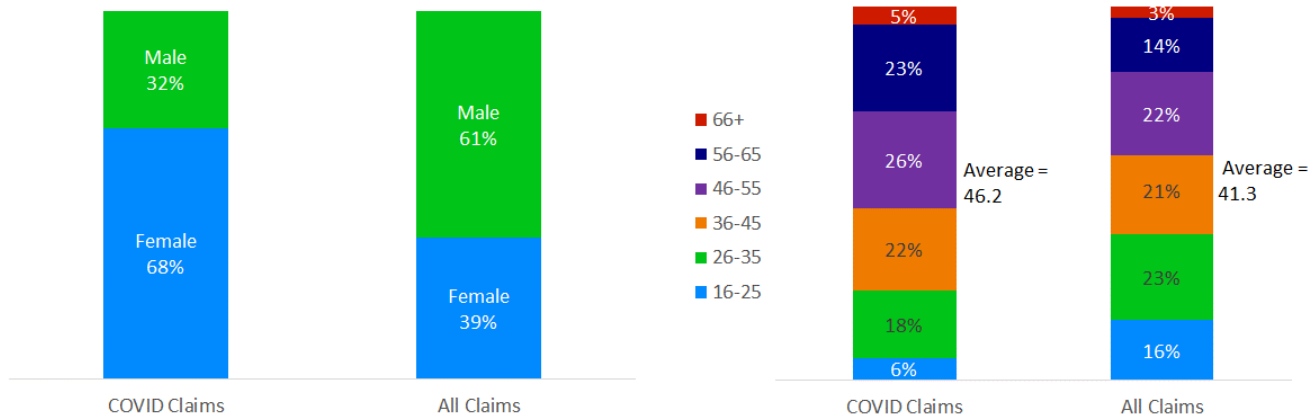
7.5 days  
Average length of inpatient stay

61%  
Increase in length of stays with an ICU visit

Two interesting characteristics of COVID-19 medical claims are gender and age at injury. Metric 3 explores the gender difference between COVID-19 medical claims and all WC claims as of 2Q20. At 70%, females represent a larger share of the COVID-19 medical claims than in the general WC claimant population. One potential contributing factor to this disparity is that women represent a significantly greater portion of healthcare employment. According to the US Census, by far, the largest healthcare occupation is registered nurses, with over 2.4 million workers, followed by 1.2 million nursing, psychiatric, and home health aides. Women make up more than 85% of workers in both large occupation groups [3].

Metric 3 also shows that the average age for workers with a COVID-19 medical claim is 46.2 years, as compared to the average age of the general WC claimant population of 41.3.

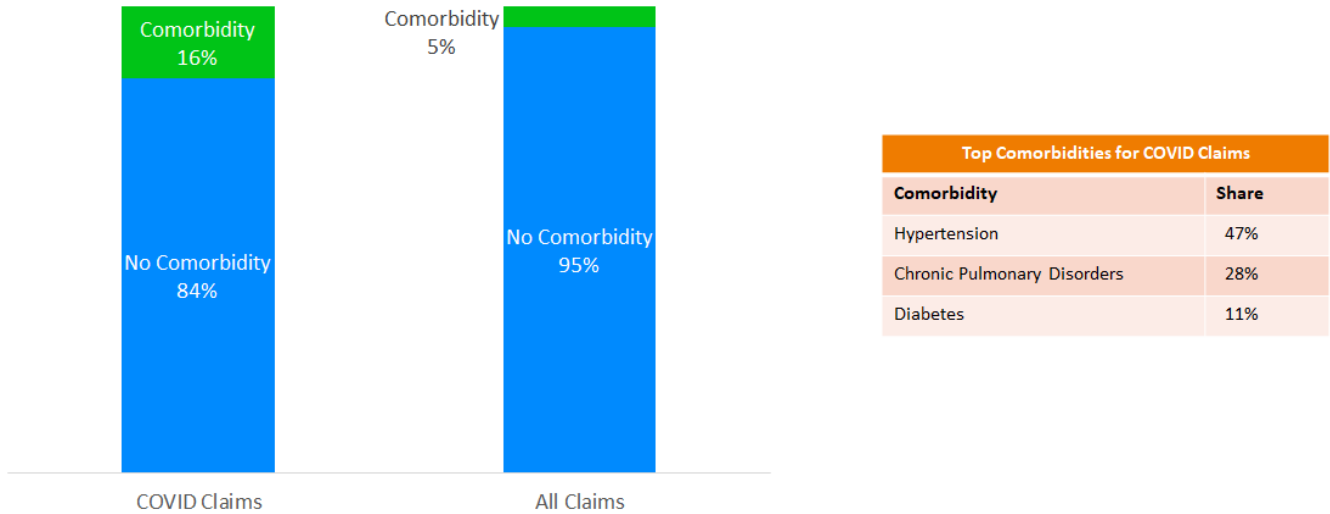
**Metric 3—Demographic Characteristics of COVID-19 Medical Claims**



COVID-19 patients with certain comorbidities or preexisting conditions tend to be more likely to endure more severe symptoms. According to the Centers for Disease Control and Prevention (CDC), adults of any age with certain underlying medical conditions are at increased risk for severe illness from the virus that causes COVID-19 [4].

Metric 4 shows the portion of COVID-19 medical claims having some treatment for an identifiable comorbidity<sup>7</sup> to be 16% in 2Q20. The top three types of comorbidities observed are hypertension, chronic pulmonary disorders, and diabetes.

**Metric 4—Comorbidity of COVID-19 Medical Claims**



**OVERALL MEDICAL CLAIM REPORTING AND PAYMENT ACTIVITY**

Data used to analyze each of the metrics include 41 US jurisdictions. Metrics were organized on a quarterly basis to allow us to compare results pre- and post-<sup>8</sup> the spread of COVID-19 with the data valued at comparable time slices.

Metric 5 shows the number of active claims. A claim is considered active if the injured worker has at least one medical encounter during the period. Two categories of active claims are:

- Existing claim—an active claim with a date of injury prior to the beginning of the quarter
- New claim—an active claim with a date of injury during the quarter

Here we see a drop of 15% in active claims from 1Q20 to 2Q20. There was an 18% decrease in the number of active claims in 2Q20 when compared to the 2Q19. The decline in claim activity may be attributed to several possible reasons, including:

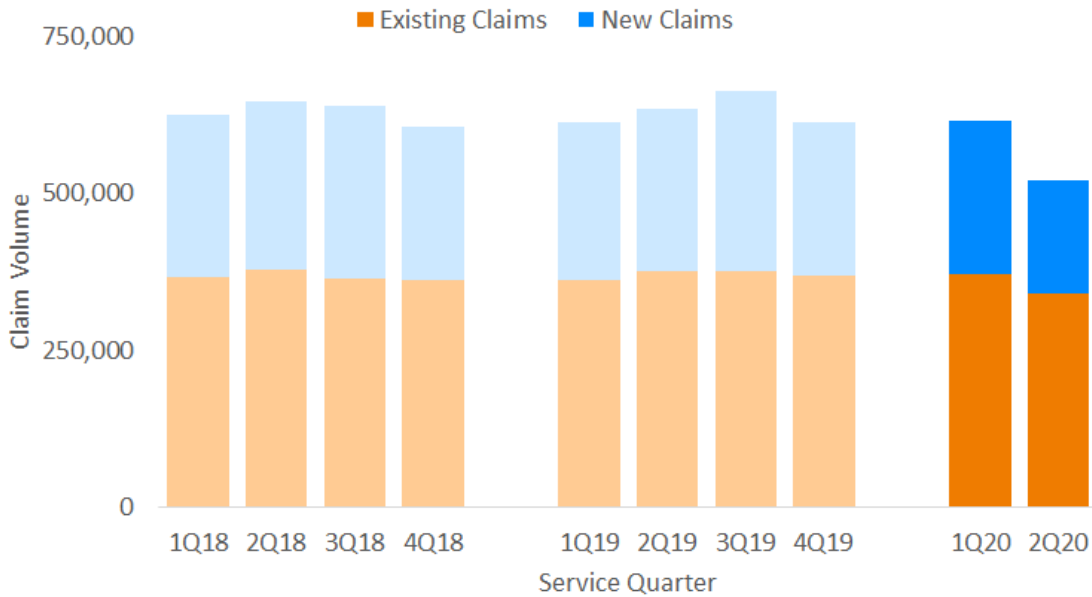
- A drop in risk exposure (payroll or premium)
- A decline in reported claims
- Late reporting of claims
- A decrease in medical treatments, leading to previously active claims dropping off from the current period.

The direction of the change is of interest and insightful. Metric 5 reveals that in 2Q20, the number of new claims decreased by 26% while existing claims decreased by 9% when compared to the previous quarter.

<sup>7</sup> Comorbidities based on NCCI’s research titled [Comorbidities in Workers Compensation](#). A comorbidity is only identifiable if treated and reported during the medical encounter.

<sup>8</sup> We refer to the pre- and post-COVID-19 pandemic periods in accordance with the declaration by the World Health Organization on March 11, 2020.

**Metric 5—Number of Active Claims per Quarter**



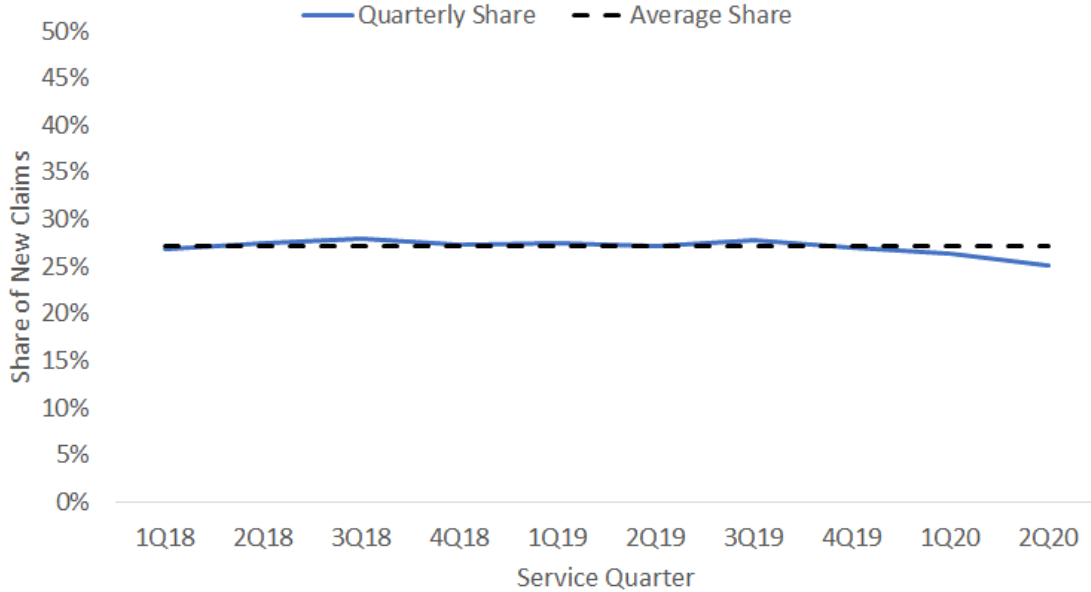
**INDIRECT IMPACT OF COVID-19 ON MEDICAL TREATMENT FOR ALL WC CLAIMS**

The COVID-19 pandemic has affected many aspects of life and the WC system is no different. The WC system relies on prompt access to care for injured workers. During the public health emergency, several outlets for medical services either closed or limited their services to telemedicine and, in the case of hospitals, had to defer nonessential surgeries. Thus, access to care for injured workers may, to some extent, have been delayed or detracted.

**EMERGENCY SERVICES**

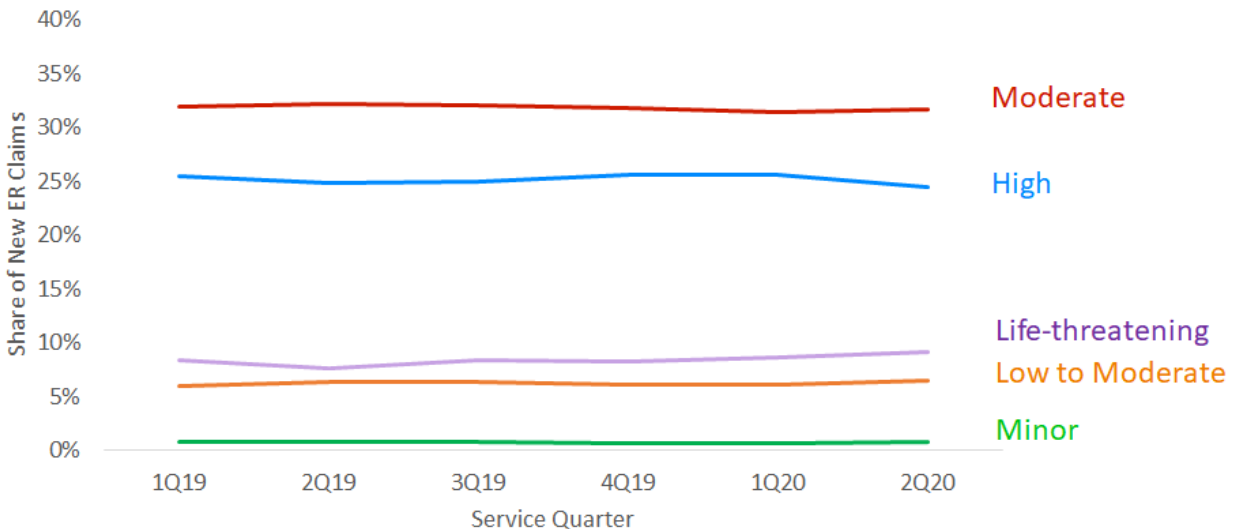
Most emergency care encounters in WC take place in an emergency room (ER) setting. Metric 6 explores the share of new claims having an emergency care encounter as the first medical encounter. It shows the average share of new claims having emergency care as the first medical encounter to be around 27% throughout the quarters of services included. In 2Q20, this share dropped slightly to 25%, reflecting perhaps some hesitation to go to a hospital, or a decrease in claims requiring urgent care.

**Metric 6—Share of New Claims With an Emergency Service as the First Encounter**



To assess if there has been a shift in the severity of injuries or illnesses associated with ER visits, we observe the categorical distribution of ER visits in Metric 7. For ER visits, there are five levels of severity based on current procedure terminology (CPT) codes, ranging from limited or minor problems reported with CPT code 99281 to life-threatening situations reported with CPT code 99285. This metric shows that 2Q20 did not exhibit a substantial shift in the distribution of medical severity of ER visits.

**Metric 7—Share of New Claims With Procedure Codes 99281–99285**

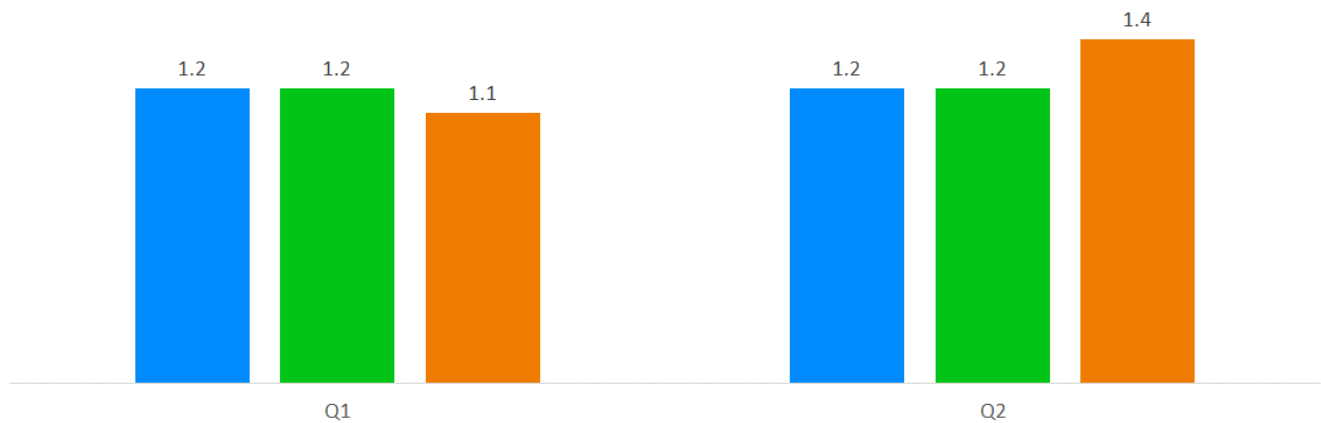


Measuring the number of days between the date of injury and that of the initial treatment is an important metric that can be used to assess delays in receiving care. Metric 8 examines the average time, in days, between date of injury (Day0) and first ER encounter. It shows the 2Q20 average to be 0.2 days longer when compared to 2Q18 and 2Q19. Is the delay an indication of limited access or hesitation to go to a hospital and seeking alternative venues for that treatment?

**Metric 8—Time to First ER Visit After Injury**

Average Time (in Days) to Treatment  
Emergency Room

■ 2018 ■ 2019 ■ 2020

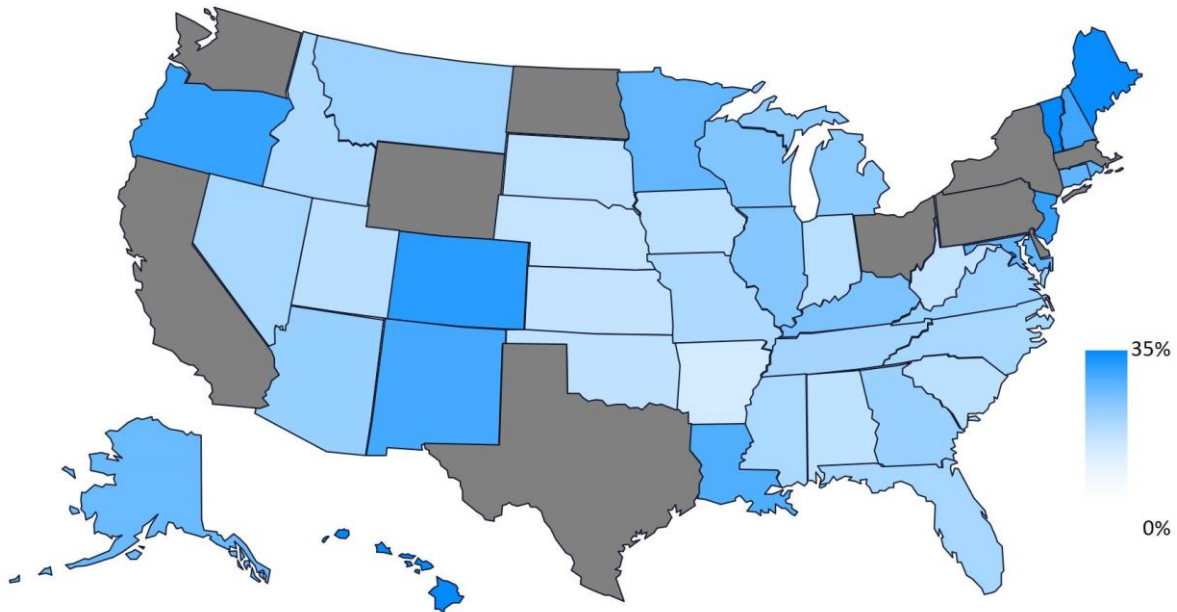


**TELEMEDICINE**

The CDC reports that insurance payers and healthcare personnel professional associations have supported the transition to telemedicine services during the pandemic [5]. Telemedicine provides access to care while reducing physical interaction between patients and healthcare staff—a critical feature during a pandemic. Consequently, several states acted through issuance of guidance, emergency orders and reforms to encourage and facilitate the use of telemedicine [6].

Early results are reflected in Metric 9, which measures the share of active claims with at least one telemedicine service. This metric illustrates significant expansion in the use of telemedicine services in WC, having increased from less than a third of a percent before 2020 to approximately 14% in 2Q20. This varies by state, ranging from about 5% in Arkansas to more than 30% in Maine.

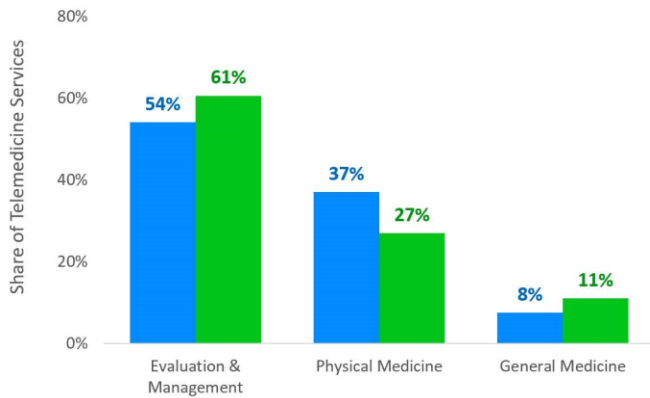
**Metric 9—Share of Active Claims With at Least One Telemedicine Service in 2Q20**



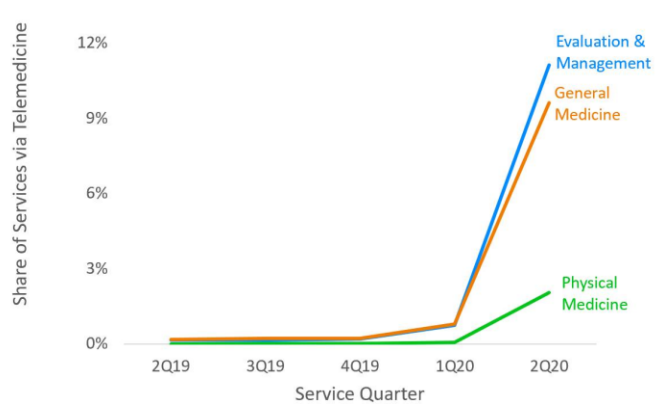
Metric 10 explores the distribution of telemedicine services across physician categories. In 2Q20, the majority of telemedicine experience was for evaluation & management services, which typically constitute a large share of physician services. Since 2019, there has been a significant expansion in the use of telemedicine for three types of physician services: evaluation & management at 11%, general medicine at 10%, and physical medicine<sup>9</sup> at 2%. Will the utilization of telemedicine persist?

**Metric 10—Telemedicine Services by Physician Service Category in 2Q20**

**Distribution of Telemedicine Transactions and Payments by Type of Service in 2Q2020**



**Share of Services Provided via Telemedicine**



<sup>9</sup> Physical medicine includes medical rehabilitation services such as physical therapy



One type of medical service that had a substantial increase in the use of telemedicine is psychological services. Although the share of claims having at least one psychological or behavioral service remains consistent with historical experience, the share of those services provided via telemedicine increased substantially from less than half a percent prior to 2020 to approximately 40% in 2Q20.

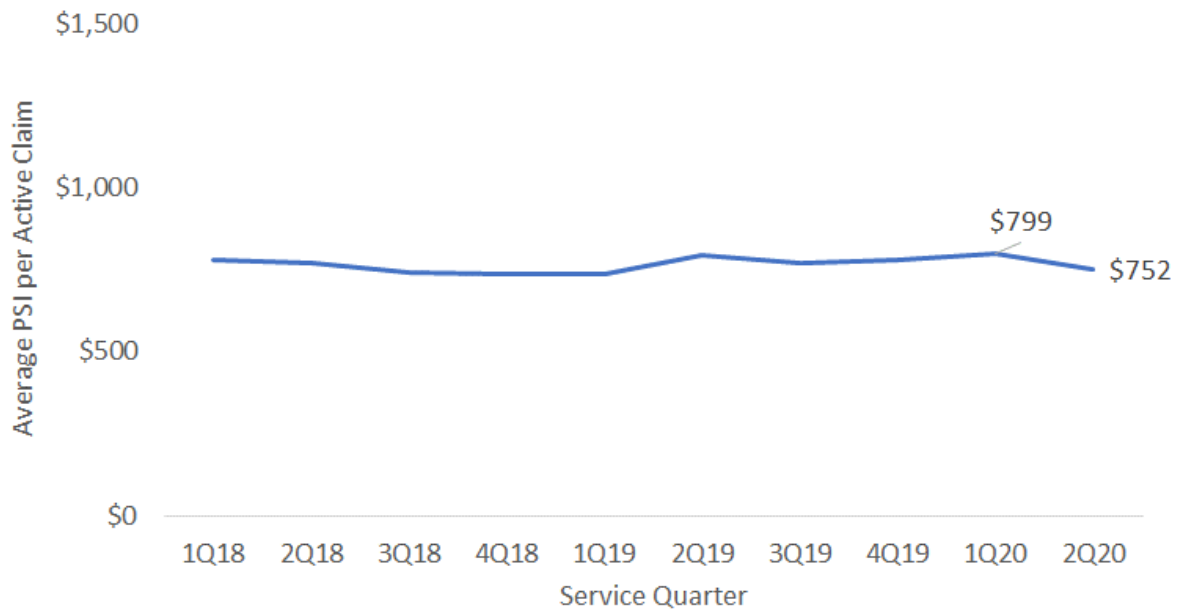
**PHYSICIAN SERVICES**

Physician and medical professional services represent approximately 40% of all WC medical costs across the jurisdictions studied. Therefore, these services may serve as an important metric, because changes in their utilization could point toward potential impacts on overall medical outcomes. In particular, a lower utilization could be an indicator of delays in medical treatment and thus potentially the injured worker’s recovery.

When analyzing changes in the number of services per active claims it is important to consider the types and intensity of services provided. As a tool to measure differences in Physician Service Intensity (PSI), NCCI constructed a Workers Compensation Relative Price Index (WCRPI) [7]. The PSI is resource based, applies by CPT codes and place of service, and does not vary by state or date of service. These PSIs, much like relative value units used by CMS for physician services, assign values that correspond to the amount of resources necessary to provide the service, with greater values corresponding to higher amounts of resources.

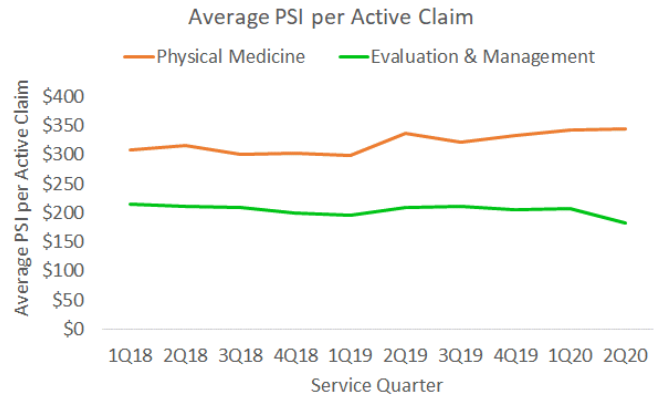
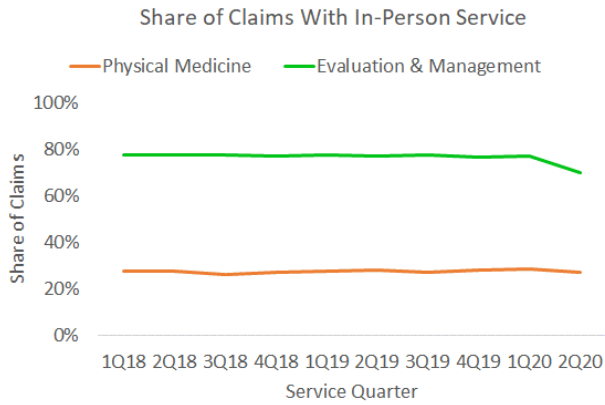
Metric 11 shows a modest drop of about 6% in the average PSI per active claim in 2020 when compared to the average in prior quarters.

**Metric 11—Average PSI per Active Claim**



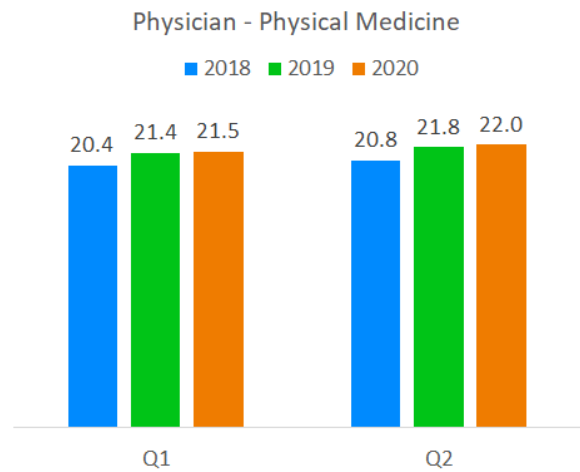
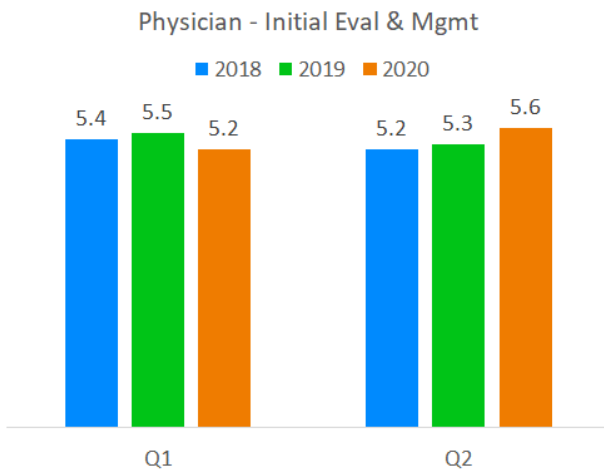
Physical medicine and evaluation & management represent more than half of all physician payments. Metric 12 drills down into these physician services and shows that the share of active claims with at least one of these services decreased for each of them. Furthermore, this metric examines the average PSI per active claim. It shows a modest increase for physical medicine and modest decrease for evaluation & management in 2Q20. This may indicate some shift in the mix of services provided in 2020 for these types of physician services. Future experience can shed some light on these changes.

### Metric 12—Utilization by Type of Physician Service



If fewer services were provided, the question remains: Is there some additional indication of a delay in medical treatments? Metric 13 explores the number of days from the date of injury to the time of initial treatment. The metric shows that in 2Q20, the average time to the first medical encounter after injury increased slightly when compared to prior quarters for physical medicine, but to a greater extent for evaluation & management.

### Metric 13—Average Number of Days to Initial Treatment



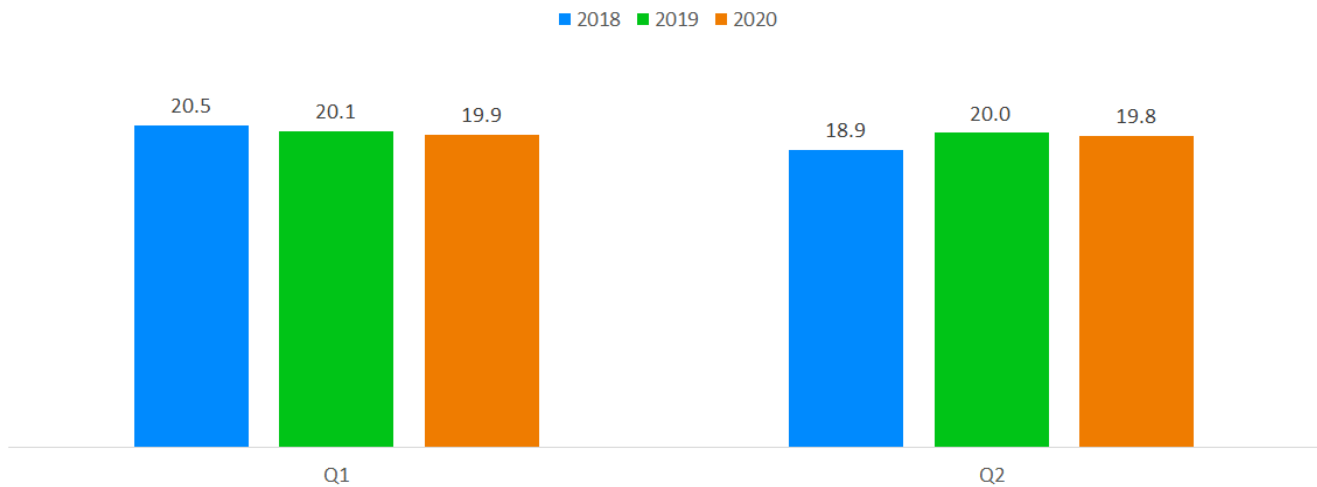
**SURGERIES**

On March 18, 2020, CMS released guidance to limit non-essential adult elective surgeries and medical and surgical procedures, including all dental procedures. Additionally, some states instituted mandates to limit surgeries, thus generating an expectation that some WC surgeries would be delayed. Medical studies have shown that delaying elective surgery is associated with a significant increase in infectious complications and mortality. The delay is also associated with a significant increase in hospital costs [8].

The share of active claims with a surgery is steady at roughly 12% over the last 2 years and into the 2Q20. Both minor surgeries and major<sup>10</sup> surgeries exhibit a steady share over the full period.

Metric 14 measures the number of days elapsed from the date of injury to the date of initial major surgery. Once again, there was no significant difference in the time to first treatment in 2Q20 as compared to historical experience. The measure indicates that, in general, WC injured workers did not experience significant delays in major surgeries during this period based on claims that had a surgery.

**Metric 14—Average Number of Days to Initial Major Surgery Treatment**



Next, we examine where major surgeries are taking place. Historically, most major surgeries take place in an outpatient setting, evenly distributed between hospital outpatient facilities and ambulatory surgical centers, though this does tend to vary by state. For those claimants that had a major surgery during 2Q20, the share of those surgeries at an inpatient setting remained steady. However, there was a modest shift in the share of outpatient surgeries performed in a hospital outpatient setting to an ambulatory surgical center in 2Q20.

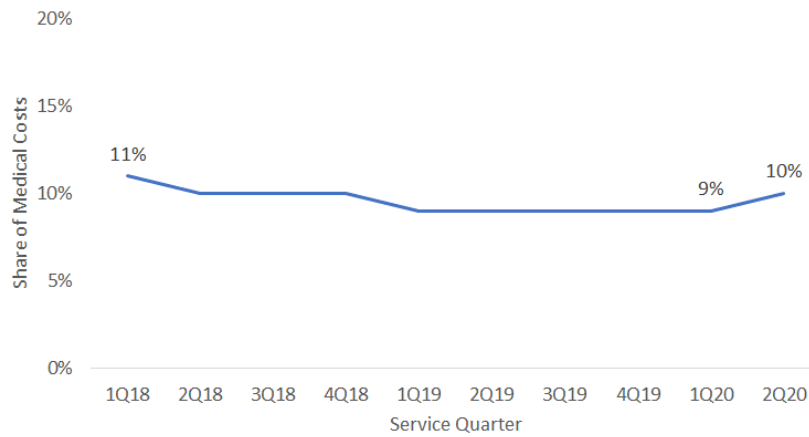
<sup>10</sup> A service is classified as “surgical” if it falls within the surgical category as defined by the American Medical Association. A service is further classified as “major surgery” if it has a global follow up period of 90 days as defined by the Centers for Medicare & Medicaid Services and is not an injection.

**PRESCRIPTION DRUGS**

As we consider the role that prescription drugs play in the treatment of WC injuries, Metric 15 measures the share of medical costs attributed to prescription drugs. In recent years, the share of prescription drug costs has been decreasing, with 1Q20 hitting a low of 9%. A reversal of the decreasing trend is most notable as the prescription drug share of medical costs has increased to 10% in 2Q20. A portion of this increase comes from a modest increase in the number of prescriptions per active claim. Two potential questions come to mind:

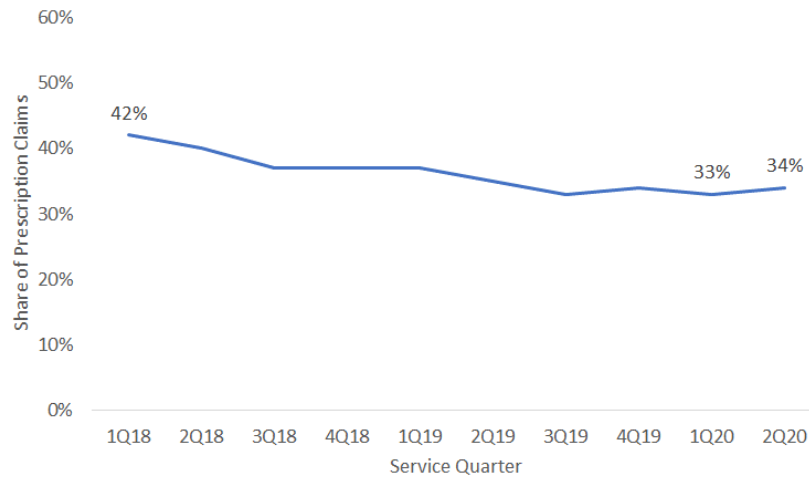
- Could it be that delayed medical treatments have caused an increase in the prescribing patterns?
- Or is it an increase in the prices paid for prescription drugs?

**Metric 15—Share of Medical Costs Attributed to Prescription Drugs**



Pain management, often a critical part of an injured worker’s recovery, has been dependent on the use of opioids in the past. In 2019, opioids represented approximately 20% of all prescription drug costs. However, that share has been on the decline for several years. Metric 16 examines the share of drug claims<sup>11</sup> with at least one opioid prescription. This metric shows that the share had been on the decline since 2018 at an average rate of 3% per quarter, but that decline appears to have come to a halt in 2Q20, with over one out of three drug claims having an opioid prescription.

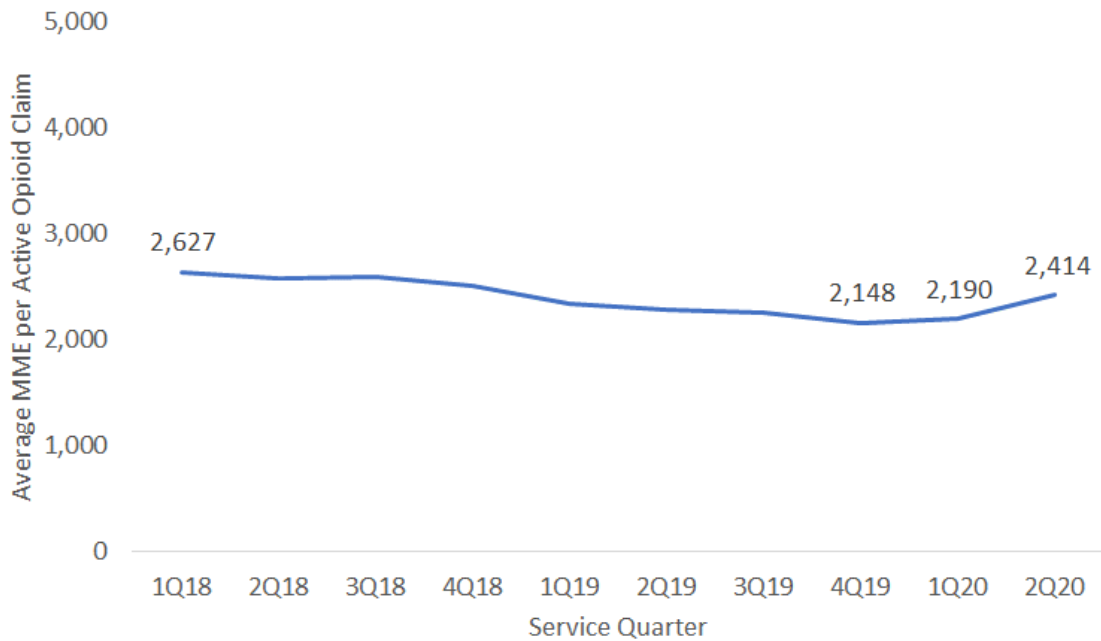
**Metric 16—Share of Drug Claims With at Least One Opioid Prescription**



<sup>11</sup> A claim with at least one prescription during period

The CDC provides a way to convert daily—or hourly—doses of opioids to an equivalent daily dose of morphine. This is done by assigning a conversion factor to each type of drug, thus deriving the Morphine Milligram Equivalents (MME) for any opioid prescription, based on the number of units (pills, for example) prescribed and the drug formulation. MME serves to assess the amount of morphine prescribed. Metric 17, the average MME per opioid claim, shows a decreasing pattern at an average rate of 3% per quarter through the end of 2019 coming to a halt in 2Q20, when the average MME per opioid claim grew by approximately 10%. The changing trend is perhaps a further indication of pain management alternatives slowing down and potentially a result of injuries awaiting more direct and critical treatment.

**Metric 17—Average MME per Opioid Claim**



**CONCLUDING REMARKS**

While it is too early to fully assess the impact that the COVID-19 pandemic will have on the WC system, NCCI is beginning to identify the medical aspects of the system that are likely to be affected. Looking at the first two quarters of 2020, we can identify general demographics and cost characteristics of claims having COVID-19 medical treatments. Furthermore, the measures of the potential indirect impact of the pandemic on medical services provided to all injured workers in the first two quarters of 2020, at first blush, do not show evidence of substantial disruption.

In the coming quarters, NCCI will continue to offer observations regarding the emerging impacts of COVID-19 on workers compensation. Look for this and other COVID-19-related information on NCCI’s COVID-19 Resource Center at [ncci.com/Articles/Pages/COVID-19.aspx](https://ncci.com/Articles/Pages/COVID-19.aspx) in the near future.

**ACKNOWLEDGMENT**

Thanks to Alana Ergui, Amelia Carroll, and Nicole Garcia for research assistance and data visualization.

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