November 9, 2020

CIRCULAR LETTER TO ALL MEMBER COMPANIES

Re: Workers Compensation Insurance
2020 Medical Data Report – North Carolina
Opioid Utilization Supplement – North Carolina

The North Carolina Rate Bureau is pleased to provide you with the 2020 Medical Data Report and the Opioid Utilization Supplement for the state of North Carolina. These reports have been compiled by the National Council on Compensation Insurance to provide insight into the medical cost drivers that impact the workers compensation system in North Carolina.

The reports are based on data collected on a calendar year basis and represent medical transactions for service year 2019. This data considers transactions for medical services provided on all workers compensation claims less than 30 years old from January 1, 2019 through December 31, 2019. The data shows that in-service year 2019, over $254 million was paid on 72,800 claims. This represents 90% of data from the workers compensation premium written, which includes experience for large deductible polices. Lump-sum settlements are not required to be reported. Self-insured data is not included.

This year's Medical Data Report illustrates the breakdown of services by category as follows:
- Physician
- Hospital Outpatient
- Hospital Inpatient
- Ambulatory Surgical Centers
- Drugs
- Durable Medical Equipment, Prosthetics, orthotics and Supplies (DMEPOS)
- Other

The Opioid Utilization Supplement Report includes sections on:
- Prescription Drug Statistics
- Opioid Clam Statistics
- Concurrent Use of Opioids and Benzodiazepines
- Changes in Opioid Prescribing Patterns
- Oxycodone Pill Equivalents
- Claim Distribution by Claim Maturity
- Diagnosis Group and Body System Opioid Claim Experience

We trust that these reports will provide additional insight into the workers compensation cost drivers in North Carolina. Each report is attached for your review.

If you have questions, contact the NCRB Information Center at 919-582-1056 or via email at support@ncrb.org.

Sincerely,

Joanna Biliouris

Chief Operating Officer

JB:ko
Attachments
C-20-32

Medical Data Report

For the state of

NORTH CAROLINA

October 2020

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Introduction

Medical costs have been growing over the last 30 years. Today, in many states, close to 60% of workers compensation benefits are attributed to medical costs. Managing the cost and delivery of medical care is one of the major concerns facing workers compensation stakeholders now and in the foreseeable future. The availability of medical data on workers compensation claims is essential for the pricing of proposed state legislation, assessing impacts of changes to medical fee schedules, and conducting research.

This publication is a data source for regulators and others who are interested in the driving forces behind increasing medical costs in workers compensation claims. The information in this report provides important benchmarks against which cost containment strategies may be measured and gives valuable insight into the medical cost drivers that underlie the financial soundness of the workers compensation system. When making comparisons to the region and countrywide (CW), it is important to note that some states in this report do not have a fee schedule.

Knowing how payments for different services contribute to workers compensation medical benefit costs provides insight into the growth of medical benefits. This report illustrates the breakdown of services by category, namely:

- Physician
- Hospital Outpatient
- Hospital Inpatient
- Ambulatory Surgical Centers
- Drugs
- Durable Medical Equipment, Prosthetics, Orthotics and Supplies (DMEPOS)
- Other

The report drills down into these categories to show which procedures represent the greatest share of payments and which are performed the most.

Additionally, this report provides detail on payments for prescription drugs, including which drugs are being prescribed the most and which ones represent the greatest share of drug payments, as well as information on controlled substances.

There is one important caveat: Information in this report may not coincide with an analysis of a medical fee schedule change performed in the future. An analysis of a medical fee schedule change requires evaluation of the specific procedures covered by the fee schedule, which may be different from how payments are categorized in this report.

The data contained in this report represents medical transactions for Service Year 2019 (medical services delivered from January 1, 2019, to December 31, 2019), except where otherwise noted. Workers compensation insurance carriers must report paid medical transactions if they write at least 1% of the market share in any one state over the most recent three years for which NCCI is the rating or advisory organization. Once a carrier meets the eligibility criteria, the carrier is required to report for all applicable states in which it writes workers compensation insurance, even if an individual state's market share is below the 1% threshold. All carriers within an insurance group are required to report, regardless of whether they write less than 1% of the market share in the state.

For the state of North Carolina in Service Year 2019, the reported number of transactions was more than 1,559,600, with more than $254,126,800 paid, for more than 72,800 claims. This represents data from 90% of the workers compensation premium written, which includes experience for large-deductible policies. Bulk payments and lump-sum settlements are not required to be reported. Also, self-insured data is not included.

Unless otherwise noted, the source for all data in this report is:

- NCCI's Medical Data Call, Service Year 2019
- Region includes data from the following states: AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV.
- Countrywide includes data from the following states: 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

Additional information regarding the data underlying this report is available in the Appendix.

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Medical Cost Statistics

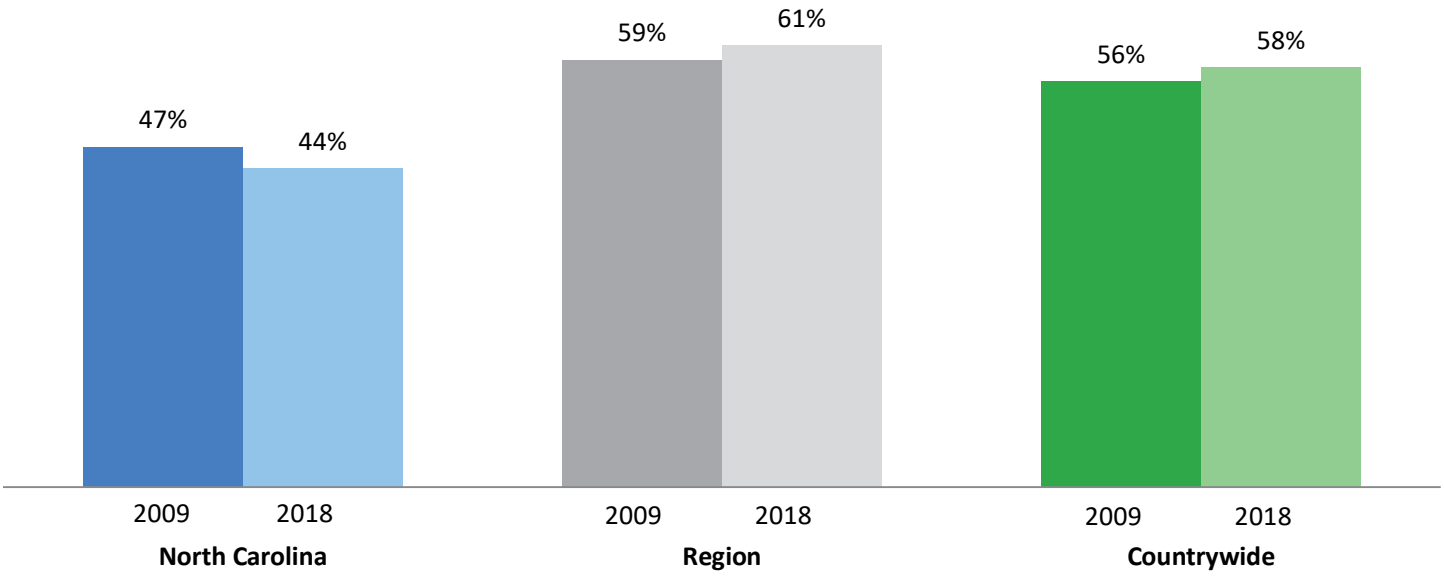
Traditional workers compensation policies cover two types of benefit payments: medical benefits and indemnity (lost wages) benefits.

Of the two, medical benefits resulting from a work-related injury or disease are the leading cost drivers for workers compensation claims on a countrywide basis. Because this is a relative measure and benefits for both indemnity and medical may vary from state to state, the share of medical benefit costs may vary across states. In particular, the medical share in a state may be large because the indemnity benefits are relatively less prominent.

Chart 1 displays the medical percentage of total benefit costs for North Carolina, the region, and countrywide for Accident Years 2009 and 2018.

Chart 1

Medical Share of Total Benefit Costs by Accident Year



Source: NCCI's Calendar-Accident Year Call for Compensation Experience. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data includes 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, TX, UT, VA, VT, and WV.

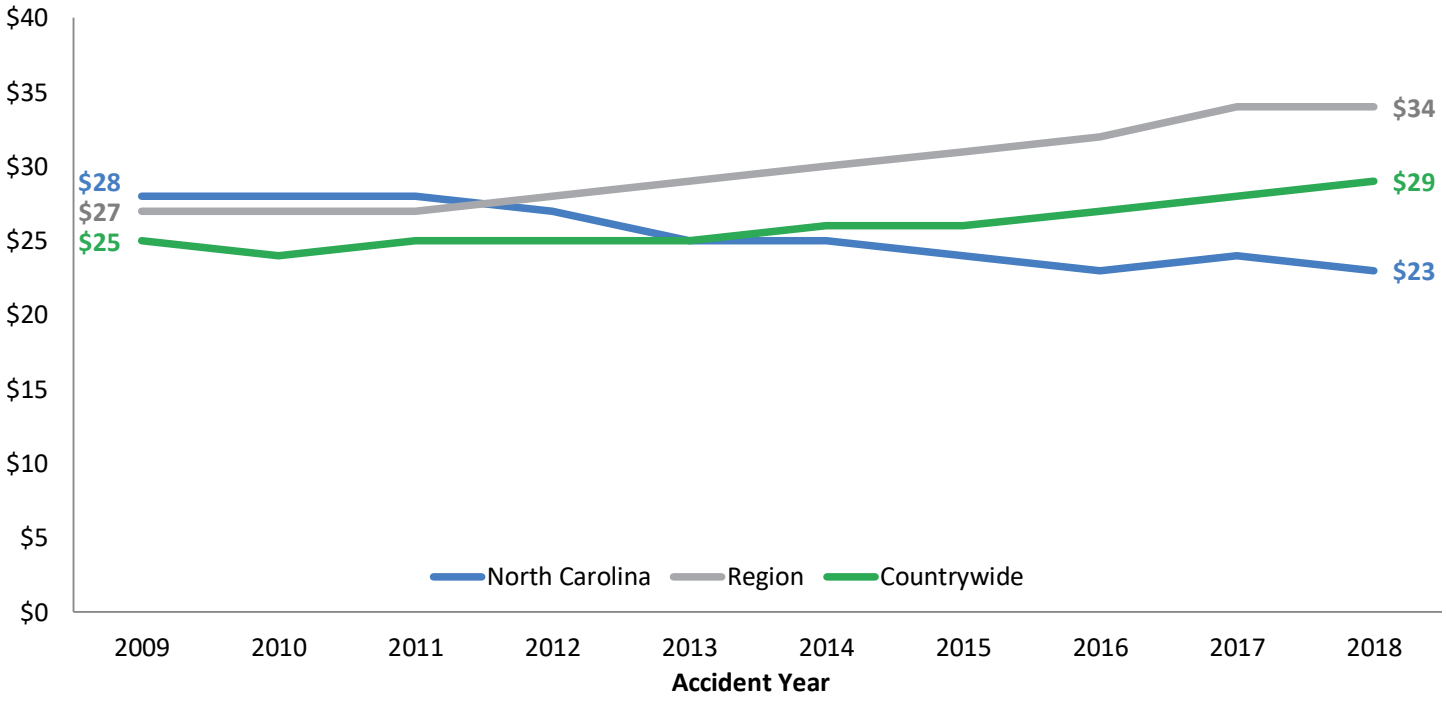
The countrywide overall medical average cost per claim has seen moderate increases in recent years, averaging about 2% from Accident Years 2009 to 2018; this has increased at a similar rate as the United States Personal Healthcare Spending per capita. [1] Chart 2 displays the historical overall medical average cost per case (per lost-time claim) for the most recent 10 accident years. Results are displayed for North Carolina, the region, and countrywide.

Medical losses are at historical benefit levels and historical dollar values—meaning that no adjustment for inflation or changes in benefits has been made. Since the data is aggregated for all medical losses by accident year, the results shown in this chart provide a high-level perspective of the average medical cost per case.

This chart illustrates how North Carolina compares to the regional and countrywide average for each individual accident year and allows for the comparison of the growth in average medical costs.

Chart 2

Overall Medical Average Cost per Lost-Time Claim (in 000s)



Source: NCCI's Calendar-Accident Year Call for Compensation Experience. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data 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, TX, UT, VA, VT, and WV.

[1] **State of the Line Report, *Annual Issues Symposium***, May 2020, www.ncci.com/Articles/Documents/AIS2020-SOTL-Presentation.pdf.

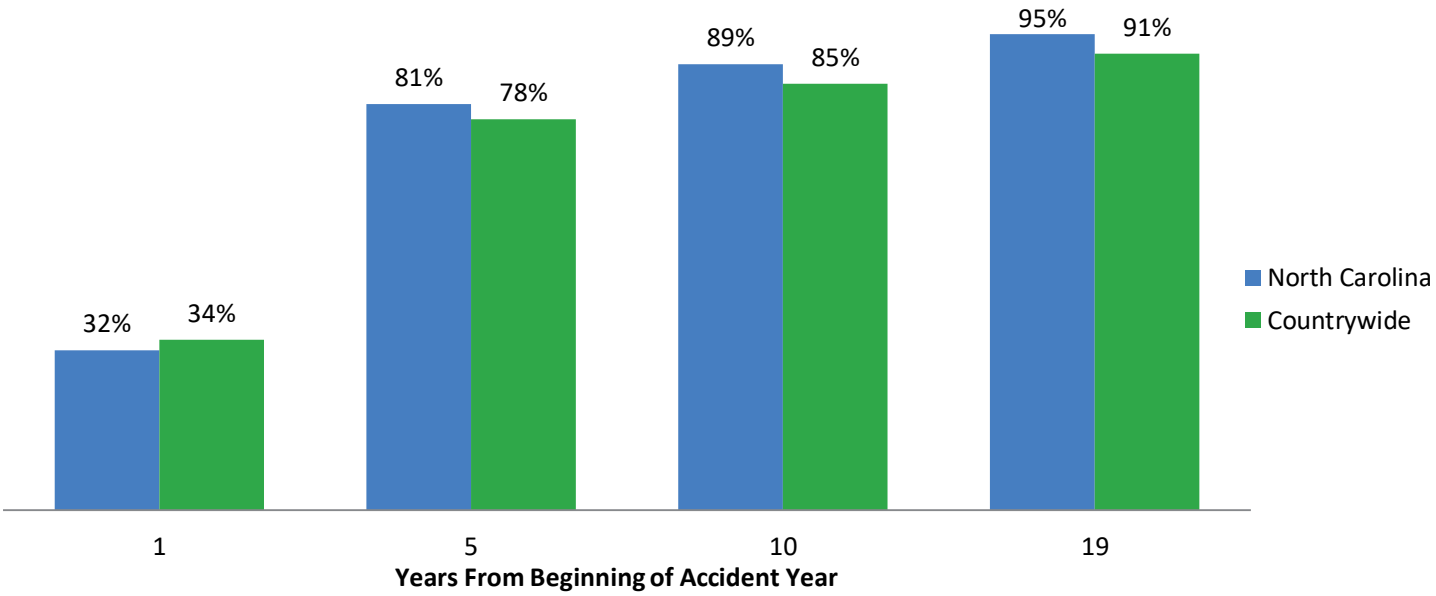
One factor that impacts medical costs is the time over which medical services are used. Payments on a workers compensation claim often continue for many years. NCCI research has found that it is likely that about 10% of the cost of medical benefits for workplace injuries that occur this year will be for services provided more than two decades into the future.

A key determinant driving payment patterns for medical services is the effectiveness of dispute resolution processes, settlement practices, and statutory provisions for medical benefits. An aging workforce and continued changes in rules for Medicare set-asides have created a shifting environment for the settlement of claims and, particularly, medical benefits.

Chart 3 shows the percentage of medical benefits paid (including medical settlements) at different claim maturities for North Carolina and countrywide.

Chart 3

Percentage of Medical Paid by Claim Maturity



Source: NCCI's Calendar-Accident Year Call for Compensation Experience. Countrywide data includes 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, OK, OR, RI, SC, SD, TN, UT, VA, and VT.

Knowing how payments for different medical services contribute to workers compensation medical benefit costs provides insight into the growth in medical benefits.

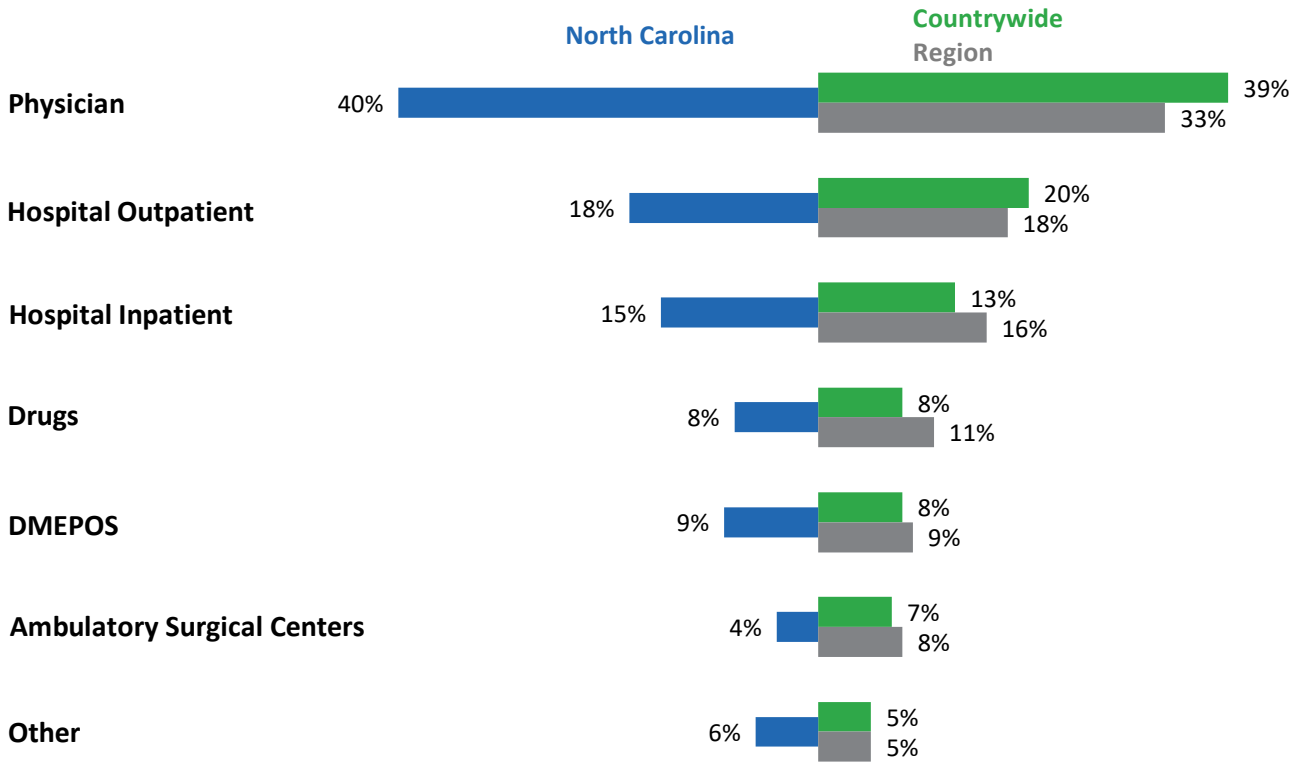
Payments are categorized as Drugs; DME, Supplies, and Implants; and Other (includes home health, transportation, vision, and dental services), based on the procedure code reported. Payments are mapped to these categories regardless of who provides the service or where the service is performed. For the remaining categories—Physicians, Hospital Outpatient, Hospital Inpatient, and Ambulatory Surgical Centers (ASC)—NCCI relies on a combination of:

- Provider taxonomy code—identifies the type of provider that billed for, and is being paid for, a medical service; see Glossary
- Procedure code—alphanumeric code used to identify procedures performed by medical professionals
- Place of services—alphanumeric code used to identify places where procedures were performed (e.g., physician's office or ambulatory surgical center)

Chart 4 displays the distribution of medical payments by type of service.

Chart 4

Distribution of Medical Payments



Physicians

In the 1970s, fewer than a dozen states had physician fee schedules in place. In the 1990s, several states established such schedules. Today, few states remain without a physician fee schedule. Recent changes in the schedules indicate greater attention to provisions that often seek to balance cost containment with service provider availability. NCCI's most recent study, "The Impact of Fee Schedule Updates on Physician Payments" (December 2018), shows that:

- Approximately 80% of any change in the maximum allowable reimbursement (MAR) for a physician service will be realized as a change in prices paid
- Most of the impact of a MAR change on prices paid is realized within one year from the date of a fee schedule change

One measure of workers compensation medical costs is a comparison of current payments to the Medicare rates adjusted for your state.

The chart below shows the average percentage of Medicare schedule reimbursement[2] amounts for physician payments by category for North Carolina, the region, and countrywide. Note that "all physician services" in Chart 5 below refers only to the five categories listed in the chart, and the state comparison reflects Medicare's geographic adjustments. In North Carolina, 85% of "all physician services" payments are included in the chart below.

Chart 5

Physician Payments as a Percentage of Medicare

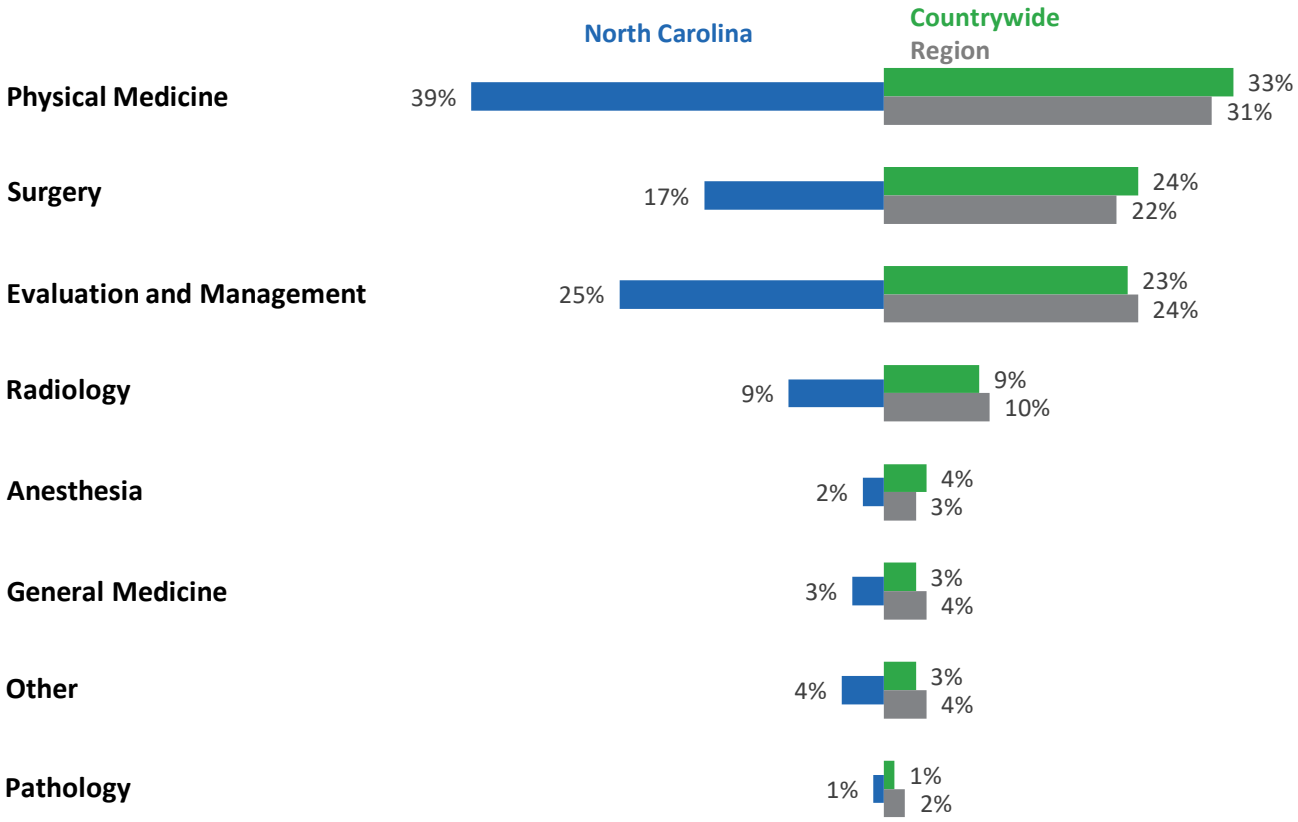
Physician Service Category	North Carolina	Region	Countrywide
General and Physical Medicine	116%	109%	132%
Surgery	164%	204%	270%
Evaluation and Management	128%	120%	143%
Radiology	181%	184%	228%
Anesthesia	N/A[3]	211%	305%
All Physician Services	**132%**	**136%**	**168%**

[2] The calculation for Surgery takes into account Medicare's endoscopic procedures reimbursement rules.
[3] A majority of anesthesia services in North Carolina are made up of codes ANT01 and ANT02 which are not recognized by Medicare.

Chart 6 displays the distribution of physician payments by service category for North Carolina, the region, and countrywide.

Chart 6

Distribution of Physician Payments by AMA Service Category



Recently, NCCI conducted a review of physician costs in workers compensation as compared to group health (GH). Results[4] show that WC physician costs are 77% higher than GH in general, with variation across states ranging from 0 to 200%. The difference in costs for physician services is due to both prices and utilization of services. Most notably, physical medicine services in WC are almost three times the costs of physical medicine services in GH, largely due to the number of services provided.

Physicians typically use current procedure terminology (CPT) codes to identify the services that they provide to claimants. These codes are specific and provide detailed information on what service was performed. The charts below display the top 10 procedure codes reported by physicians for the following service categories: surgery, radiology, physical and general medicine, and evaluation and management. A brief description of each procedure code is displayed in the corresponding table below each chart.

Except for physical & general medicine codes, the charts also include the average amount paid per transaction (PPT) for these codes in North Carolina, in the region, and countrywide. The average PPT is calculated by taking the total payments for the procedure code and dividing by the number of transactions for the procedure code. Other fields, such as the secondary paid procedure code, modifier, diagnosis code, place of service, and quantity/units, may need to be considered when evaluating average payments per service. The charts for the top 10 physical & general medicine codes include the average amount paid per unit (PPU) for the codes in North Carolina, in the region, and countrywide. The PPU is calculated by taking the total payments for the procedure code and dividing by the number of units for the procedure code. For these codes, a unit is typically a measurement of time (15-minute increment, 30-minute increment, 1-hour increment, etc.) but can also be one transaction. The procedure code description will indicate the unit measurement.

The Top 10 charts rank the procedure codes for each service category using two different methods. The first method ranks procedure codes by total payments. Procedure codes are sorted from highest total payments to lowest total payments. The procedure code with the highest amount paid is ranked first, the procedure code with the second highest amount paid is ranked second, and so on. This method of ranking shows those procedures that represent the highest percentage share of payments.

The second method ranks procedure codes by total count of transactions. The procedure code with the highest total transaction count is ranked first, the procedure code with the second highest total transaction count is ranked second, and so on. This method reveals the most frequently used procedures.

Additional charts show time until first treatment. Time to treatment (TTT) is a measure of the availability of medical services and is measured by the number of days between the date of injury and the date on which the worker first received medical services.

[4] Lipton, B. [Channel NCCI]. (2019, May 23). *Work Comp vs. Group Health-- The Price We Pay* [Video File]. Retrieved from https:/youtu.be/fb3tnbQoMSY.

In North Carolina, physician payments for anesthesia services provided in 2019, comprise 2% of physician payments, compared to 3% in the region and 4% countrywide.

Chart 7

Top Anesthesia Procedure Codes by Amount Paid

Code	Paid Share	Description
ANT01	59.5%	Anesthesia administered by anesthesiologist, per minute
ANT02	32.7%	Anesthesia administered by certified registered nurse anesthetist (CRNA), per minute
All Other Anesthesia Codes	7.8%	

Chart 8

Top Anesthesia Procedure Codes by Transaction Counts

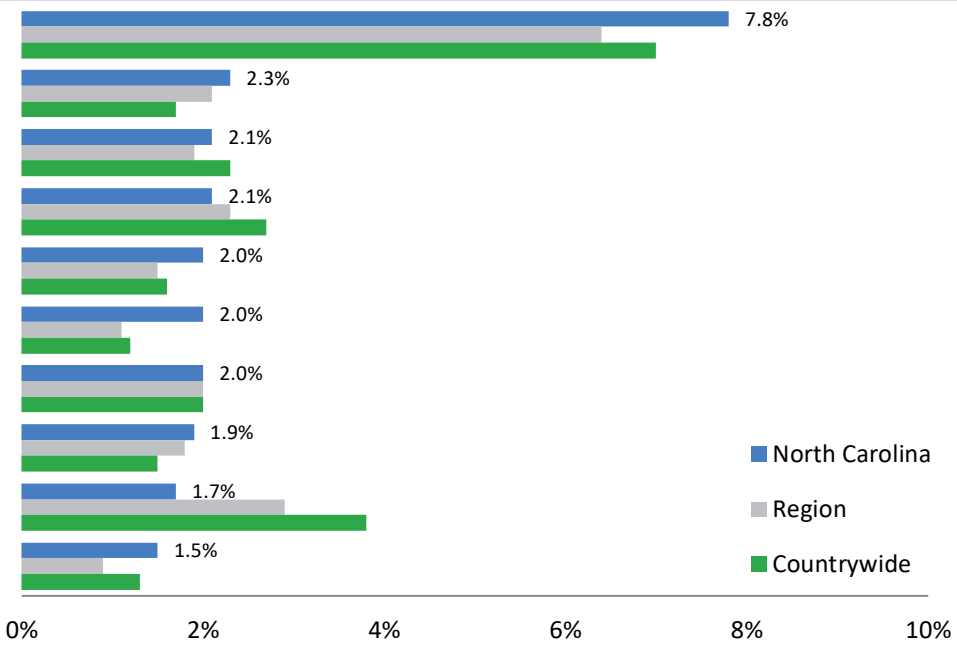
Code	Transaction Share	Description
ANT01	52.7%	Anesthesia administered by anesthesiologist, per minute
ANT02	42.2%	Anesthesia administered by certified registered nurse anesthetist (CRNA), per minute
All Other Anesthesia Codes	5.1%	

In North Carolina, physician payments for surgery services provided in 2019 are, on average, 164% of Medicare-scheduled reimbursement amounts, compared to 204% in the region and 270% countrywide. Payments for these services comprise 17% of physician payments, compared to 22% in the region and 24% countrywide.

Chart 9

Top 10 Surgery Procedure Codes by Amount Paid

	Average PPT		
Code	**NC**	**Region**	**CW**
29827	$1,335	$1,700	$2,107
64483	$349	$452	$559
29823	$454	$745	$1,001
29881	$824	$1,035	$1,498
29824	$529	$674	$831
29828	$822	$1,003	$1,199
22551	$2,007	$2,518	$3,947
20610	$83	$101	$131
29826	$230	$656	$959
23430	$799	$993	$1,211

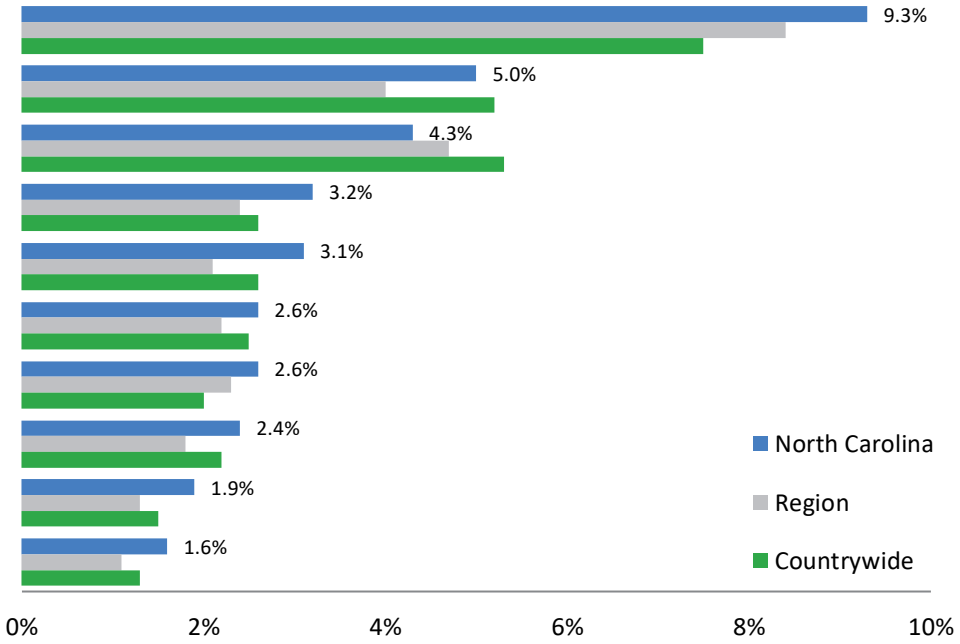


Code	Description
29827	Arthroscopy, shoulder, surgical; with rotator cuff repair
64483	Injection(s), anesthetic agent, and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or computed tomography (CT)); lumbar or sacral, single level
29823	Arthroscopy, shoulder, surgical; debridement, extensive
29881	Arthroscopy, knee, surgical; with meniscectomy (medial or lateral, including any meniscal shaving), including debridement/shaving of articular cartilage
29824	Arthroscopy, shoulder, surgical; distal claviculectomy including distal articular surface (Mumford procedure)
29828	Arthroscopy, shoulder, surgical; biceps tenodesis
22551	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy, and decompression of spinal cord and/or nerve roots; cervical below C2
20610	Arthrocentesis, aspiration, and/or injection; major joint or bursa (e.g., shoulder, hip, knee, joint, subacromial bursa)
29826	Arthroscopy, shoulder, surgical; decompression of subacromial space with partial acromioplasty, with coracoacromial ligament (i.e., arch) release, when performed
23430	Tenodesis of long tendon of biceps

Chart 10

Top 10 Surgery Procedure Codes by Transaction Counts

Code	Average PPT NC	Region	CW
20610	$83	$101	$131
12001	$108	$134	$180
36415	$4	$9	$11
64415	$124	$170	$285
29826	$230	$656	$959
12002	$129	$156	$212
64483	$349	$452	$559
29827	$1,335	$1,700	$2,107
29823	$454	$745	$1,001
29824	$529	$674	$831

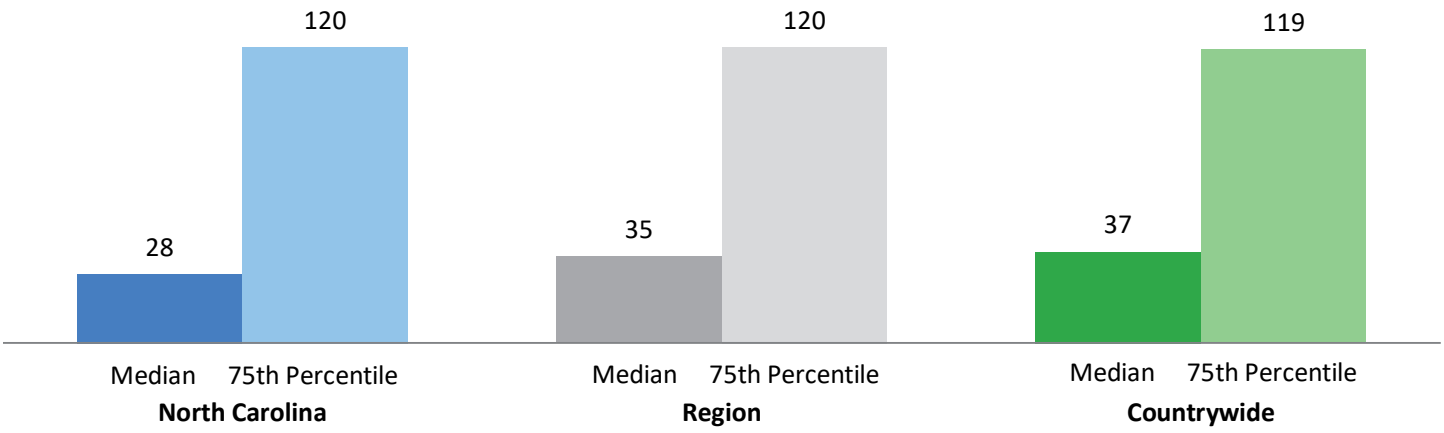


Code	Description
20610	Arthrocentesis, aspiration, and/or injection; major joint or bursa (e.g., shoulder, hip, knee, joint, subacromial bursa)
12001	Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk, and/or extremities (including hands and feet); 2.5 cm or less
36415	Collection of venous blood by venipuncture
64415	Injection, anesthetic agent; brachial plexus, single
29826	Arthroscopy, shoulder, surgical; decompression of subacromial space with partial acromioplasty, with coracoacromial ligament (i.e., arch) release, when performed
12002	Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk, and/or extremities (including hands and feet); 2.6 cm to 7.5 cm
64483	Injection(s), anesthetic agent, and/or steroid, transforaminal epidural, with imaging guidance (fluoroscopy or computed tomography (CT)); lumbar or sacral, single level
29827	Arthroscopy, shoulder, surgical; with rotator cuff repair
29823	Arthroscopy, shoulder, surgical; debridement, extensive
29824	Arthroscopy, shoulder, surgical; distal claviculectomy including distal articular surface (Mumford procedure)

Chart 11 shows the median and 75th percentile[5] time until first treatment for major surgery for North Carolina, the region, and countrywide. No adjustment has been made to account for injuries that may take time to develop such as an occupational disease, which may extend the time between the date a work-related injury or disease is reported and the first medical treatment takes place.

Chart 11

Time Until First Treatment for Major Surgery[6] (in Days)



Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

[5] The median is the TTT where one-half of all TTT values are higher and one-half are lower. This statistic is less affected by extremely low or extremely high values. The 75th percentile is the TTT where 75% of all TTT values are lower and 25% are higher. For example, Chart 11 indicates that out of 100 claimants, 75 will receive a major surgery within 120 days of their accident date. Comparing the median to the 75th percentile illustrates the variation in TTT between claims.

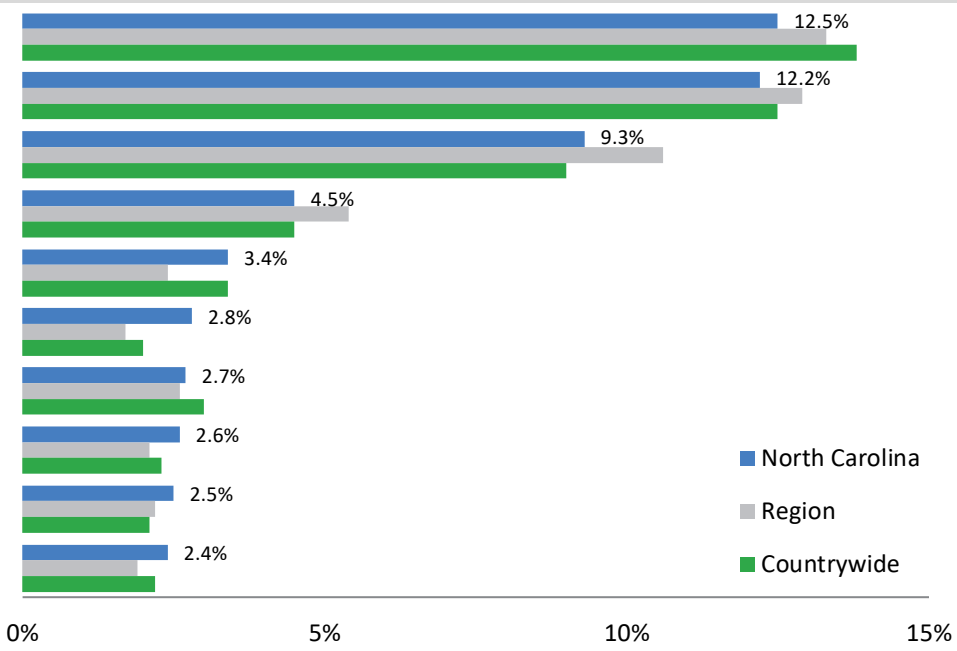
[6] A service is classified as "surgical" if it falls within the surgical category as defined by the AMA. A service is further classified as "major surgery" if it has a global follow up period of 90 days as defined by the Centers for Medicare & Medicaid Services and is not an injection.

In North Carolina, physician payments for radiology services provided in 2019 are, on average, 181% of Medicare-scheduled reimbursement amounts, compared to 184% in the region and 228% countrywide. Payments for these services comprise 9% of physician payments, compared to 10% in the region and 9% countrywide.

Chart 12

Top 10 Radiology Procedure Codes by Amount Paid

	Average PPT		
Code	**NC**	**Region**	**CW**
73221	$400	$426	$496
73721	$402	$426	$487
72148	$370	$419	$473
72141	$368	$416	$467
73222	$601	$540	$620
73140	$46	$44	$52
73030	$43	$43	$58
73610	$44	$45	$55
72100	$53	$53	$64
73110	$50	$49	$60

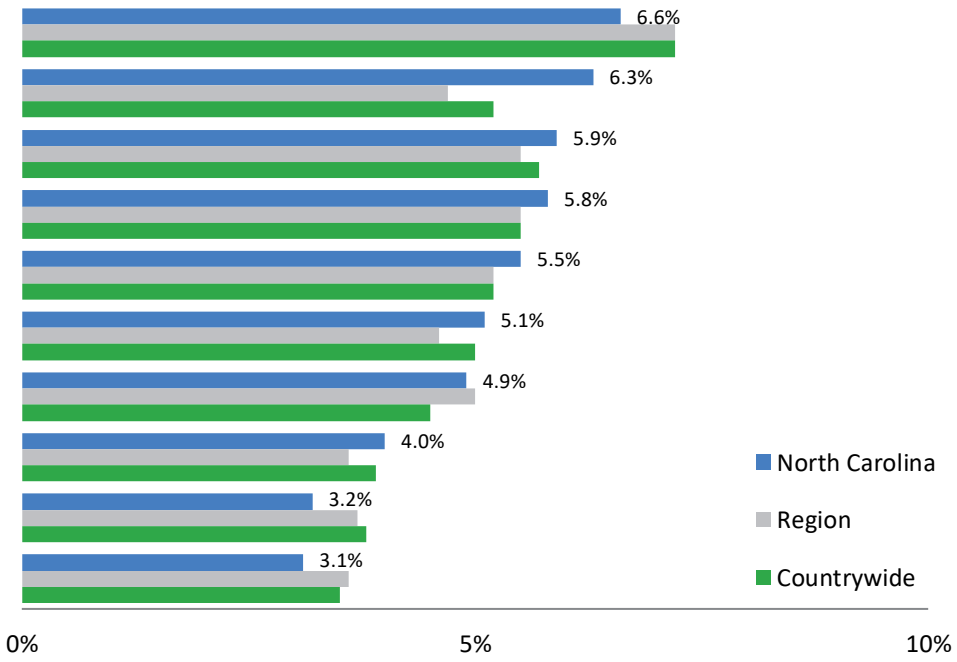


Code	Description
73221	Magnetic resonance (e.g., proton) imaging, any joint of upper extremity; without contrast material
73721	Magnetic resonance (e.g., proton) imaging, any joint of lower extremity; without contrast material
72148	Magnetic resonance (e.g., proton) imaging, spinal canal and contents, lumbar; without contrast material
72141	Magnetic resonance (e.g., proton) imaging, spinal canal and contents, cervical; without contrast material
73222	Magnetic resonance (e.g., proton) imaging, any joint of upper extremity; with contrast material
73140	Radiologic examination, finger(s); minimum of 2 views
73030	Radiologic examination, shoulder; complete minimum of 2 views
73610	Radiologic examination, ankle; complete minimum of 3 views
72100	Radiologic examination, spine, lumbosacral; 2 or 3 views
73110	Radiologic examination, wrist; complete minimum of 3 views

Chart 13

Top 10 Radiology Procedure Codes by Transaction Counts

Code	Average PPT NC	Region	CW
73030	$43	$43	$58
73140	$46	$44	$52
73610	$44	$45	$55
73630	$43	$42	$52
73130	$41	$42	$52
73110	$50	$49	$60
72100	$53	$53	$64
73562	$52	$51	$62
73221	$400	$426	$496
73721	$402	$426	$487

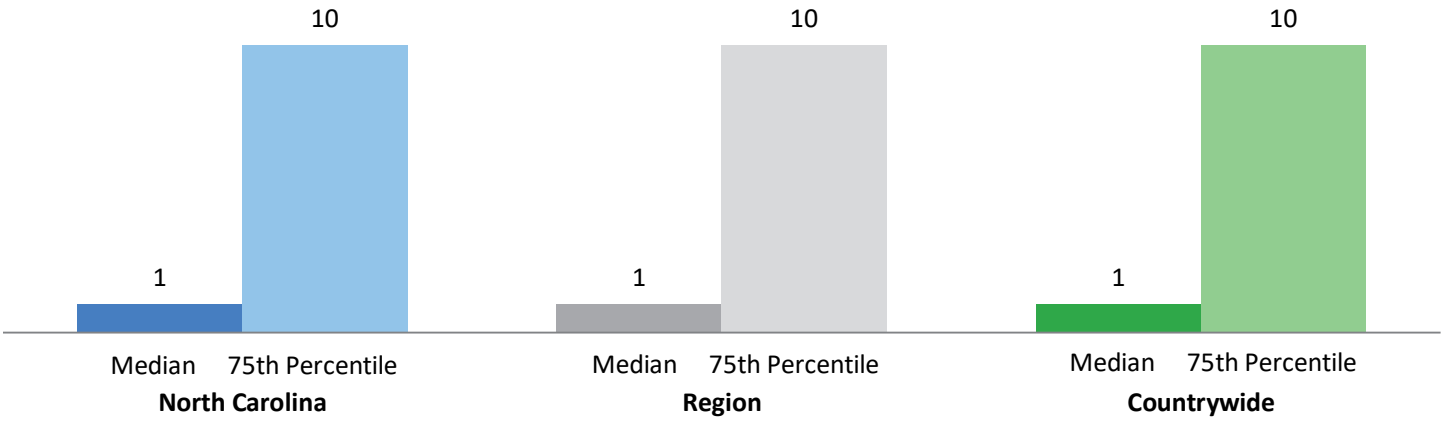


Code	Description
73030	Radiologic examination, shoulder; complete minimum of 2 views
73140	Radiologic examination, finger(s); minimum of 2 views
73610	Radiologic examination, ankle; complete minimum of 3 views
73630	Radiologic examination, foot; complete minimum of 3 views
73130	Radiologic examination, hand; minimum of 3 views
73110	Radiologic examination, wrist; complete minimum of 3 views
72100	Radiologic examination, spine, lumbosacral; 2 or 3 views
73562	Radiologic examination, knee; 3 views
73221	Magnetic resonance (e.g., proton) imaging, any joint of upper extremity; without contrast material
73721	Magnetic resonance (e.g., proton) imaging, any joint of lower extremity; without contrast material

Chart 14 shows the median and 75th percentile time until first treatment for radiology procedures for North Carolina, the region, and countrywide.

Chart 14

Time Until First Treatment for Radiology (in Days)



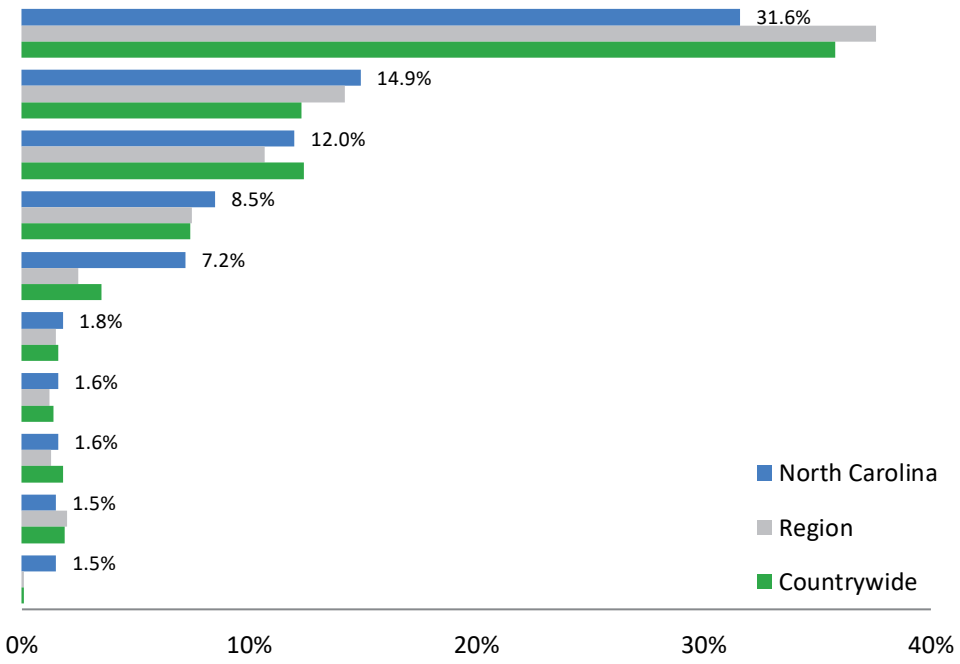
Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

In North Carolina, physician payments for physical and general medicine services provided in 2019 are, on average, 116% of Medicare-scheduled reimbursement amounts, compared to 109% in the region and 132% countrywide. Payments for these services comprise 42% of physician payments, compared to 35% in the region and 36% countrywide.

Chart 15

Top 10 Physical and General Medicine Procedure Codes by Amount Paid

	Average PPU		
Code	**NC**	**Region**	**CW**
97110	$35	$34	$42
97530	$42	$37	$45
97140	$32	$31	$38
97112	$38	$35	$42
97545	$221	$139	$186
97161	$106	$103	$118
97162	$106	$108	$124
97546	$88	$67	$83
97014	$25	$21	$23
WH100	$421	$936	$486

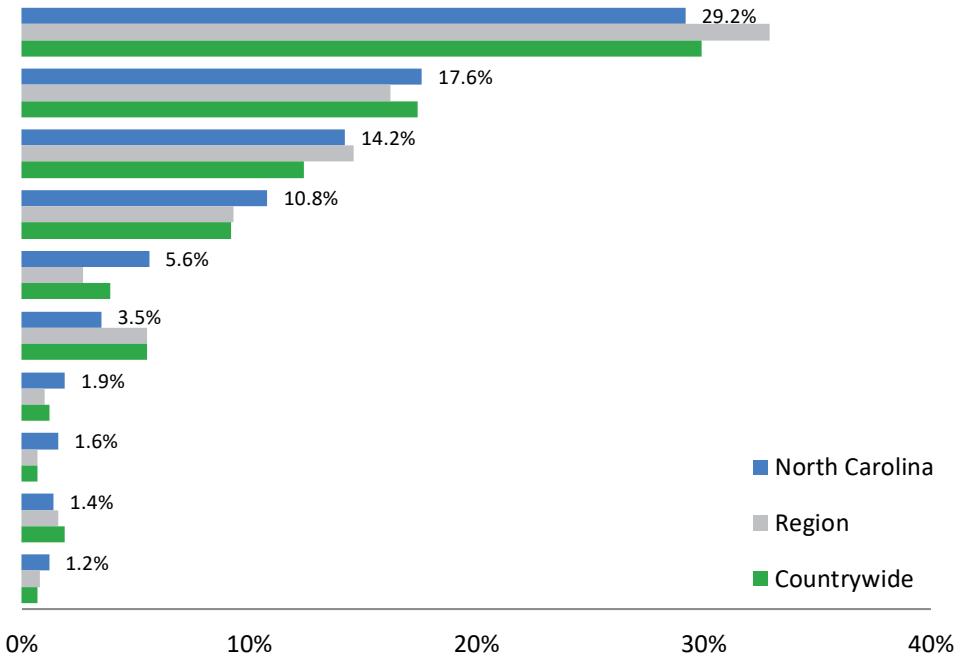


Code	Description
97110	Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion, and flexibility
97530	Therapeutic activities, direct (one-on-one) patient contact by the provider (use of dynamic activities to improve functional performance), each 15 minutes
97140	Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes
97112	Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities
97545	Work hardening/conditioning; initial 2 hours
97161	Physical therapy evaluation of low complexity; typically, 20 minutes are spent with the patient and/or family
97162	Physical therapy evaluation of moderate complexity; typically, 30 minutes are spent with the patient and/or family
97546	Work hardening/conditioning; each additional hour
97014	Application of a modality to 1 or more areas; electrical stimulation (unattended)
WH100	Work hardening

Chart 16

Top 10 Physical and General Medicine Procedure Codes by Transaction Counts

Code	Average PPU NC	Region	CW
97110	$35	$34	$42
97140	$32	$31	$38
97530	$42	$37	$45
97112	$38	$35	$42
97010	$10	$14	$17
97014	$25	$21	$23
97545	$221	$139	$186
97016	$15	$24	$23
97035	$17	$17	$23
97535	$39	$36	$43

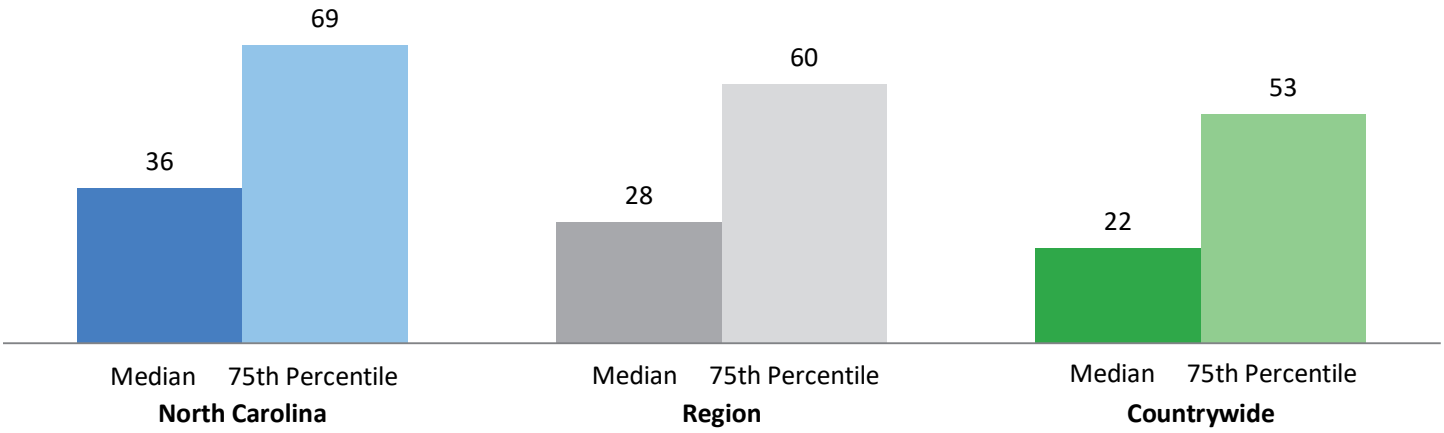


Code	Description
97110	Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion, and flexibility
97140	Manual therapy techniques (e.g., mobilization/manipulation, manual lymphatic drainage, manual traction), 1 or more regions, each 15 minutes
97530	Therapeutic activities, direct (one-on-one) patient contact by the provider (use of dynamic activities to improve functional performance), each 15 minutes
97112	Therapeutic procedure, 1 or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities
97010	Application of a modality to 1 or more areas; hot or cold packs
97014	Application of a modality to 1 or more areas; electrical stimulation (unattended)
97545	Work hardening/conditioning; initial 2 hours
97016	Application of a modality to 1 or more areas; vasopneumatic devices
97035	Application of a modality to 1 or more areas; ultrasound, each 15 minutes
97535	Self-care/home management training, direct one-on-one contact, each 15 minutes

Chart 17 shows the median and 75th percentile time until first treatment for physical and general medicine procedures for North Carolina, the region, and countrywide.

Chart 17

Time Until First Treatment for Physical and General Medicine (in Days)



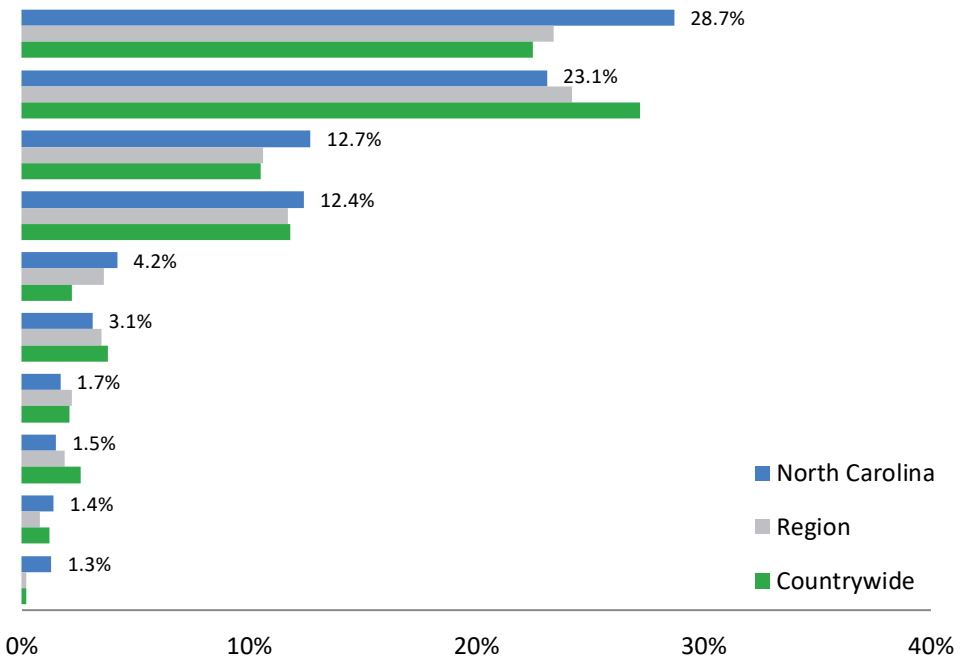
Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

In North Carolina, physician payments for evaluation and management services provided in 2019 are, on average, 128% of Medicare-scheduled reimbursement amounts, compared to 120% in the region and 143% countrywide. Payments for these services comprise 25% of physician payments, compared to 24% in the region and 23% countrywide.

Chart 18

Top 10 Evaluation and Management Procedure Codes by Amount Paid

	Average PPT		
Code	**NC**	**Region**	**CW**
99214	$130	$123	$146
99213	$90	$85	$103
99204	$202	$189	$221
99203	$129	$127	$152
99455	$171	$130	$202
99284	$196	$202	$277
99285	$305	$298	$408
99283	$114	$128	$177
99244	$315	$232	$281
99358	$121	$180	$176

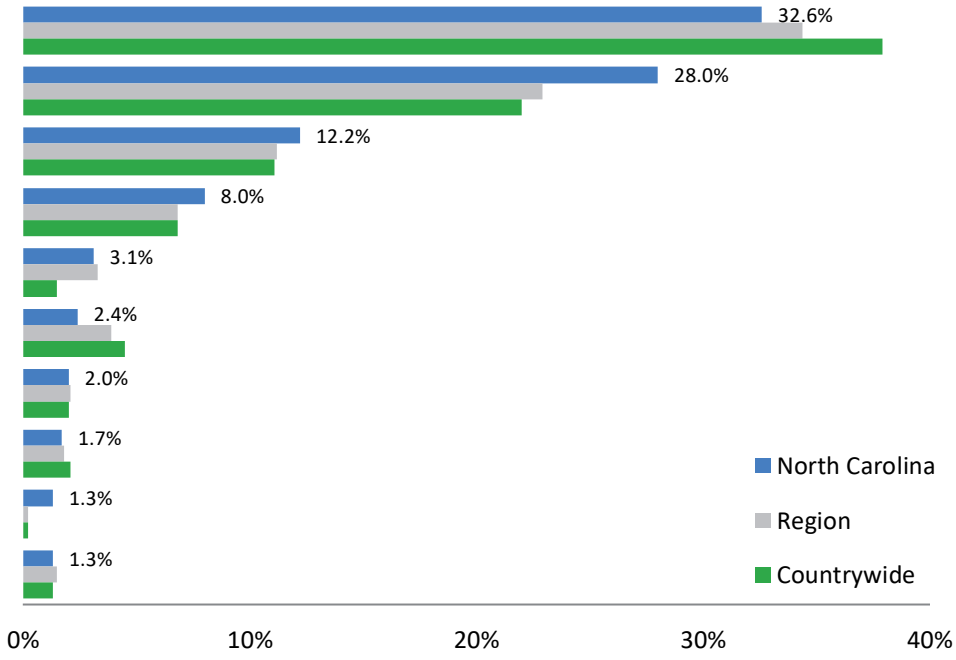


Code	Description
99214	Office or other outpatient visit for the evaluation and management of an established patient. Usually the presenting problem(s) are of moderate to high severity. Physicians typically spend 25 minutes face-to-face with the patient and/or family.
99213	Office or other outpatient visit for the evaluation and management of an established patient. Usually the presenting problem(s) are of low to moderate severity. Physicians typically spend 15 minutes face-to-face with the patient and/or family.
99204	Office or other outpatient visit for the evaluation and management of a new patient. Usually the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes face-to-face with the patient and/or family.
99203	Office or other outpatient visit for the evaluation and management of a new patient. Usually the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes face-to-face with the patient and/or family.
99455	Work related or medical disability examination by the treating physician.
99284	Emergency department visit. Usually the presenting problem(s) are of high severity and require urgent evaluation by the physician but do not pose an immediate significant threat to life or physiologic function.
99285	Emergency department visit. Usually the presenting problem(s) are of high severity and pose an immediate significant threat to life or physiologic function.
99283	Emergency department visit. Usually the presenting problem(s) are of moderate severity.
99244	Office consultation for a new or established patient. Usually the presenting problem(s) are of moderate to high severity. Physicians typically spend 60 minutes face-to-face with the patient and/or family.
99358	Prolonged evaluation and management service before and/or after direct patient care; first hour

Chart 19

Top 10 Evaluation and Management Procedure Codes by Transaction Counts

Code	Average PPT NC	Region	CW
99213	$90	$85	$103
99214	$130	$123	$146
99203	$129	$127	$152
99204	$202	$189	$221
99455	$171	$130	$202
99212	$53	$55	$67
99284	$196	$202	$277
99283	$114	$128	$177
99358	$121	$180	$176
99232	$92	$86	$102

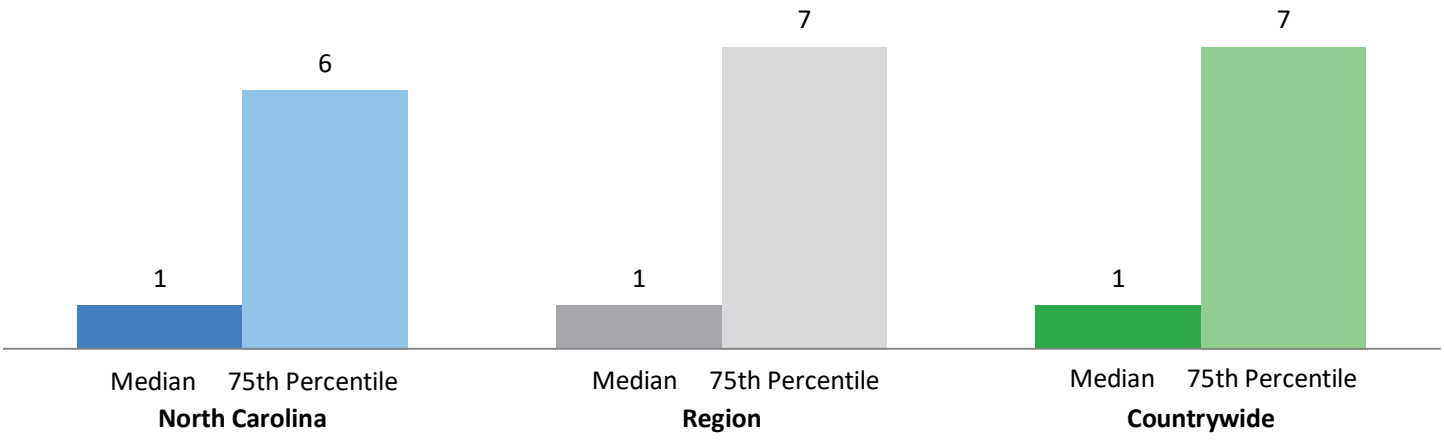


Code	Description
99213	Office or other outpatient visit for the evaluation and management of an established patient. Usually the presenting problem(s) are of low to moderate severity. Physicians typically spend 15 minutes face-to-face with the patient and/or family.
99214	Office or other outpatient visit for the evaluation and management of an established patient. Usually the presenting problem(s) are of moderate to high severity. Physicians typically spend 25 minutes face-to-face with the patient and/or family.
99203	Office or other outpatient visit for the evaluation and management of a new patient. Usually the presenting problem(s) are of moderate severity. Physicians typically spend 30 minutes face-to-face with the patient and/or family.
99204	Office or other outpatient visit for the evaluation and management of a new patient. Usually the presenting problem(s) are of moderate to high severity. Physicians typically spend 45 minutes face-to-face with the patient and/or family.
99455	Work related or medical disability examination by the treating physician.
99212	Office or other outpatient visit for the evaluation and management of an established patient. Usually the presenting problem(s) are self limited or minor. Physicians typically spend 10 minutes face-to-face with the patient and/or family.
99284	Emergency department visit. Usually the presenting problem(s) are of high severity and require urgent evaluation by the physician but do not pose an immediate significant threat to life or physiologic function.
99283	Emergency department visit. Usually the presenting problem(s) are of moderate severity.
99358	Prolonged evaluation and management service before and/or after direct patient care; first hour
99232	Subsequent hospital care per day for the evaluation and management of a patient. Usually the patient is responding inadequately to therapy or has developed a minor complication. Physicians typically spend 25 minutes at the bedside and on the patient's hospital floor or unit.

Chart 20 shows the median and 75th percentile time until first treatment for evaluation and management procedures for North Carolina, the region, and countrywide.

Chart 20

Time Until First Treatment for Evaluation and Management (in Days)



Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

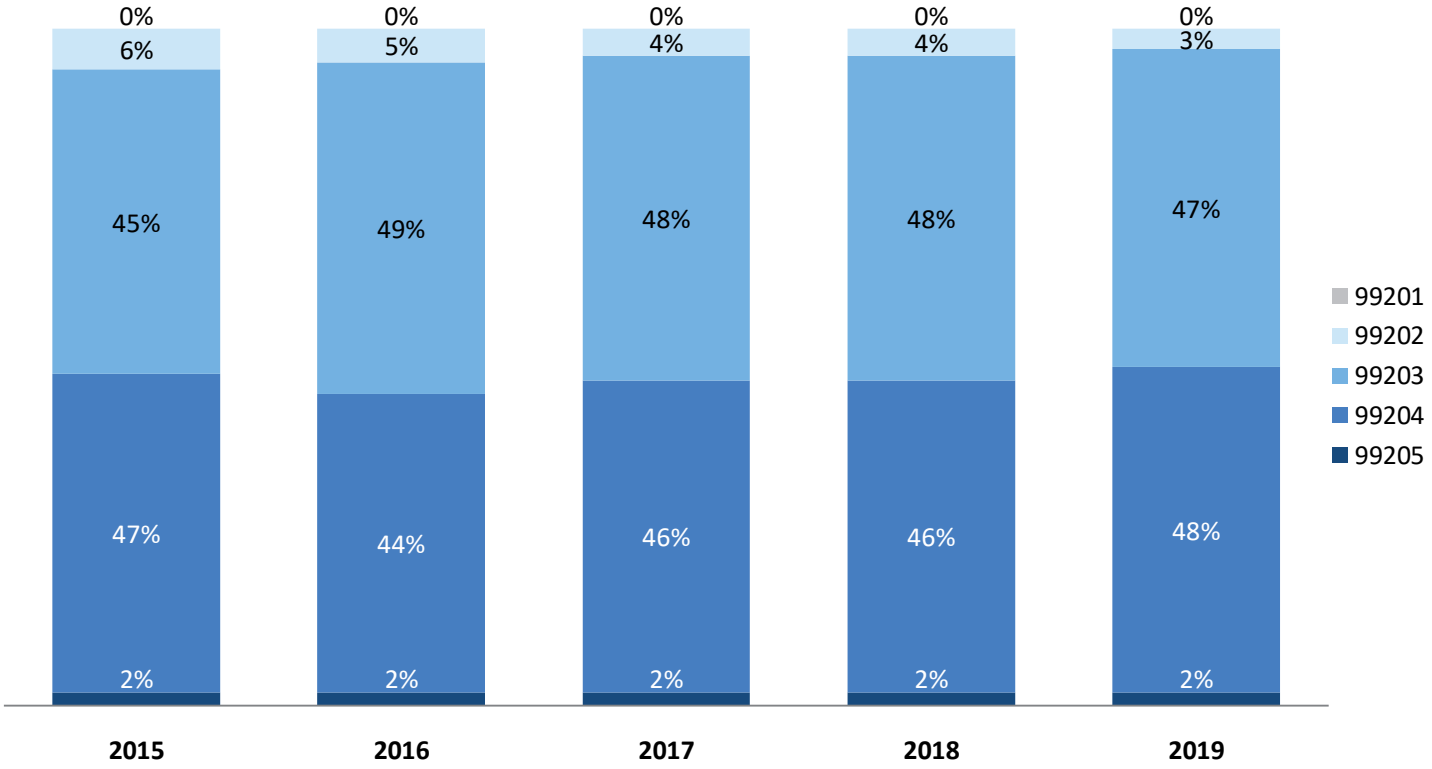
Evaluation and Management services consist largely of office or outpatient visits for a new patient or an established patient.

There are five periods of time spent with a *new* patient, ranging from 10 minutes for Procedure Code 99201 to 60 minutes for Procedure Code 99205. Chart 21 shows a five-year snapshot of experience for each procedure type and the average amount paid per transaction for new patients.

Chart 21

Office or Other Outpatient Visit for the Evaluation and Management of a New Patient

Distribution of Payments by Procedure Code



Source: NCCI's Medical Data Call, Service Years 2015 to 2019.

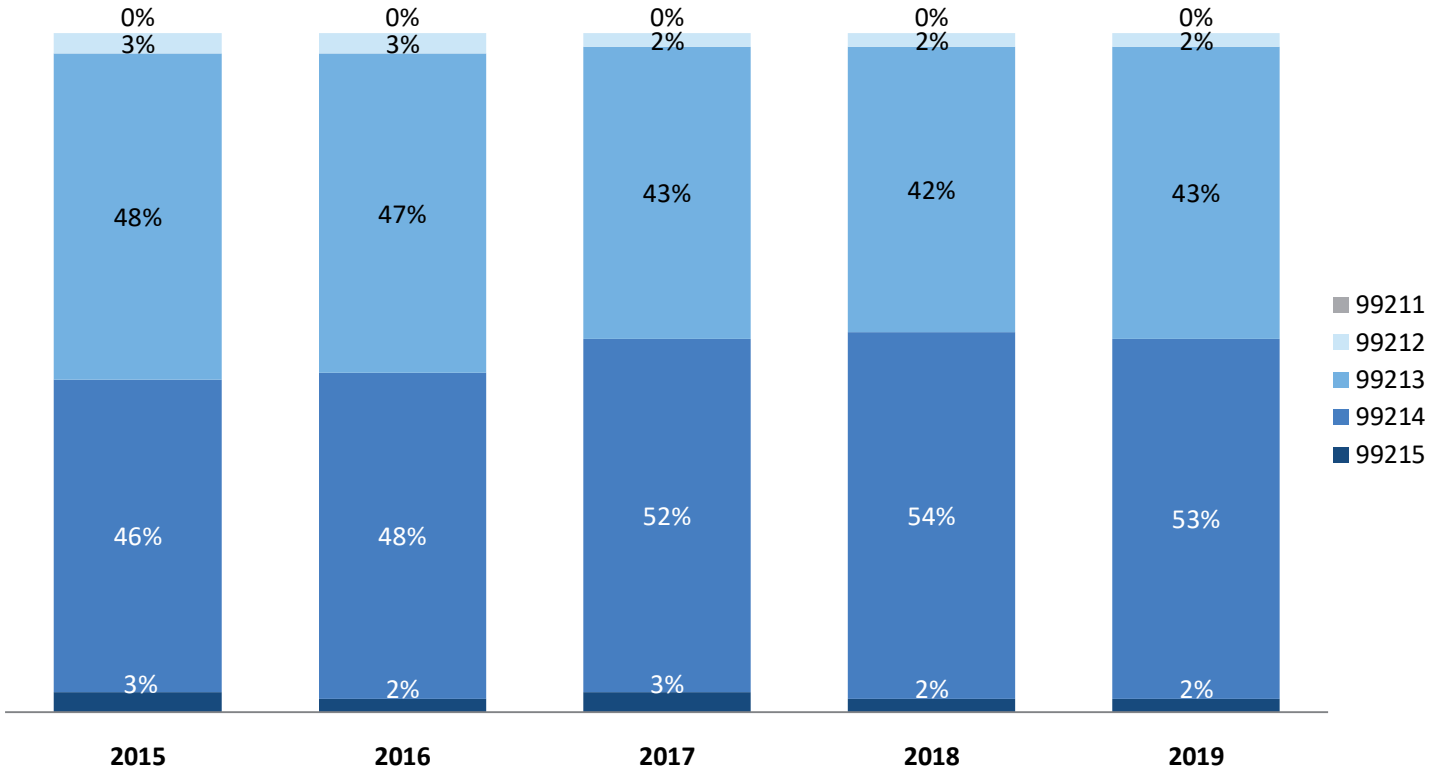
		Average PPT				
Code	**Severity/Time**	**2015**	**2016**	**2017**	**2018**	**2019**
99201	Low to Moderate; 10 minutes with patient	$52	$54	$51	$63	$60
99202	Low to Moderate; 20 minutes with patient	$83	$88	$88	$91	$91
99203	Moderate; 30 minutes with patient	$123	$130	$130	$128	$129
99204	Moderate to High; 45 minutes with patient	$179	$201	$203	$202	$202
99205	Moderate to High; 60 minutes with patient	$231	$245	$261	$258	$274

Similarly, for established patients, there are five periods of time spent with the patient, ranging from five minutes for Procedure Code 99211 to 40 minutes for Procedure Code 99215. Chart 22 shows a five-year snapshot of experience for each procedure type and the average amount paid per transaction for an established patient.

Chart 22

Office or Other Outpatient Visit for the Evaluation and Management of an Established Patient

Distribution of Payments by Procedure Code



Source: NCCI's Medical Data Call, Service Years 2015 to 2019.

		Average PPT				
Code	**Severity/Time**	**2015**	**2016**	**2017**	**2018**	**2019**
99211	Low to Moderate; 5 minutes with patient	$66	$24	$24	$24	$26
99212	Low to Moderate; 10 minutes with patient	$48	$51	$52	$51	$53
99213	Moderate; 15 minutes with patient	$74	$88	$88	$87	$90
99214	Moderate to High; 25 minutes with patient	$111	$128	$129	$128	$130
99215	Moderate to High; 40 minutes with patient	$158	$177	$177	$186	$177

Hospital Inpatient

Payments attributed to facilities represent hospital inpatient services, hospital outpatient services, and ambulatory surgical center services. General healthcare trends may be the primary driver of the cost distribution; however, the fee schedule may also play a role. In many states, the fee schedule varies by type of facility, which may help explain differences observed between states.

Hospital inpatient fee schedules in workers compensation vary across jurisdictions. Some states have fee schedules based on a group of facility services related to the hospital admission, such as a diagnosis-related group (DRG); others are on a per-diem basis, with some variation on the per-diem amount by type of admission. Other states have provisions for the reimbursement to be a certain percentage of hospital charges. Several states remain without any regulation today.

A hospital inpatient stay is typically reported with one of two types of codes: DRG code or revenue code. Data reporters are instructed to report the code that is consistent with how the reimbursement was determined.

If the hospital inpatient fee schedule is a Medicare-based fee schedule, then a greater share of payments reported by DRG codes would be expected. DRG codes are a system of hospital payment classifications that group patients with similar clinical problems who are expected to require similar amounts of hospital resources. DRG codes provide detailed information about the type of services performed during the inpatient stay. In North Carolina, 70% of hospital inpatient payments are reported with a DRG code.

Due to differences in fee schedules, which may result in varied reporting of codes across jurisdictions, the region, and countrywide, comparisons by procedure code for inpatient costs should be interpreted with caution. Some measures for hospital inpatient services include the average cost of an inpatient stay, the average length of stay, or the average cost per day.

A measure of workers compensation hospital inpatient costs is a comparison of current payments to the Medicare rates. The chart below shows the average percentage of Medicare-scheduled reimbursement amounts for hospital inpatient payments for North Carolina, the region, and countrywide, based on hospital episodes that are reported with a DRG code.

Chart 23

Hospital Inpatient Payments as a Percentage of Medicare

Medical Cost Category	North Carolina	Region	Countrywide
Hospital Inpatient	154%	226%	195%

Source: NCCI's Medical Data Call for Service Year 2019. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data includes AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, ME, MI, MN, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI, and WV.

The distribution of medical payments for Hospital Inpatient is 15% for North Carolina, 16% for the region, and 13% for CW. One comparative measure of inpatient service costs is the average payment per inpatient stay. An inpatient stay is defined as any hospital service or set of services provided to a claimant during the period of time when the claimant is in an inpatient setting, for a specific diagnosis. Any stay may have more than one procedure performed, and any claimant may have more than one stay.

Chart 24 displays the average amount paid per stay for hospital inpatient services, while Chart 25 displays the average amount paid per day for hospital inpatient services for North Carolina, the region, and countrywide. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions.

Chart 24

Average Amount Paid per Stay for Hospital Inpatient Services

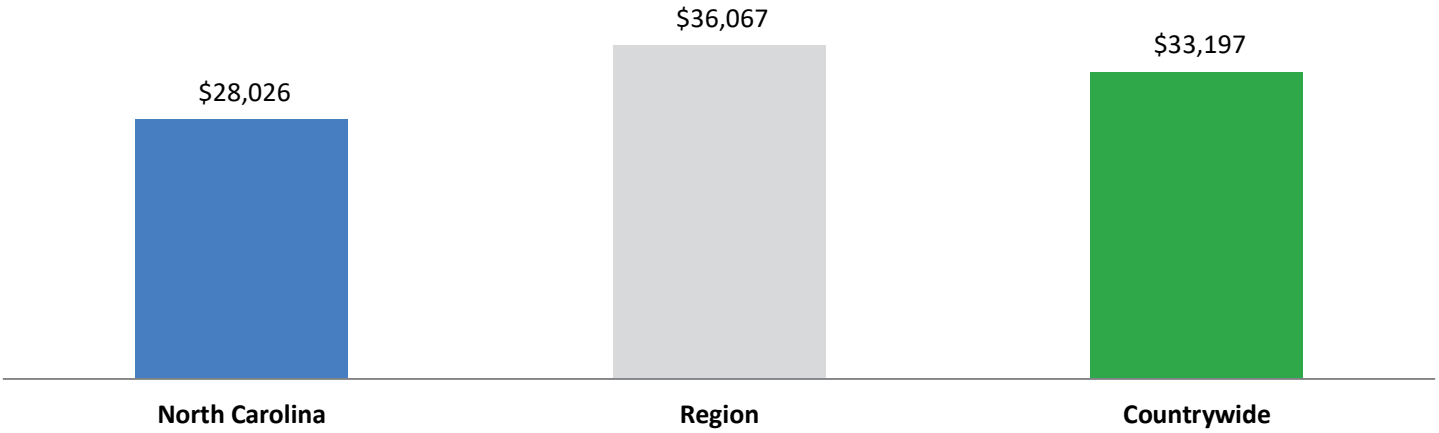


Chart 25

Average Amount Paid per Day for Hospital Inpatient Services

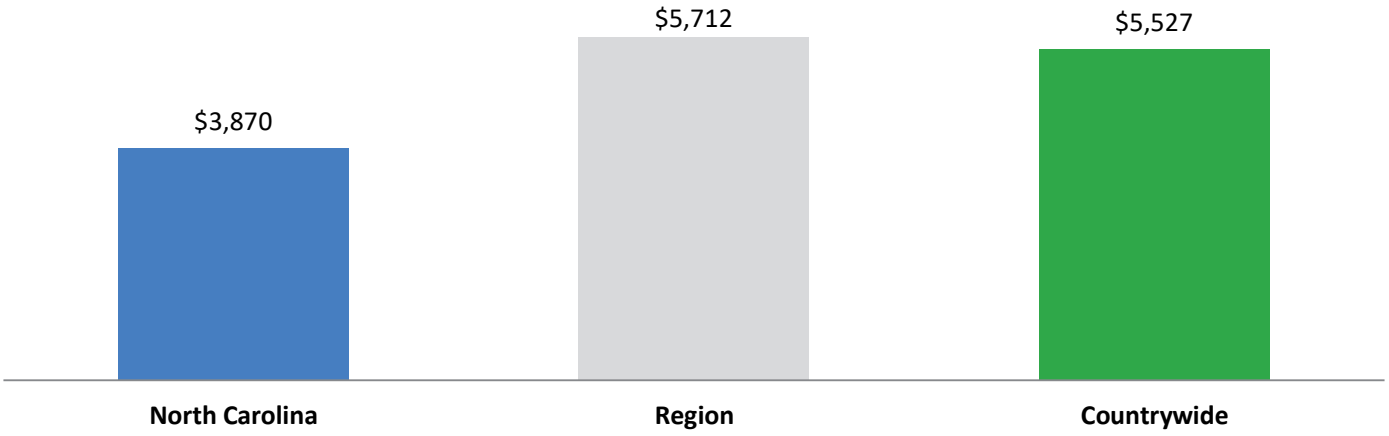


Chart 26 displays the average number of hospital inpatient stays per 1,000 active claims in 2019 for North Carolina, the region, and countrywide. An active claim is a workers compensation claim for which there is at least one medical service provided during that service year. Chart 27 displays the average and median length of stay for hospital inpatient services for North Carolina, the region, and countrywide. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions.

Chart 26

Average Number of Inpatient Stays per 1,000 Active Claims

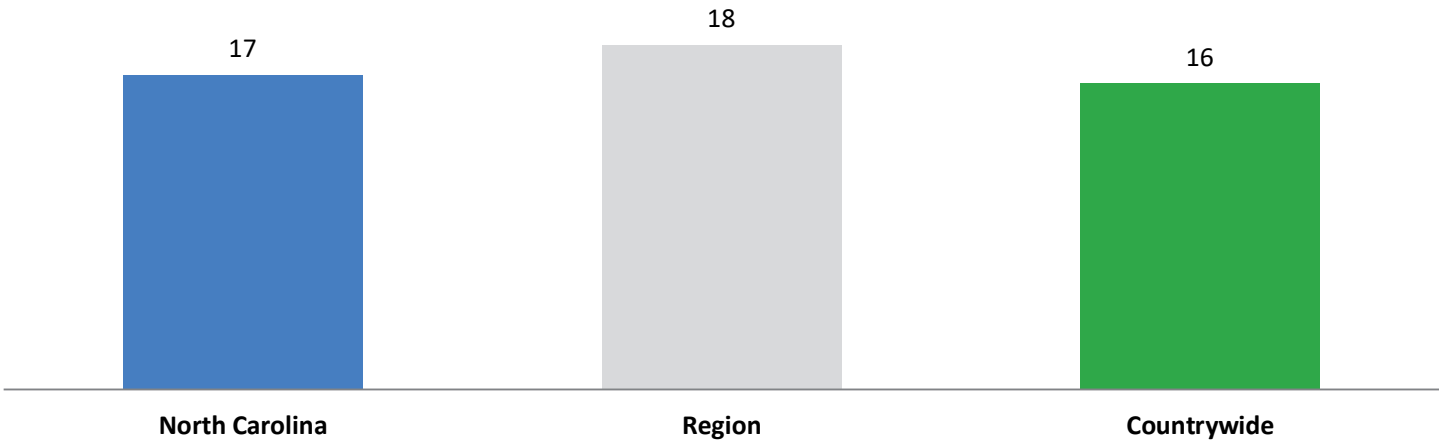


Chart 27

Length of Stay for Hospital Inpatient Services (in Days)

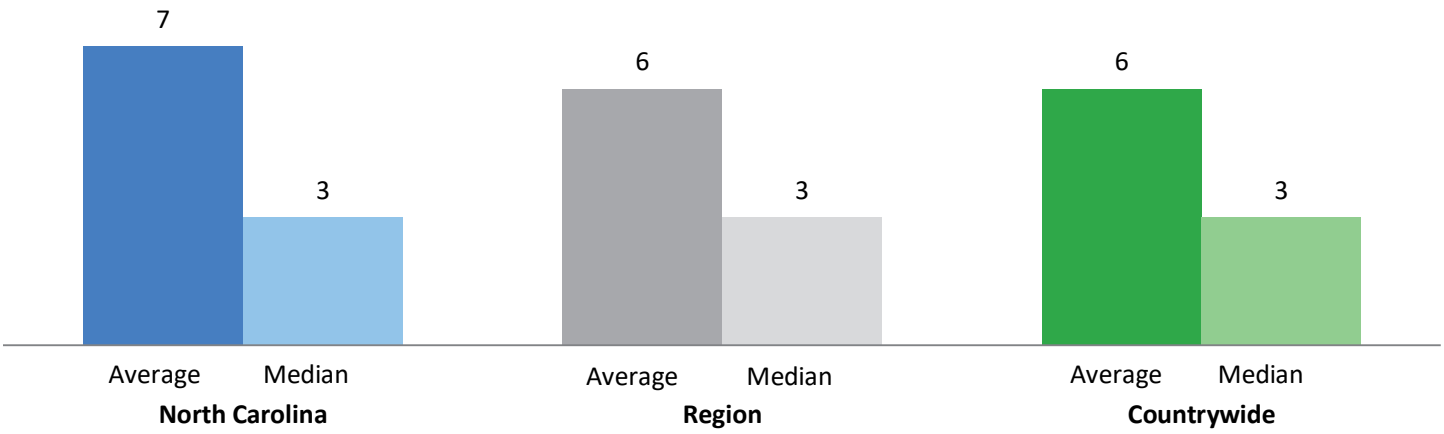
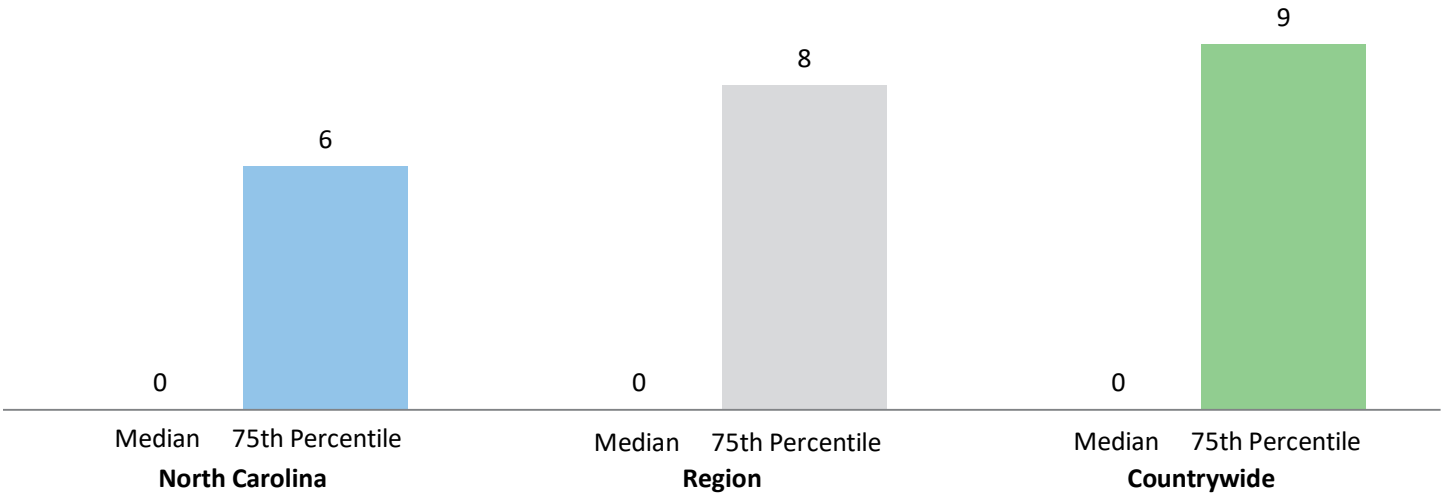


Chart 28 shows the median and 75th percentile time until first treatment for inpatient stays, other than emergency room visits, for North Carolina, the region, and countrywide.

Chart 28

Time Until First Treatment for Hospital Inpatient Stays (in Days)



Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

Charts 29 and 30 display the top 10 diagnosis groups and top 10 DRG codes for hospital inpatient services, showing the most prevalent types of hospital inpatient stays. Diagnosis group is identified for each visit based on ICD-10 (International Classification of Diseases) code. The diagnosis groups and DRG codes are ranked based on total payments in North Carolina. A brief description of each DRG code is displayed in the table below chart 30.

Chart 29

Top 10 Diagnosis Groups by Amount Paid for Hospital Inpatient Services

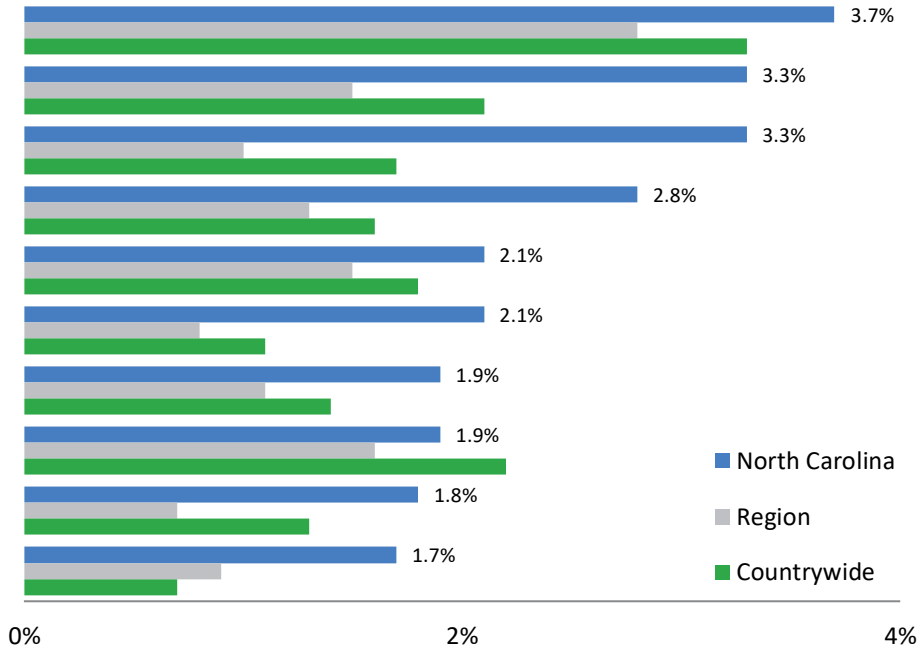
Diagnosis Group	Paid Share	Median Amount Paid per Stay		
		North Carolina	Region	Countrywide
Traumatic brain injury	10.2%	$22,649	$27,033	$25,494
Hip/pelvis fracture/major trauma	6.5%	$18,098	$19,500	$20,806
Tibia/fibula fracture	6.0%	$19,997	$20,777	$21,778
Lumbar spine degeneration	5.6%	$37,664	$35,282	$34,704
Burn and corrosion, third degree, other than head, face, and neck	4.7%	$40,729	$45,701	$42,575
Chest trauma, major	2.7%	$37,361	$28,553	$30,189
Knee degenerative/overuse injuries	2.7%	$19,774	$17,193	$18,972
Rib/sternal fracture	2.3%	$14,249	$12,077	$14,501
Hand/wrist fracture	2.2%	$19,714	$14,859	$17,179
Injury of nerves and spinal cord at neck level	2.2%	$31,319	$36,313	$37,197

Source: NCCI's Medical Data Call for Service Years 2018 and 2019.

Chart 30

Top 10 DRG Codes by Amount Paid for Hospital Inpatient Services

Code	Median Paid per Stay NC	Region	CW
460	$37,783	$36,173	$39,744
470	$20,300	$18,832	$21,589
003	$199,747	$220,318	$238,767
957	$93,954	$112,875	$107,365
494	$18,081	$19,104	$20,069
958	$47,723	$55,061	$60,209
493	$25,154	$26,012	$27,743
455	$48,064	$45,234	$49,240
454	$59,982	$57,631	$58,528
935	$22,578	$23,218	$18,007



Code	Description
460	Spinal fusion, except cervical, without major complications or comorbidities
470	Major joint replacement or reattachment of lower extremity without major complications or comorbidities
003	Extracorporeal membrane oxygenation (ECMO) or tracheostomy, with mechanical ventilation 96+ hours or principal diagnosis, except face, mouth, and neck, with major operating room
957	Other operation room procedures for multiple significant trauma with major complications or comorbidities
494	Lower extremity and humerus procedures except hip, foot, and femur without complications or comorbidities/major complications or comorbidities
958	Other operation room procedures for multiple significant trauma with complications or comorbidities
493	Lower extremity and humerus procedures, except hip, foot, and femur, with complications or comorbidities
455	Combined anterior/posterior spinal fusion without complications or comorbidities/major complications or comorbidities
454	Combined anterior/posterior spinal fusion with complications or comorbidities
935	Nonextensive burns

Source: NCCI's Medical Data Call for Service Years 2018 and 2019. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data includes 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, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI, and WV.

Hospital Outpatient

Hospital outpatient services are reported with several types of procedure codes. Data reporters are instructed to report the code that is consistent with the way the reimbursement was determined.

If the hospital outpatient fee schedule is a Medicare-based fee schedule, then a greater share of payments reported by current procedure terminology (CPT) or other healthcare common procedure coding system (HCPCS) codes would be expected. These codes are very specific and provide detailed information about the actual services performed. Some payments are also reported by a specific ambulatory payment classification (APC) code. An APC code represents a group of services provided by the facility on an outpatient basis.

If the hospital outpatient fee schedule is based on a discount from charged amounts, then revenue codes may be the more prevalent code type. Revenue codes are very generic and do not provide much information about the specific services that were performed.

Due to these differences in fee schedules, which may result in varied reporting of codes across jurisdictions, the region, and countrywide, comparisons by procedure code for outpatient benefits should be interpreted with caution. One comparative measure of outpatient service costs is the average cost per outpatient visit. A visit is defined as any service or set of services provided to a claimant on a specific date. Any visit may have more than one procedure performed, and any claim may have more than one visit.

Hospital outpatient visits can vary in nature. A surgical visit includes at least one surgical service, while a nonsurgical visit does not. A service is classified as “surgical” if it falls within the surgical category as defined by the AMA. 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. In this section, we provide measures of hospital outpatient payments that account for the type of visit because the level of reimbursement varies considerably by type of visit.

One measure of workers compensation hospital outpatient costs is a comparison of current payments to the Medicare rates. The chart below shows the average percentage of Medicare-scheduled reimbursement amounts for hospital outpatient payments for North Carolina, the region, and countrywide. In North Carolina, 87% of hospital outpatient payments are included in the chart below.

Chart 31

Hospital Outpatient Payments as a Percentage of Medicare

Medical Cost Category	North Carolina	Region	Countrywide
Hospital Outpatient	170%	269%	247%

Source: NCCI’s Medical Data Call for Service Year 2019. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data includes AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, ME, MI, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI, and WV.

The distribution of medical payments for Hospital Outpatient is 18% for North Carolina, 18% for the region, and 20% for countrywide. Surgical services represent 61% of hospital outpatient payments in North Carolina. Chart 32 displays the average amount paid per surgical visit for hospital outpatient services, while Chart 33 displays the average number of surgical visits per 1,000 active claims for hospital outpatient services for North Carolina, the region, and countrywide. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions.

Chart 32

Average Amount Paid per Surgical Visit for Hospital Outpatient Services

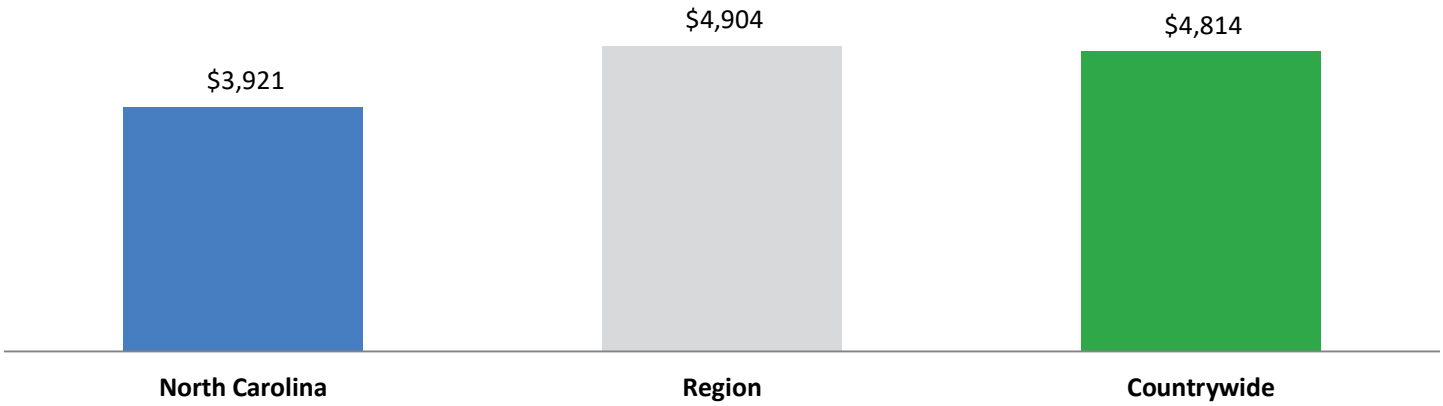
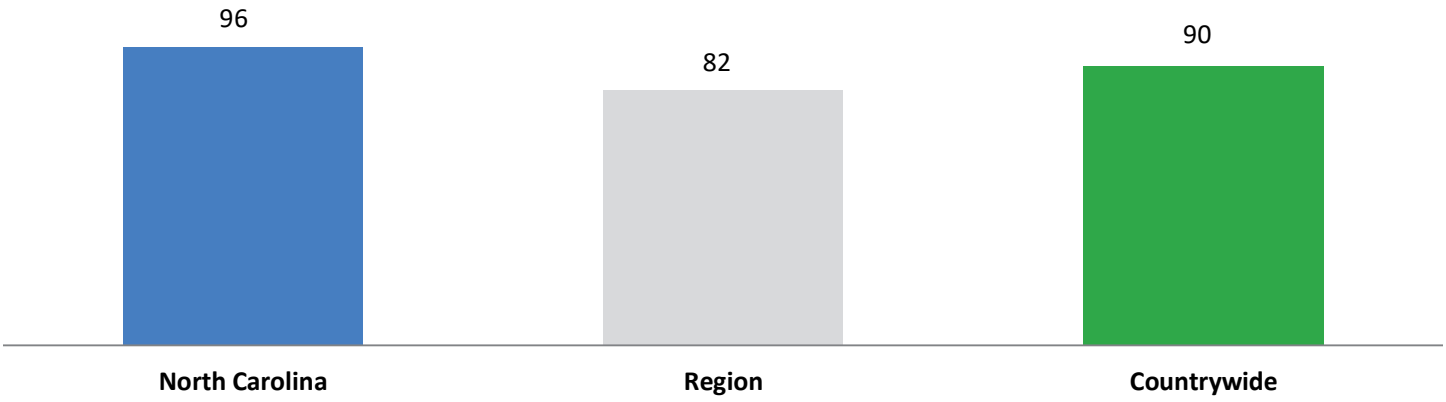


Chart 33

Average Number of Surgical Hospital Outpatient Visits per 1,000 Active Claims



Nonsurgical services (such as physical therapy) represent 39% of hospital outpatient payments in North Carolina. Chart 34 displays the average amount paid per nonsurgical visit for hospital outpatient services, while Chart 35 displays the average number of nonsurgical visits per 1,000 active claims for hospital outpatient services. Both charts display information for North Carolina, the region, and countrywide. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions.

Chart 34

Average Amount Paid per Nonsurgical Visit for Hospital Outpatient Services

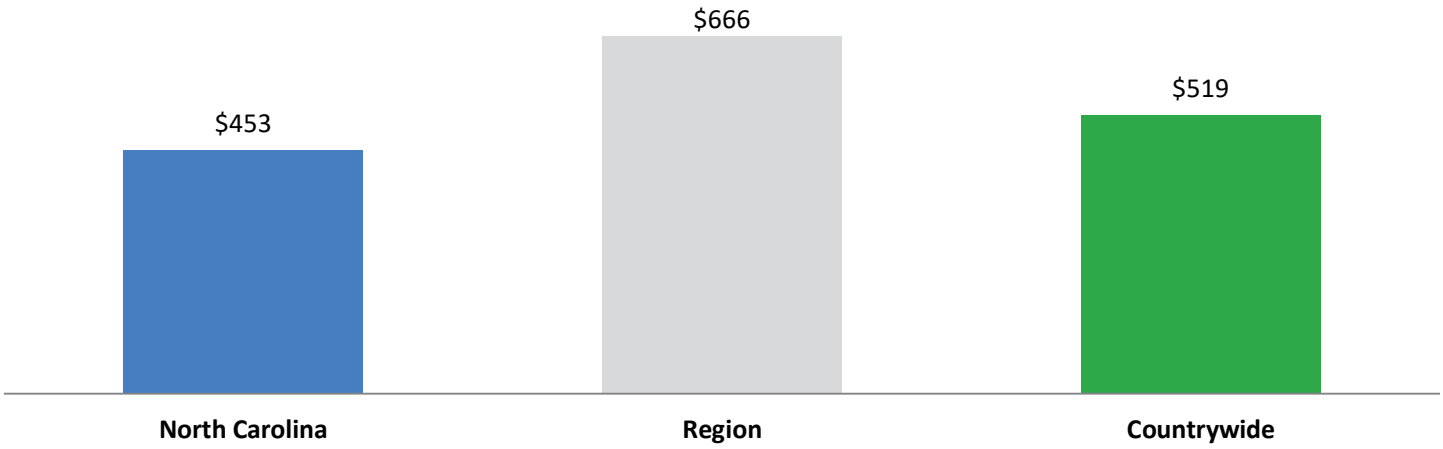


Chart 35

Average Number of Nonsurgical Hospital Outpatient Visits per 1,000 Active Claims

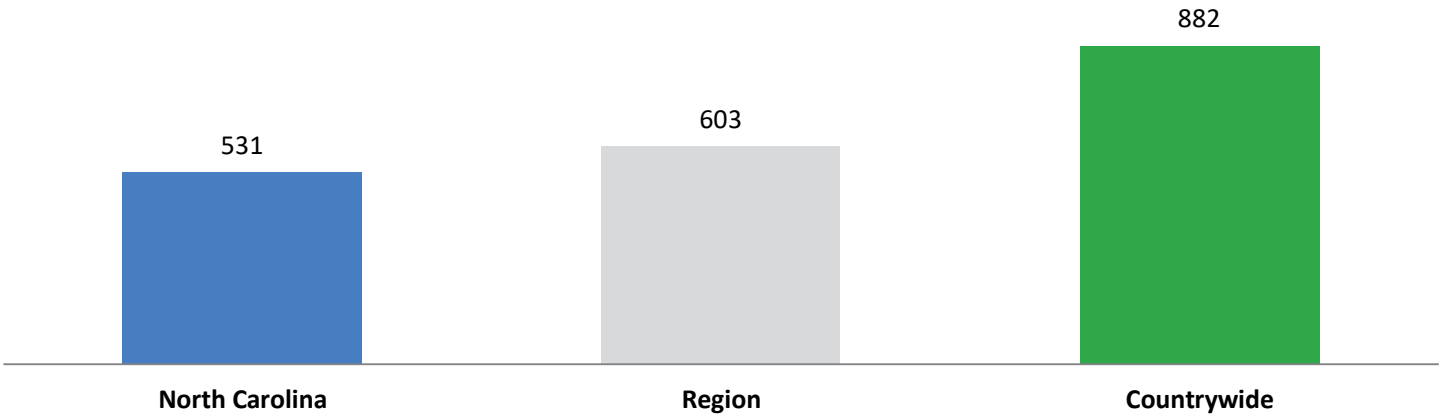


Chart 36 shows the median and 75th percentile time until first treatment for major surgery outpatient visits. Chart 37 shows the median and 75th percentile time until first treatment for all other outpatient visits, other than emergency room visits, for North Carolina, the region, and countrywide.

Chart 36

Time Until First Treatment for Major Surgery Outpatient Visits (in Days)

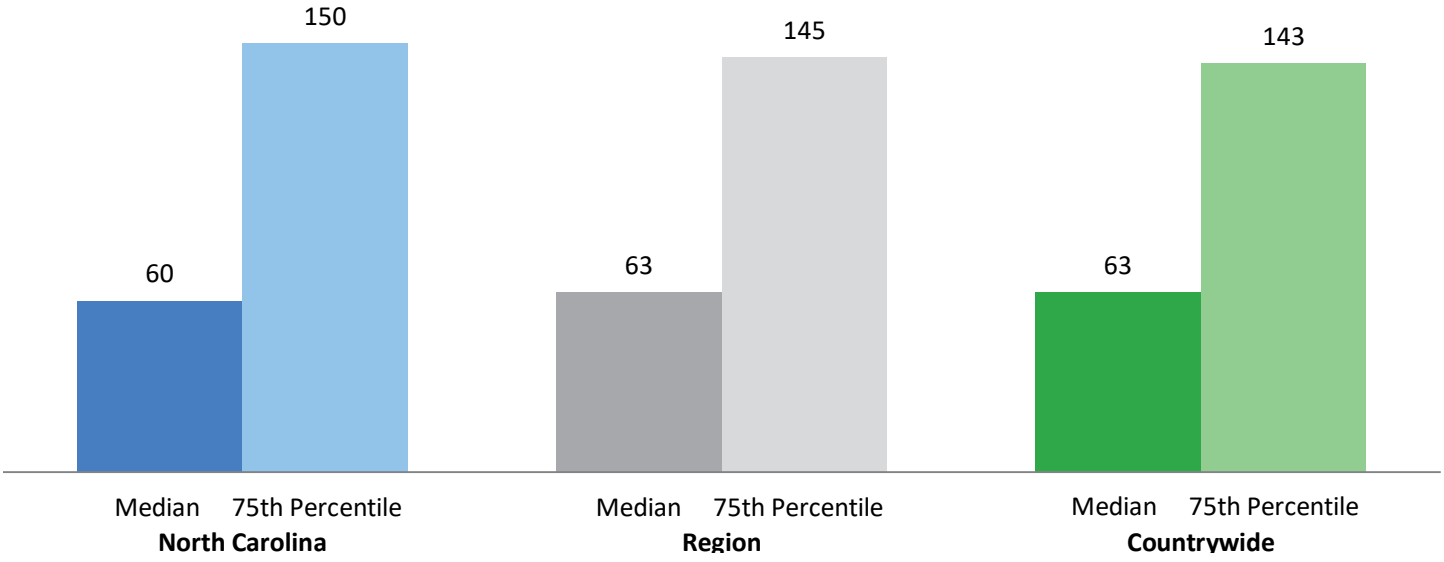
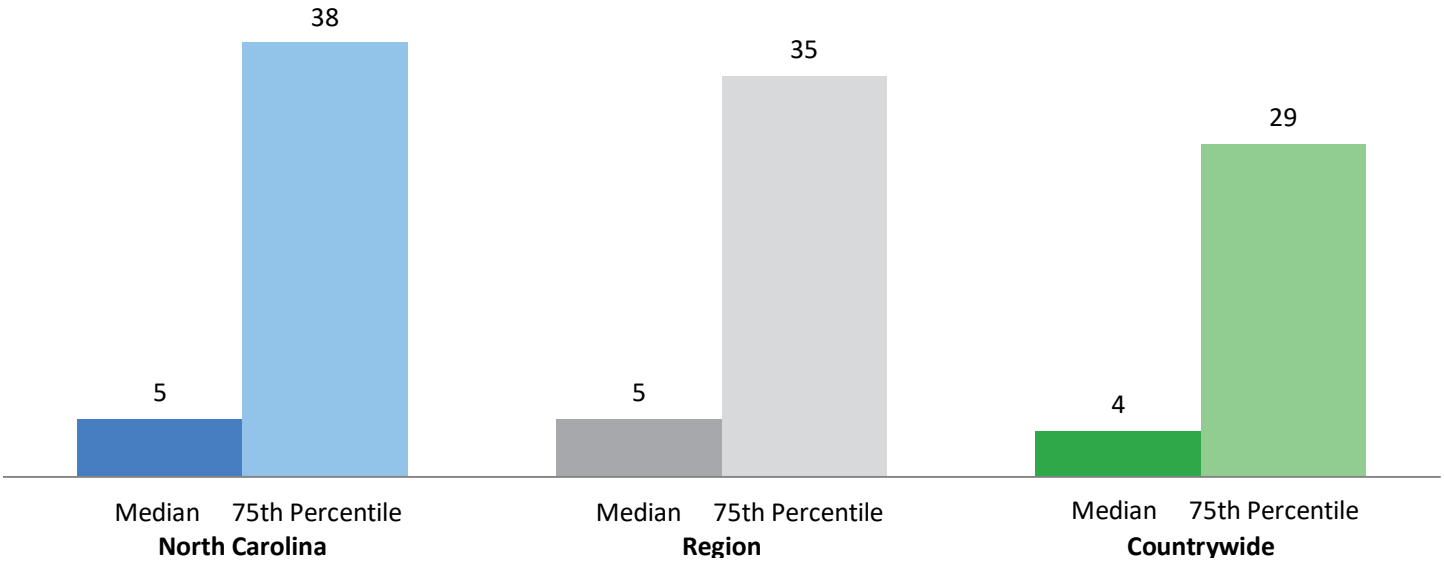


Chart 37

Time Until First Treatment for All Other Outpatient Visits (in Days)



Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

Chart 38 displays the median amount paid per visit for outpatient services in North Carolina, the region, and countrywide for the top 10 diagnosis groups in North Carolina. The diagnosis groups are ranked based on total payments in North Carolina.

Chart 38

Top 10 Diagnosis Groups by Amount Paid for Hospital Outpatient Services

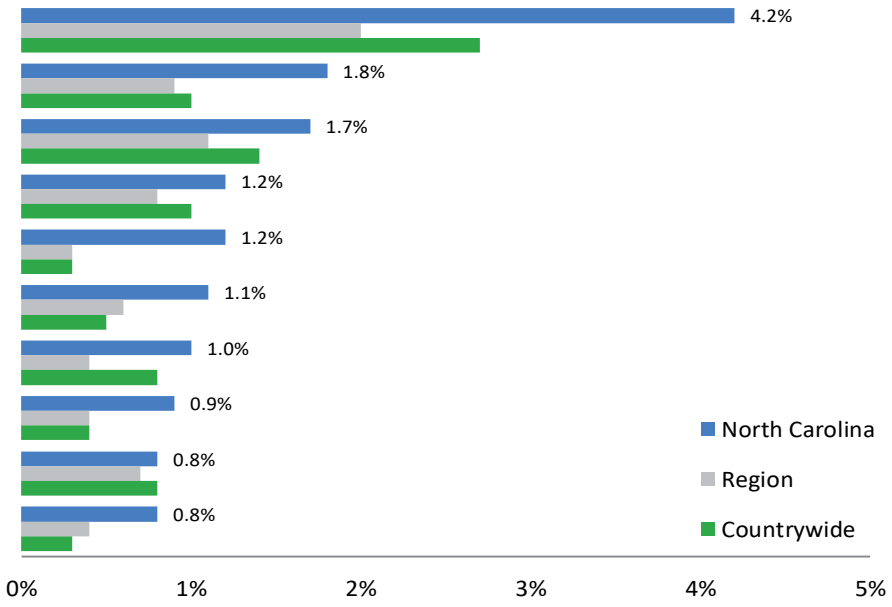
Diagnosis Group	Paid Share	Median Amount Paid Per Visit		
		North Carolina	Region	Countrywide
Minor hand/wrist injuries	6.5%	$250	$387	$332
Hand/wrist fracture	5.6%	$588	$373	$281
Rotator cuff tear	5.1%	$194	$155	$213
Minor shoulder injury	3.1%	$127	$167	$197
Low back pain	2.4%	$228	$246	$217
Knee internal derangement - meniscus injury	2.2%	$2,389	$309	$303
Lumbosacral intervertebral disc disorders	2.2%	$396	$346	$318
Lumbar spine degeneration	2.1%	$311	$442	$386
Ankle fracture	1.9%	$411	$335	$291
Concussion/minor traumatic brain injury	1.9%	$186	$503	$288

Charts 39 and 40 display the average amount paid per visit for outpatient services in North Carolina, the region, and countrywide for the top 10 surgery CPT and nonsurgery CPT codes in North Carolina. The codes are ranked based on total payments in North Carolina, where the code shown below is the code with the highest total paid on a visit.[7] In 2019, 91% of Hospital Outpatient costs were reported with a CPT code being the highest paid code. A brief description of each code is displayed in the table below.

Chart 39

Top 10 Surgery Procedure Codes by Amount Paid for Hospital Outpatient Services

	Average Paid per Visit		
Code	**NC**	**Region**	**CW**
29827	$9,200	$9,688	$11,619
63030	$10,258	$10,888	$11,615
29881	$4,700	$5,811	$6,432
49650	$7,917	$9,644	$9,676
63685	$28,279	$15,844	$17,241
22551	$14,583	$14,273	$15,981
23430	$8,008	$8,909	$11,876
25609	$8,526	$9,999	$10,675
20680	$4,434	$6,426	$6,487
63047	$9,081	$12,167	$11,968



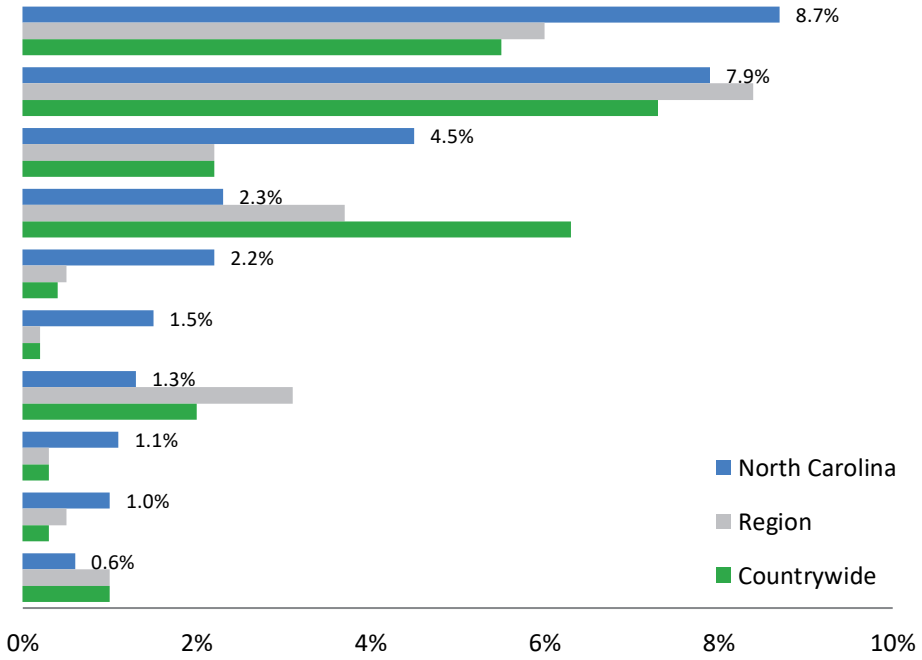
Code	Description
29827	Arthroscopy, shoulder, surgical; with rotator cuff repair
63030	Laminotomy (hemilaminectomy) with decompression of nerve root(s) including partial facetectomy, foraminotomy, and/or excision of herniated intervertebral disc; 1 interspace lumbar
29881	Arthroscopy, knee, surgical; with meniscectomy (medial or lateral, including any meniscal shaving), including debridement/shaving of articular cartilage
49650	Laparoscopy, surgical; repair initial inguinal hernia
63685	Insertion or replacement of spinal neurostimulator pulse generator or receiver, direct or inductive coupling
22551	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy, and decompression of spinal cord and/or nerve roots; cervical below C2
23430	Tenodesis of long tendon of biceps
25609	Open treatment of distal radial intra-articular fracture or epiphyseal separation; with internal fixation of 3 or more fragments
20680	Removal of implant; deep (e.g., buried wire, pin, screw, metal, band, nail, rod, or plate)
63047	Laminectomy, facetectomy, and foraminotomy (unilateral or bilateral with decompression of spinal cord, cauda equine, and/or nerve root), single vertebral segment; lumbar

[7] A visit is defined as any hospital outpatient service or set of services provided to a claimant on a specific date. Any visit may have more than one procedure performed, and any claimant may have more than one visit.

Chart 40

Top 10 Nonsurgery Procedure Codes by Amount Paid for Hospital Outpatient Services

Code	Average Paid per Visit NC	Region	CW
99284	$1,012	$1,255	$1,341
99283	$573	$790	$812
99285	$1,877	$2,073	$2,344
97110	$140	$195	$203
G0463	$223	$185	$191
97799	$2,029	$1,365	$2,409
74177	$2,802	$6,911	$5,885
99199	$9,498	$3,164	$2,760
90375	$7,580	$10,611	$9,530
99282	$294	$431	$472



Code	Description
99284	Emergency department visit. Usually the presenting problem(s) are of high severity and require urgent evaluation by the physician but do not pose an immediate significant threat to life or physiologic function.
99283	Emergency department visit. Usually the presenting problem(s) are of moderate severity.
99285	Emergency department visit. Usually the presenting problem(s) are of high severity and pose an immediate significant threat to life or physiologic function.
97110	Therapeutic procedure, 1 or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance, range of motion, and flexibility
G0463	Hospital outpatient clinic visit for assessment and management of a patient
97799	Unlisted physical medicine/rehabilitation service or procedure
74177	Computed tomography (CT), abdomen and pelvis; with contrast material
99199	Unlisted special service procedure or report
90375	Rabies immune globulin (RIG), human, for intramuscular and/or subcutaneous use
99282	Emergency department visit. Usually the presenting problem(s) are of low to moderate severity.

In North Carolina, 16% of the payments associated with facilities (ASC, hospital outpatient, and hospital inpatient) are for emergency service payments, compared to 18% countrywide.

Chart 41 displays the average amount paid per visit for emergency services for North Carolina, the region, and countrywide. The average amount paid includes all payments for an emergency service visit such as payments for facility services, physician services, and drugs. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions. Chart 42 displays the number of visits per year per 1,000 active claims for emergency services for North Carolina, as well as for the region and countrywide.

Chart 41

Average Amount Paid per Emergency Service Visit

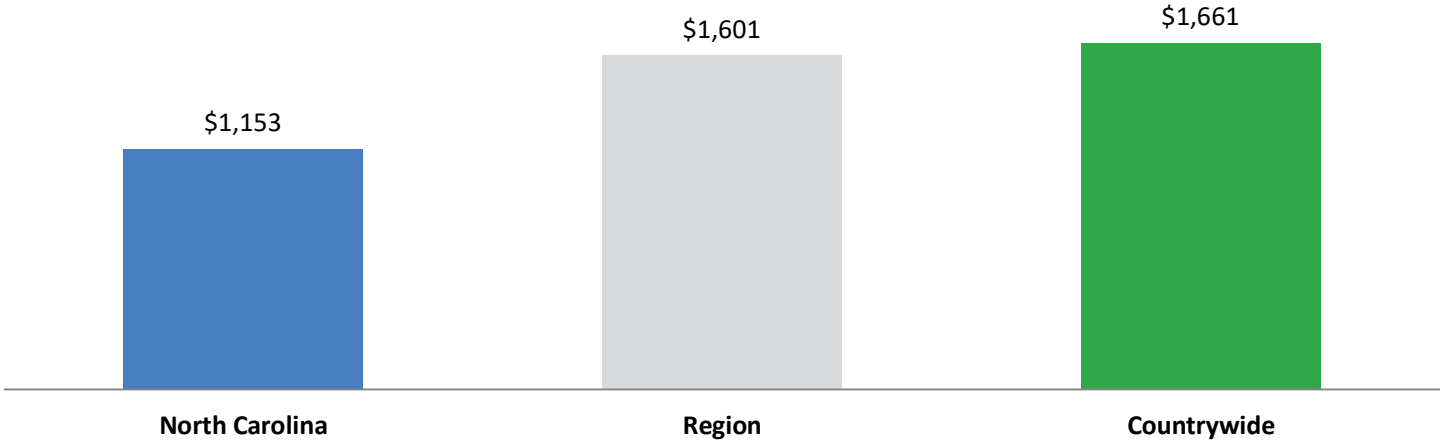


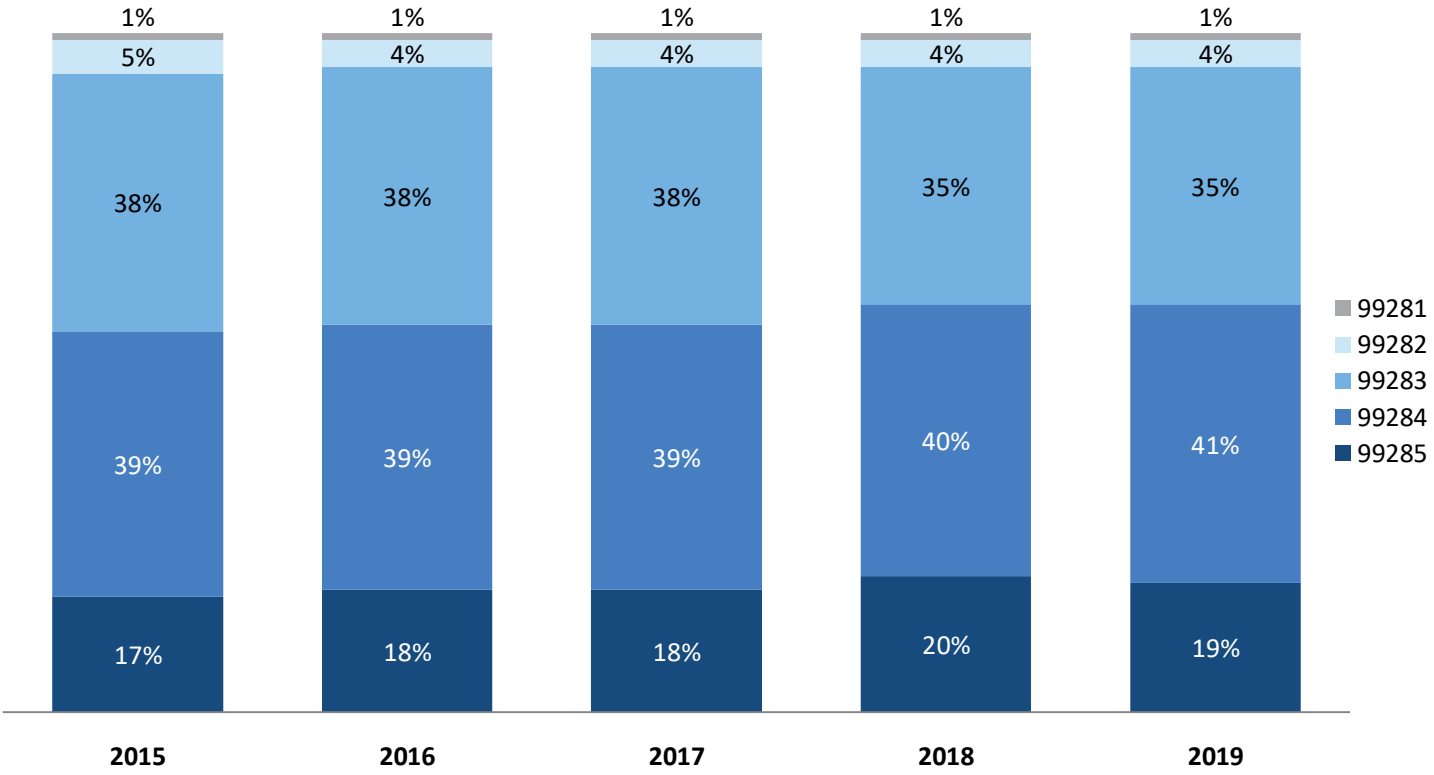
Chart 42

Average Number of Emergency Service Visits per 1,000 Active Claims

For emergency room visits, there are five levels of severity, ranging from limited or minor problems reported with Procedure Code 99281 to life-threatening situations reported with Procedure Code 99285. Chart 43 shows a five-year snapshot of experience for each procedure type and the average payment per transaction.

Chart 43

Emergency Room Payments by Procedure Code



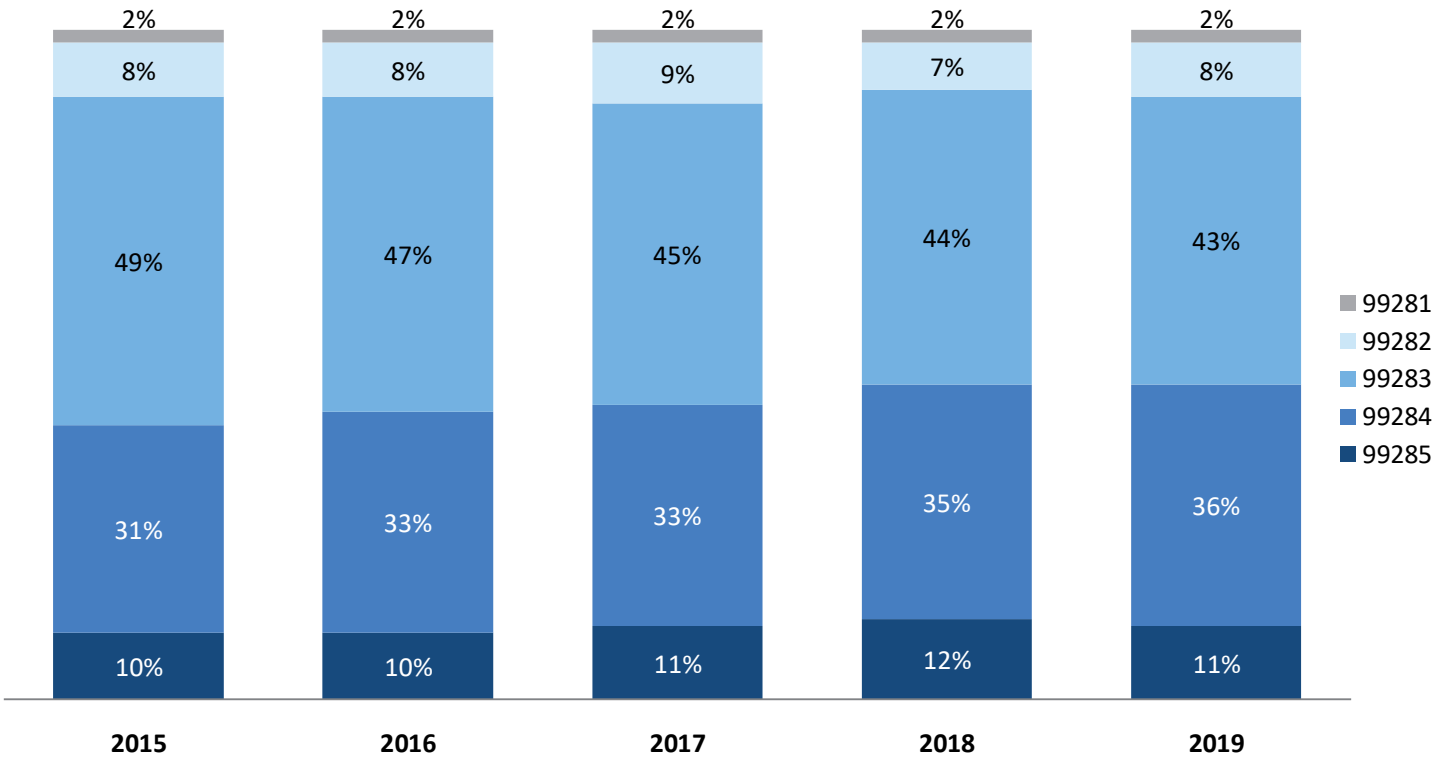
Source: NCCI's Medical Data Call, Service Years 2015 to 2019.

		Average PPT				
Code	**Severity**	**2015**	**2016**	**2017**	**2018**	**2019**
99281	Minor	$90	$91	$92	$96	$100
99282	Low to moderate	$184	$177	$175	$191	$195
99283	Moderate	$277	$274	$277	$292	$302
99284	High	$421	$416	$403	$422	$423
99285	High and immediately life-threatening	$567	$584	$580	$617	$629

Chart 44 shows a five-year snapshot of experience for each procedure type per service year.

Chart 44

Emergency Room Transactions by Procedure Code



Source: NCCI's Medical Data Call, Service Years 2015 to 2019.

Code	Severity
99281	Minor
99282	Low to moderate
99283	Moderate
99284	High
99285	High and immediately life-threatening

Ambulatory Surgical Centers

ASCs are often used as an alternative facility to hospitals for conducting outpatient surgeries. The distribution of medical payments for ASCs is 4% for North Carolina, 8% for the region, and 7% for countrywide.

One measure of workers compensation ASC costs is a comparison of current payments to the Medicare rates. The chart below shows the average percentage of Medicare-scheduled reimbursement amounts for ASC payments for North Carolina, the region, and countrywide. In North Carolina, 90% of ASC payments are included in the chart below.

Chart 45

ASC Payments as a Percentage of Medicare

Medical Cost Category	North Carolina	Region	Countrywide
Ambulatory Surgical Center	174%	286%	274%

Source: NCCI's Medical Data Call for Service Year 2019. Region includes AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV. Countrywide data includes AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, ME, MI, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI, and WV.

Chart 46 displays the average amount paid per surgical visit for ASC services for North Carolina, the region, and countrywide. Note that there are no controls for mix of diagnosis or severity of claims between jurisdictions. Chart 47 displays the number of surgical ASC visits per year per 1,000 active claims for North Carolina, the region, and countrywide.

Chart 46

Average Amount Paid per Surgical Visit for ASC Services

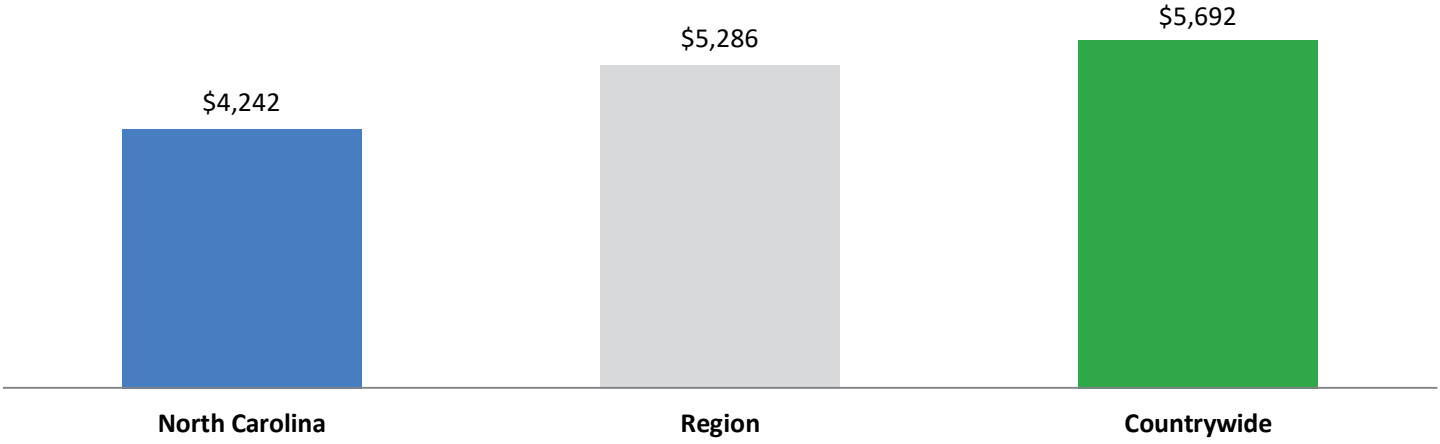


Chart 47

Average Number of Surgical ASC Visits per 1,000 Active Claims

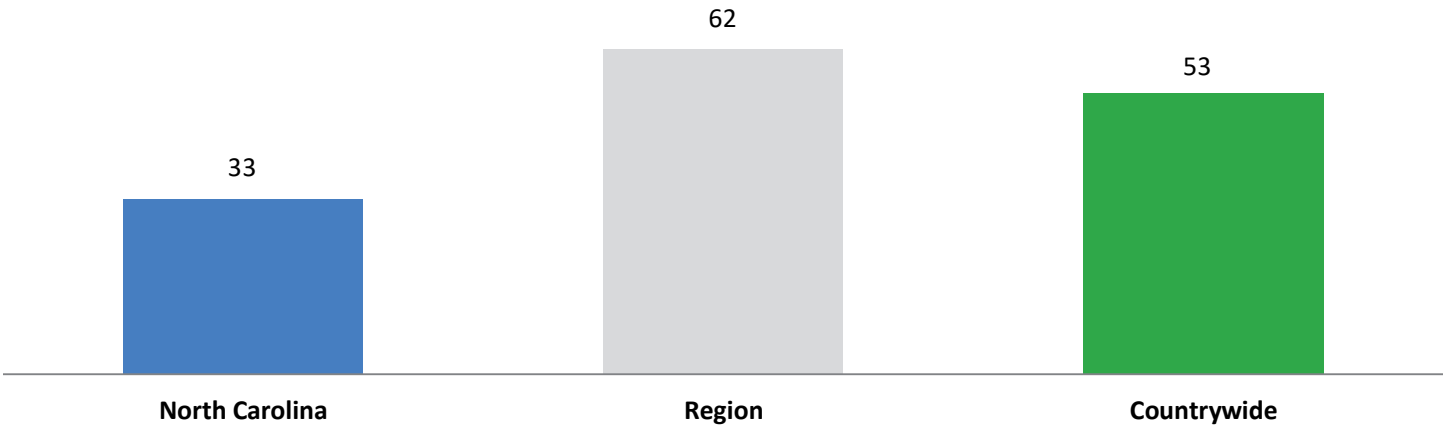
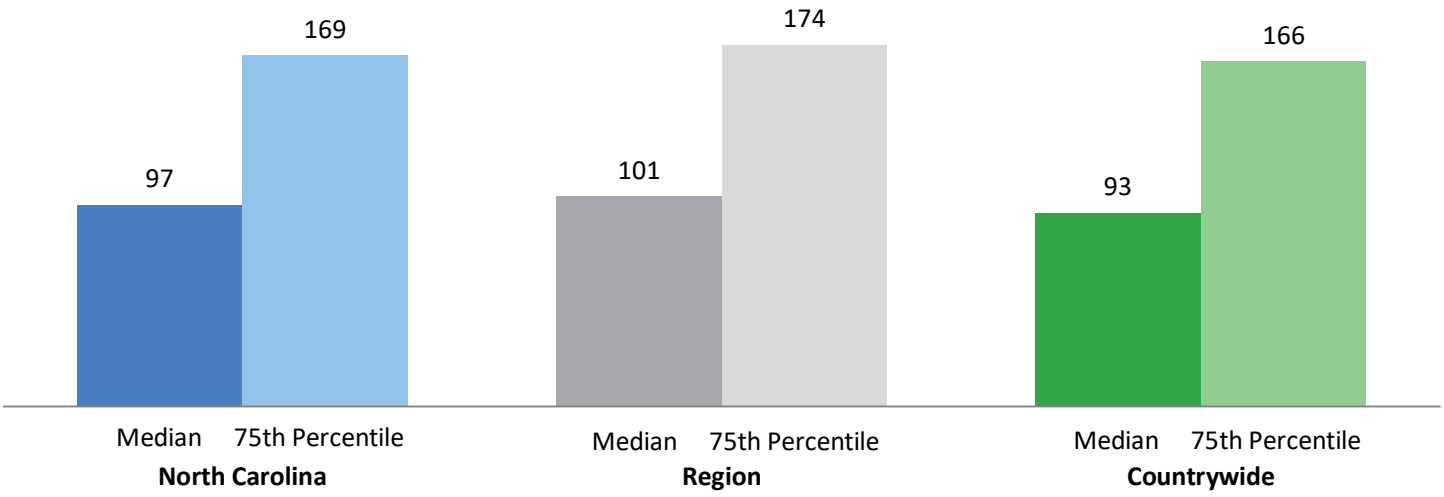


Chart 48 shows the median and 75th percentile time until first treatment for surgical ASC visits for North Carolina, the region, and countrywide.

Chart 48

Time Until First Treatment for Surgical ASC Visits (in Days)



Source: NCCI's Medical Data Call for Accident Year 2018 and Service Years 2018 and 2019.

Chart 49 displays the top 10 diagnosis groups for surgical ASC visits. The diagnosis groups are ranked based on total payments in North Carolina.

Chart 49

Top 10 Diagnosis Groups by Amount Paid for ASC Services

Diagnosis Group	Paid Share	Median Amount Paid per Visit		
		North Carolina	Region	Countrywide
Rotator cuff tear	12.5%	$5,998	$9,575	$9,686
Degenerative shoulder	8.0%	$5,623	$8,625	$8,516
Hand/wrist fracture	5.7%	$3,227	$5,213	$5,185
Superior labral tear from anterior to posterior (SLAP) lesion	4.8%	$6,912	$8,920	$8,681
Knee internal derangement - meniscus injury	4.6%	$2,312	$3,828	$4,136
Minor shoulder injury	3.8%	$5,104	$6,948	$7,002
Knee degenerative/overuse injuries	2.9%	$2,357	$4,135	$4,520
Shoulder impingement syndrome	2.9%	$4,632	$8,987	$8,549
Lumbosacral intervertebral disc disorders	2.7%	$4,889	$1,562	$1,562
Knee internal derangement - cruciate ligament tear	2.7%	$7,235	$9,175	$9,273

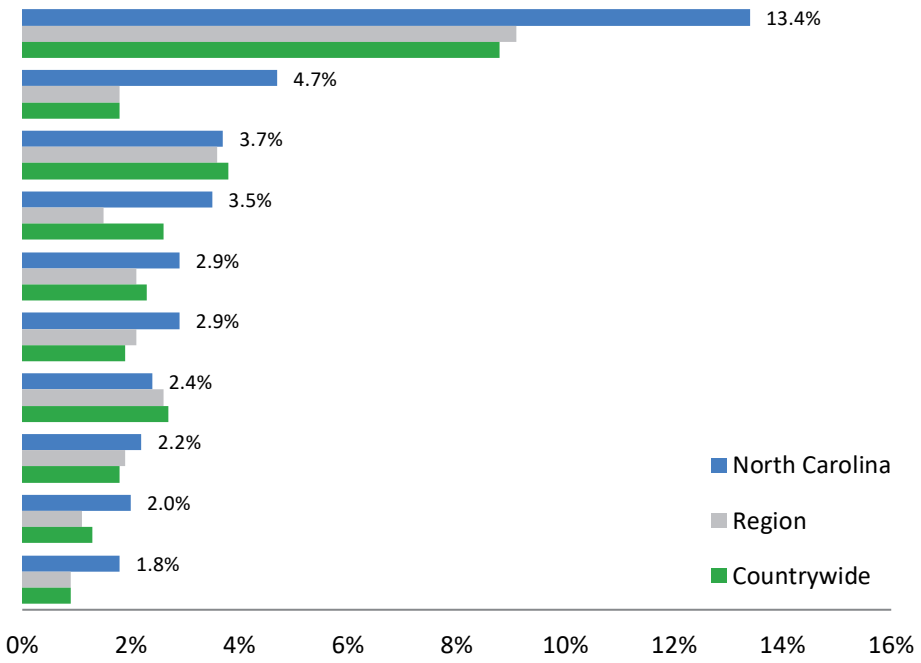
Typically, only surgery-related services are performed in ASCs. The most prevalent procedure code types reported are CPT codes and revenue codes. The predominant revenue code reported for ASC services is code 0490—Ambulatory Surgical Care. In North Carolina, code 0490 represents 92% of ASC payments reported by revenue codes.

Chart 50 displays the top 10 surgery CPT codes for ASC services. The procedure codes are ranked based on total payments in North Carolina. A brief description of each procedure code is displayed in the table below.

Chart 50

Top 10 Surgery Procedure Codes by Amount Paid for ASC Services

Code	Average PPT NC	Region	CW
29827	$4,384	$6,126	$6,165
29828	$3,344	$5,024	$4,655
29881	$2,067	$3,488	$3,818
23430	$3,487	$5,263	$5,374
29824	$1,279	$3,129	$3,097
63685	$25,182	$24,391	$21,914
29823	$1,366	$3,504	$3,378
29888	$5,893	$7,029	$7,110
24342	$4,113	$5,021	$5,691
25609	$6,282	$6,400	$6,998



Code	Description
29827	Arthroscopy, shoulder, surgical; with rotator cuff repair
29828	Arthroscopy, shoulder, surgical; biceps tenodesis
29881	Arthroscopy, knee, surgical; with meniscectomy (medial or lateral, including any meniscal shaving), including debridement/shaving of articular cartilage
23430	Tenodesis of long tendon of biceps
29824	Arthroscopy, shoulder, surgical; distal claviculectomy including distal articular surface (Mumford procedure)
63685	Insertion or replacement of spinal neurostimulator pulse generator or receiver, direct or inductive coupling
29823	Arthroscopy, shoulder, surgical; debridement, extensive
29888	Arthroscopically aided anterior cruciate ligament repair/augmentation or reconstruction
24342	Reinsertion of ruptured biceps or triceps tendon, distal, with or without tendon graft
25609	Open treatment of distal radial intra-articular fracture or epiphyseal separation; with internal fixation of 3 or more fragments

Prescription Drugs

The distribution of medical payments for drugs is 8% for North Carolina, 11% for the region, and 8% for countrywide. Prescription drugs are uniquely identified by a national drug code (NDC). Charts 51 through 55 provide greater detail on payments for prescription drugs reported with an NDC, whether the drugs were provided in a pharmacy, physician's office, hospital, or other place of service. Payments are categorized as drugs if the code reported on the transaction is an NDC. Payments for drugs can also be reported using codes other than NDCs, such as revenue codes, HCPCS codes, and other state-specific procedure codes. The results in these charts are based only on payments reported with an NDC.

The Controlled Substances Act (CSA) was passed in 1970 to regulate the manufacture, distribution, possession, and use of certain drugs. There are five schedules, or groups of drugs, determined by varying qualifications, such as the drug's medical uses, if any, and its potential for abuse. For example, Schedule V drugs are defined as having the lowest potential for abuse, while Schedule I drugs are illegal at the federal level, mainly because they are defined as having no currently accepted medical uses and a high potential for abuse.

In North Carolina, the share of claims observed in Service Year 2019 with at least one controlled substance was 10%. This compares to the region and countrywide shares of 12% and 10%, respectively. In 2019, North Carolina spent $3.0M on Schedule II and Schedule III drugs for workers compensation claims.

Chart 51 shows the distribution of prescription drug payments by CSA schedule in North Carolina, the region, and countrywide.

Chart 51

Distribution of Prescription Drug Payments by CSA Schedule

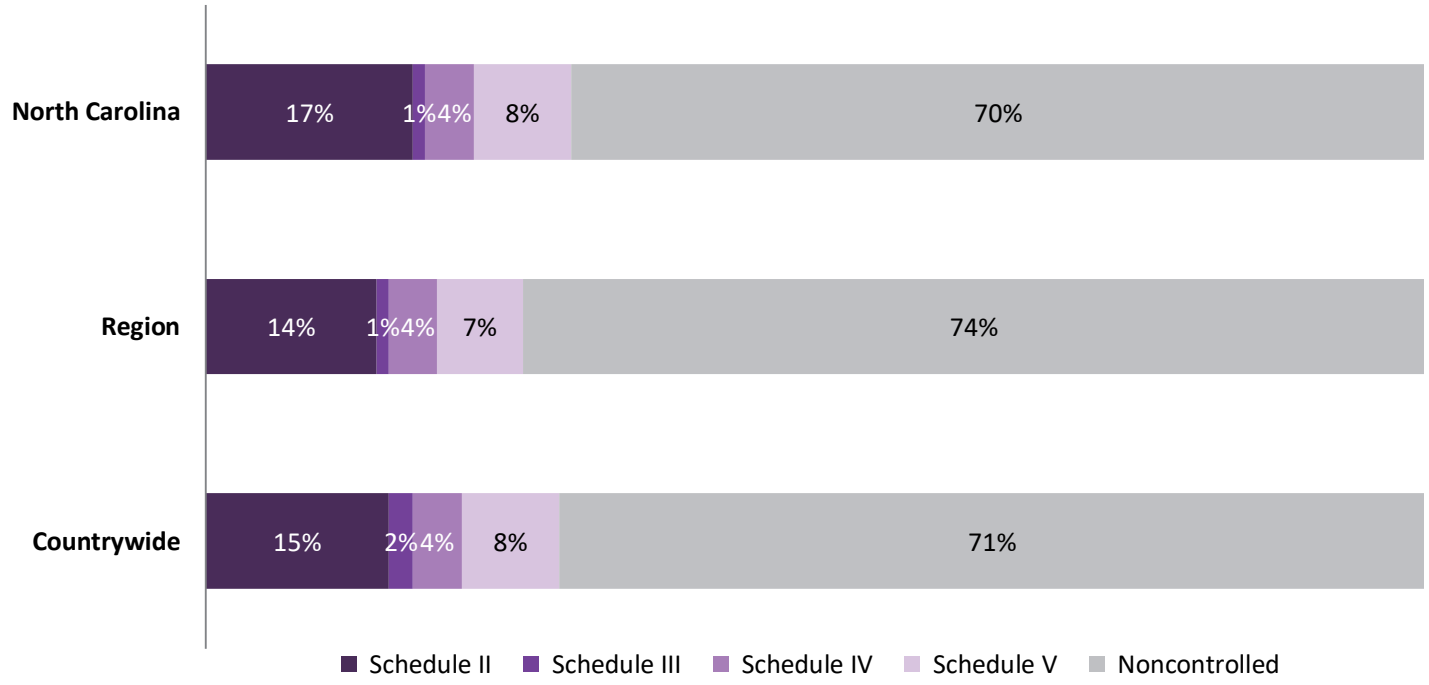


Chart 52 displays the shares of the payments of prescription medication for the top 10 drugs used in workers compensation treatment, by amount paid in North Carolina. This chart also indicates whether the drugs are generic (G) or brand name (B); for generic drugs, a commonly used brand name equivalent is also provided. This method of ranking shows which drugs have the highest percentage share of payments. Also included is the average price per unit (PPU). (See Glossary for the definition of *unit*.)

Chart 52

Top 10 Workers Compensation Drugs by Amount Paid

Drug Name	Average PPU NC	Average PPU Region	Average PPU CW	North Carolina Paid Share
Lyrica®	$8.16	$8.17	$8.18	5.8%
Gabapentin	$0.77	$1.07	$0.97	3.7%
Meloxicam	$2.69	$3.32	$3.12	3.4%
Diclofenac Sodium	$1.03	$1.87	$1.68	3.1%
Oxycontin®	$9.21	$9.89	$9.54	3.0%
Nucynta®	$8.33	$7.95	$7.97	2.9%
Duloxetine HCl	$4.41	$5.14	$4.71	2.7%
Lidocaine	$5.78	$7.12	$7.01	2.7%
Cyclobenzaprine HCl	$1.48	$1.90	$1.58	2.1%
Celecoxib	$3.94	$5.58	$4.97	2.1%

Drug Name	B/G	Common Brand Name	Category	CSA Schedule	CW Rank
Lyrica®	B	N/A	Miscellaneous Central Nervous System Agents	V	1
Gabapentin	G	Neurontin®	Anticonvulsants	None	2
Meloxicam	G	Mobic®	Analgesics/Antipyretics	None	6
Diclofenac Sodium	G	Voltaren®	Analgesics/Antipyretics	None	5
Oxycontin®	B	N/A	Analgesics/Antipyretics	II	3
Nucynta®	B	N/A	Analgesics/Antipyretics	II	21
Duloxetine HCl	G	Cymbalta®	Psychotherapeutic Agents	None	8
Lidocaine	G	Lidoderm®	Antipruritics/Local Anesthesia, Skin/Mucous Membrane	None	4
Cyclobenzaprine HCl	G	Flexeril®	Muscle Relaxants, Skeletal	None	10
Celecoxib	G	Celebrex®	Analgesics/Antipyretics	None	7

Chart 53 displays the top 10 drugs used in workers compensation treatment, according to the number of prescriptions in North Carolina. This chart reveals the most frequently prescribed drugs and the average PPU.

Chart 53

Top 10 Workers Compensation Drugs by Prescription Counts

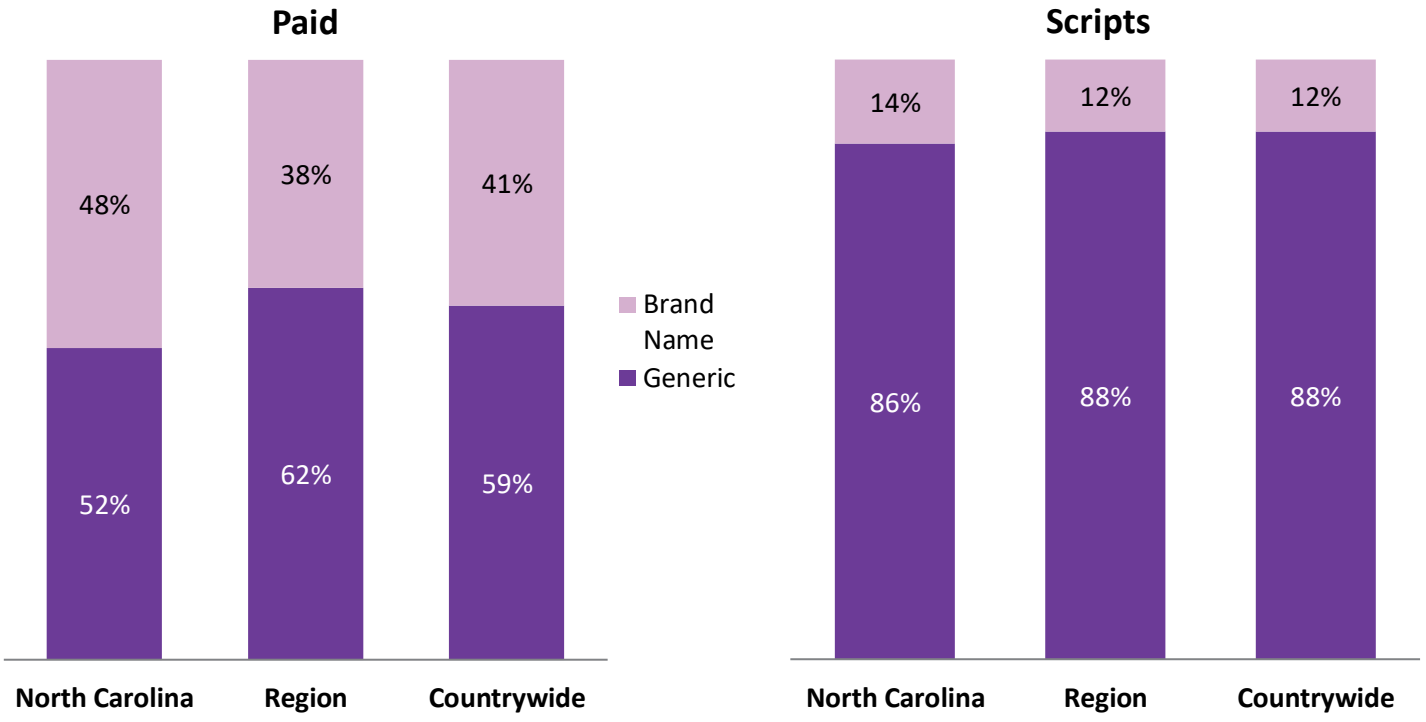
Drug Name	Average PPU NC	Region	CW	North Carolina Prescription Share
Gabapentin	$0.77	$1.07	$0.97	6.6%
Cyclobenzaprine HCl	$1.48	$1.90	$1.58	5.2%
Hydrocodone Bitartrate-Acetaminophen	$0.50	$0.57	$0.56	5.1%
Meloxicam	$2.69	$3.32	$3.12	4.8%
Ibuprofen	$0.46	$0.46	$0.43	4.3%
Tramadol HCl	$0.85	$1.22	$1.08	4.1%
Diclofenac Sodium	$1.03	$1.87	$1.68	4.0%
Oxycodone HCl-Acetaminophen	$1.34	$1.58	$1.51	3.4%
Oxycodone HCl	$0.76	$1.02	$0.91	2.8%
Tizanidine HCl	$1.05	$1.14	$1.11	2.7%

Drug Name	B/G	Common Brand Name	Category	CSA Schedule	CW Rank
Gabapentin	G	Neurontin®	Anticonvulsants	None	2
Cyclobenzaprine HCl	G	Flexeril®	Muscle Relaxants, Skeletal	None	3
Hydrocodone Bitartrate-Acetaminophen	G	Vicodin®	Analgesics/Antipyretics	II	1
Meloxicam	G	Mobic®	Analgesics/Antipyretics	None	5
Ibuprofen	G	Advil®	Analgesics/Antipyretics	None	4
Tramadol HCl	G	Ultram®	Analgesics/Antipyretics	IV	6
Diclofenac Sodium	G	Voltaren®	Analgesics/Antipyretics	None	8
Oxycodone HCl-Acetaminophen	G	Percocet®	Analgesics/Antipyretics	II	7
Oxycodone HCl	G	Oxycontin®	Analgesics/Antipyretics	II	10
Tizanidine HCl	G	Zanaflex®	Muscle Relaxants, Skeletal	None	11

Chart 54 shows the distribution of prescription drugs by brand name and generic for North Carolina, the region, and countrywide. The share between brand name and generic is displayed based on the prescription counts and the payments. Typically, a higher percentage of drugs is given in the generic form; however, higher costs occur when brand name drugs are prescribed. In many states, a prescription drug fee schedule includes rules regarding the dispensing and reimbursement rates for brand name and generic drugs.

Chart 54

Distribution of Drugs by Brand Name and Generic

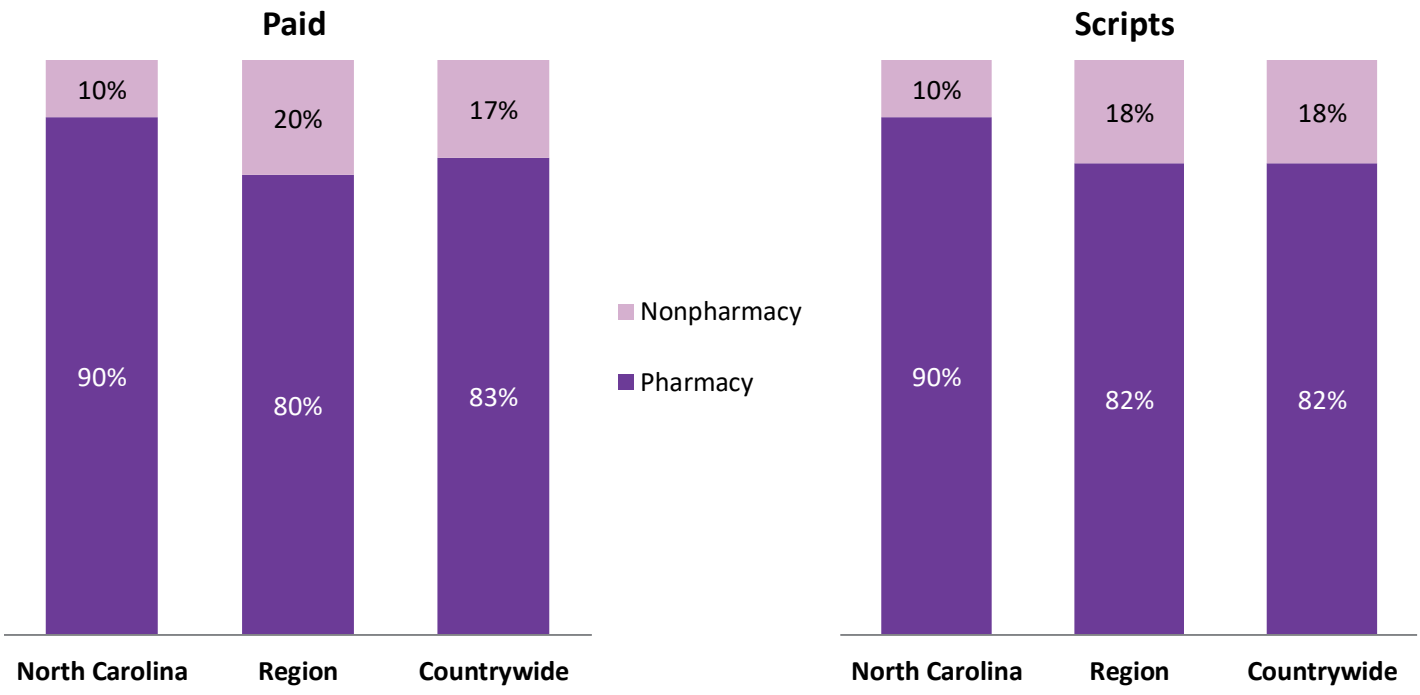


The rules on drug dispensing vary from state to state. Some states allow physician dispensing of drugs, while other states limit or prohibit physician dispensing. Analysis of the share of drugs dispensed from a pharmacy and from a nonpharmacy (e.g., physicians and hospitals) may provide insight into the drivers of drug costs.

Chart 55 shows the distribution of prescription drugs dispensed by pharmacies and nonpharmacies. The share between pharmacy-dispensed and nonpharmacy-dispensed is displayed, based on both prescription counts and payments, for North Carolina, the region, and countrywide.

Chart 55

Distribution of Drugs by Pharmacy and Nonpharmacy



Durable Medical Equipment, Prosthetics, Orthotics and Supplies

The distribution of medical payments for DMEPOS is 9% for North Carolina, 9% for the region, and 8% for countrywide.

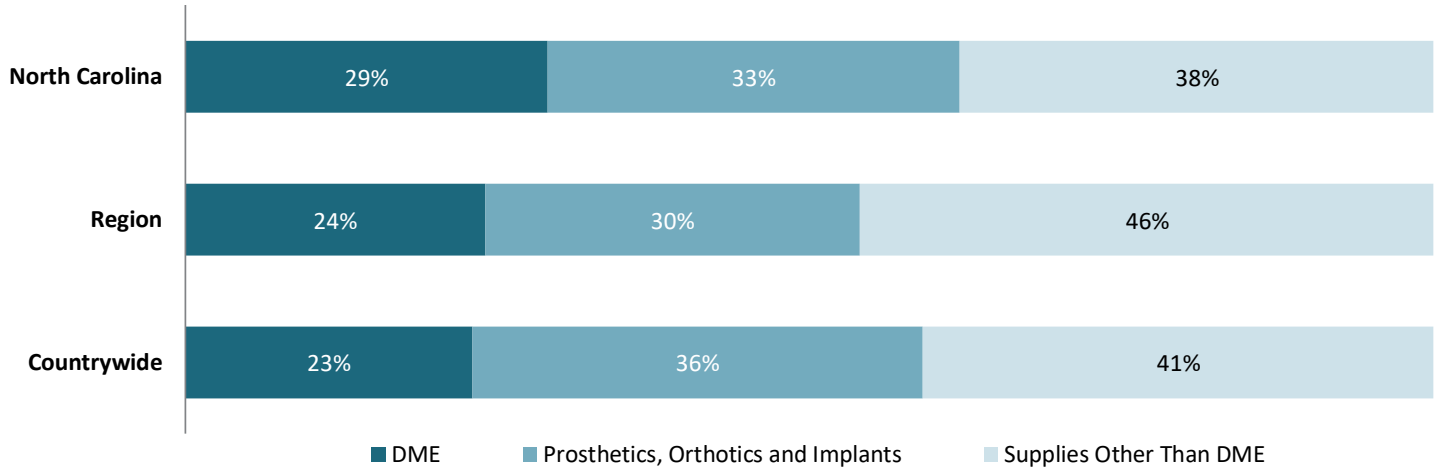
Chart 56 displays the distribution of payments among three separate DMEPOS categories:

- Durable Medical Equipment (DME)
- Prosthetics, Orthotics and Implants
- Supplies Other Than DME

Payments are mapped to each of these categories based on the procedure code reported, regardless of who provides the service or where the service is performed.

Chart 56

Distribution of Payments by DMEPOS



Injuries that include an implant or prosthetic device tend to be more expensive than other injuries. Chart 57 shows the top 10 diagnosis groups for claims that include an implant or a prosthetic device, by total paid amount. Chart 58 shows the same diagnosis groups with the average amount paid per claim for claims that do not include an implant or prosthetic.

Chart 57

Top Diagnosis Groups by Amount Paid for Dates of Injury in 2018 for Claims *With* an Implant or Prosthetic

Diagnosis Group	Paid Share	Average Amount Paid Per Claim		
		North Carolina	Region	Countrywide
Tibia/fibula fracture	9.1%	$72,128	$91,286	$80,160
Sepsis	7.2%	$1,254,415	$258,473	$316,768
Hand/wrist fracture	5.1%	$26,205	$27,175	$27,006
Rotator cuff tear	4.6%	$26,362	$37,152	$38,968
Injury of unspecified body region	4.5%	$79,014	$57,989	$74,329
Traumatic brain injury	4.1%	$202,079	$226,633	$255,002
Hip/pelvis fracture/major trauma	3.8%	$47,225	$90,117	$82,633
Minor shoulder injury	2.8%	$20,523	$26,524	$29,941
Ankle fracture	2.7%	$28,887	$41,953	$35,742
Heel/midfoot fracture	2.7%	$30,387	$44,421	$41,294

Chart 58

Average Amount Paid per Claim *Without* an Implant or Prosthetic for Diagnosis Groups in Chart 57

Diagnosis Group	Average Amount Paid Per Claim		
	North Carolina	Region	Countrywide
Tibia/fibula fracture	$16,685	$19,046	$17,907
Sepsis	$27,637	$55,281	$45,263
Hand/wrist fracture	$4,644	$6,317	$6,001
Rotator cuff tear	$14,472	$17,934	$20,199
Injury of unspecified body region	$4,169	$3,814	$3,348
Traumatic brain injury	$31,554	$44,418	$44,126
Hip/pelvis fracture/major trauma	$37,061	$38,669	$38,260
Minor shoulder injury	$3,468	$3,290	$3,950
Ankle fracture	$15,116	$13,628	$14,179
Heel/midfoot fracture	$6,909	$7,098	$7,023

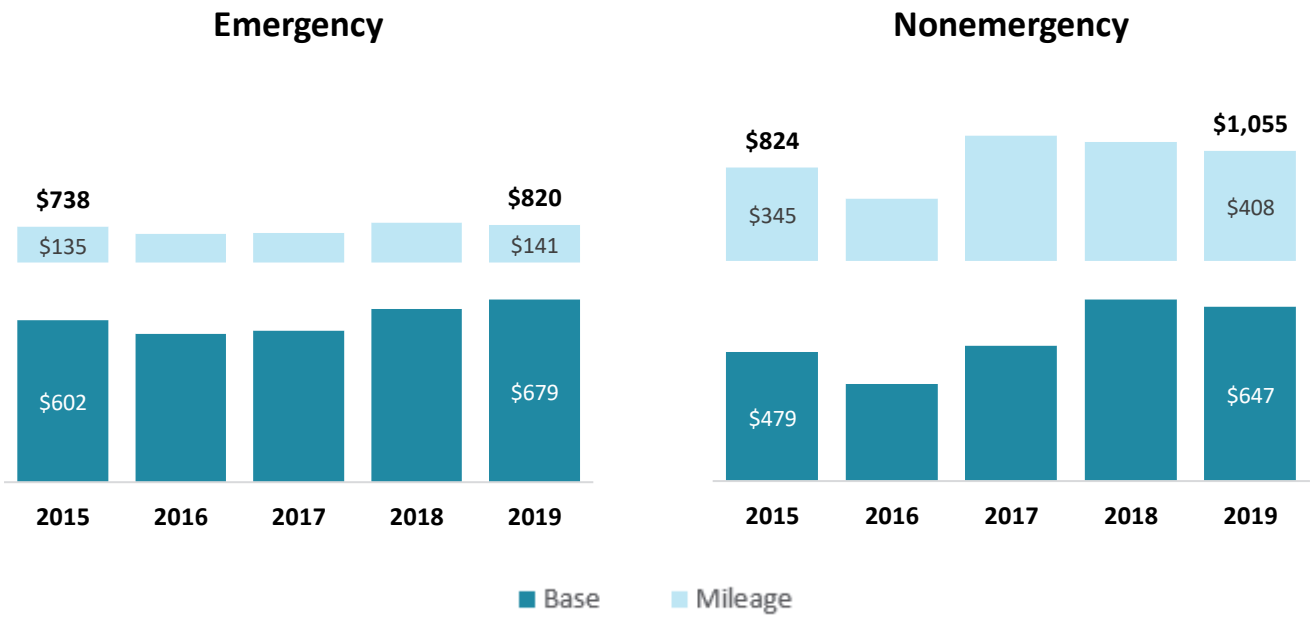
Transportation

For Service Year 2019, transportation services represent less than 2% of total medical costs countrywide. The share of payments varies across jurisdictions, ranging from less than 1% to about 4% of total medical costs. Ambulance services, both ground and air, are the primary driver of transportation costs.

Ground ambulance can be split into two categories: emergency and nonemergency. In 2019, 92% of ground ambulance episodes[8] were emergencies in North Carolina. Chart 59 displays the average payment per episode for emergency and nonemergency ground ambulance episodes, and it shows this separately for the base payment and mileage payment in North Carolina. The base payment reflects the service intensity of the transport and is higher for emergency services. The mileage payment per episode is higher for nonemergency services due to the average number of miles travelled; typically, nonemergency episodes travel farther than emergency and the intensity of the service is greatly reduced.

Chart 59

Average Payment per Episode for Ground Ambulance Services



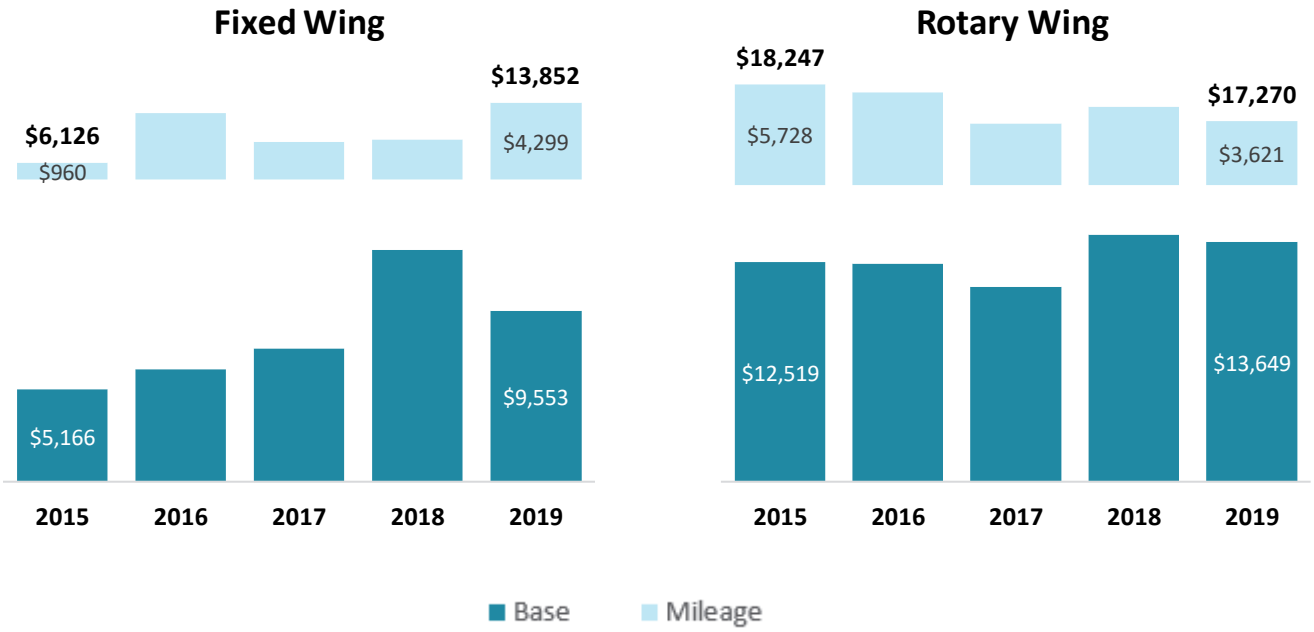
[8]An episode refers to a service or set of services provided to a claimant on a specific date.

Air ambulance episodes represent about 4% of all ambulance episodes countrywide in 2019 but account for approximately half of all ambulance payments. Air ambulance is split into two categories: rotary wing (helicopter) and fixed wing (airplane). Rotary wing episodes represent more than 85% of both payments and episodes for air ambulance services on a countrywide basis. Chart 60 displays the average payment per fixed wing and rotary wing episodes in North Carolina separately for the base payment and mileage payment.

The base rate for fixed wing transport is generally less than rotary wing because rotary wing is typically used in emergencies and fixed wing for nonemergency transport. The countrywide average distance per fixed wing transport is approximately four times that of the average rotary wing transport, making the average total payment for fixed wing transport typically higher than rotary wing transport.

Chart 60

Average Payment per Episode for Fixed and Rotary Wing Air Ambulance Services



Diagnosis Group and Body System

Charts 61 and 62 display the top 10 body systems and diagnosis groups, respectively. Body system and diagnosis group are identified for each claim based on ICD-10 code. The ICD-10 code indicates the condition for which the care is provided. NCCI assigns an ICD-10 code to each workers compensation claim based on the severity of the ICD-10 codes reported on bills by medical providers for services provided to the injured worker.

The top 10 body systems and diagnosis groups are ranked by total claim payments for North Carolina. This method of ranking shows which body systems and diagnosis groups have the highest percentage share of payments. Payments are based on claims with dates of injury between January 1, 2018, and December 31, 2018, and they include all reported services provided for those claims through December 31, 2019. As these claims mature, the mix of ICD-10 codes may change, thus impacting the percentage share of payments for a specific code over time. This mix may also affect how costs per code in North Carolina compare to countrywide costs. The state, region, and countrywide average payments per claim are also displayed for each body system and diagnosis group.

Chart 61

Top Body Systems by Amount Paid for Dates of Injury in 2018

Body System	Paid Share	Average Amount Paid Per Claim		
		North Carolina	Region	Countrywide
Shoulder	15.7%	$6,809	$8,609	$9,901
Hand/wrist	11.6%	$1,742	$2,353	$2,365
Lumbar spine	10.5%	$3,165	$4,402	$4,669
Knee	9.6%	$4,572	$5,388	$5,972
Ankle/foot	8.4%	$3,134	$3,397	$3,491
Leg	5.3%	$4,935	$7,073	$6,430
Arm	4.8%	$4,447	$5,786	$5,513
Head	4.4%	$2,700	$4,347	$3,822
Neck	4.3%	$4,442	$5,898	$5,798
Chest/upper torso	2.0%	$2,272	$4,603	$3,588

Chart 62

Top Diagnosis Groups by Amount Paid for Dates of Injury in 2018

Diagnosis Group	Paid Share	Average Amount Paid Per Claim		
		North Carolina	Region	Countrywide
Minor shoulder injury	6.1%	$3,709	$3,723	$4,559
Low back pain	5.7%	$2,062	$2,275	$2,427
Minor hand/wrist injuries	5.4%	$1,056	$1,242	$1,304
Rotator cuff tear	4.6%	$15,708	$20,927	$23,487
Hand/wrist fracture	3.8%	$5,739	$7,589	$7,514
Minor knee injury	3.8%	$2,423	$2,300	$2,621
Minor ankle/foot injuries	3.2%	$1,627	$1,566	$1,741
Injury of unspecified body region	3.1%	$5,468	$4,226	$3,803
Tibia/fibula fracture	3.1%	$27,625	$35,385	$31,349
Neck pain	2.0%	$2,440	$3,109	$3,226

Comparison of Selected Results by Year

The charts in this section provide a comparison of results for North Carolina. These comparisons are over the latest five service years unless otherwise noted. Analysis in the growth of shares may provide additional insight into medical cost drivers above and beyond an analysis at a specific point in time.

Results in the charts below may vary compared to medical reports from previous years. This is due to a lag in reporting, as well as improved derivations affecting categories for certain charts.

Distribution of Medical Payments (Chart 4)

Medical Category	2015	2016	2017	2018	2019
Physician	38%	41%	42%	41%	40%
Hospital Outpatient	16%	16%	16%	18%	18%
Hospital Inpatient	12%	12%	12%	13%	15%
Drugs	13%	12%	11%	9%	8%
DMEPOS	10%	9%	9%	9%	9%
ASC	5%	4%	4%	4%	4%
Other	6%	6%	6%	6%	6%

Distribution of Physician Payments by AMA Service Category (Chart 6)

AMA Service Category	2015	2016	2017	2018	2019
Physical Medicine	32%	37%	36%	39%	39%
Surgery	22%	20%	19%	18%	17%
Evaluation and Management	23%	25%	26%	26%	25%
Radiology	12%	9%	9%	9%	9%
Anesthesia	3%	3%	3%	2%	2%
General Medicine	3%	3%	3%	3%	3%
Other	3%	2%	3%	2%	4%
Pathology	2%	1%	1%	1%	1%

Median Time Until First Treatment (in Days) (Charts 11, 14, 17, 20, 28, 36, 37, and 48)[9]

Medical Category	AY 2014	AY 2015	AY 2016	AY 2017	AY 2018
Physicians – Major Surgery	33	35	28	31	28
Physicians – Radiology	1	1	1	1	1
Physicians – Physical and General Medicine	35	35	35	36	36
Physicians – Evaluation and Management	1	1	1	1	1
Hospital Inpatient	0	0	0	0	0
Hospital Outpatient – Major Surgery	66	72	59	71	60
Hospital Outpatient – All Other	1	1	1	3	5
ASC – Surgery	103	99	97	96	97

75th Percentile of Time Until First Treatment (in Days) (Charts 11, 14, 17, 20, 28, 36, 37, and 48)[9]

Medical Category	AY 2014	AY 2015	AY 2016	AY 2017	AY 2018
Physicians – Major Surgery	125	124	119	124	120
Physicians – Radiology	10	10	9	10	10
Physicians – Physical and General Medicine	71	70	68	70	69
Physicians – Evaluation and Management	6	6	6	6	6
Hospital Inpatient	9	14	6	6	6
Hospital Outpatient – Major Surgery	165	156	142	153	150
Hospital Outpatient – All Other	15	21	24	28	38
ASC – Surgery	187	175	178	172	169

Hospital Inpatient Statistics (Charts 24 and 26)

Hospital Inpatient Statistics	2015	2016	2017	2018	2019
Average Amount Paid Per Stay	$25,599	$23,828	$23,945	$25,863	$28,026
Number of Stays per 1,000 Active Claims	16	16	16	15	17

[9] In the charts displaying the distribution of time until first treatment, data is organized by the year in which the injury occurred, rather than by service year and include services performed within 365 days of the date of injury.

Distribution of Hospital Outpatient Payments by Surgery and Nonsurgery (Paragraphs preceding Charts 32 and 34)

Visit Type	2015	2016	2017	2018	2019
Surgery	60%	62%	60%	61%	61%
Nonsurgery	40%	38%	40%	39%	39%

Hospital Outpatient Surgery Statistics (Charts 32 and 33)

Hospital Outpatient Surgery Statistics	2015	2016	2017	2018	2019
Average Amount Paid Per Visit	$3,755	$3,550	$3,380	$3,784	$3,921
Number of Visits per 1,000 Active Claims	91	93	91	96	96

Hospital Outpatient Nonsurgery Statistics (Charts 34 and 35)

Hospital Outpatient Nonsurgery Statistics	2015	2016	2017	2018	2019
Average Amount Paid Per Visit	$454	$407	$385	$428	$453
Number of Visits per 1,000 Active Claims	513	502	523	542	531

Emergency Service Statistics (Charts 41 and 42)

Emergency Service Statistics	2015	2016	2017	2018	2019
Average Amount Paid Per Visit	$1,208	$1,086	$1,040	$1,105	$1,153
Number of Visits per 1,000 Active Claims	259	258	256	267	269

ASC Surgery Statistics (Charts 46 and 47)

ASC Surgery Statistics	2015	2016	2017	2018	2019
Average Amount Paid Per Visit	$4,463	$3,466	$3,494	$3,801	$4,242
Number of Visits per 1,000 Active Claims	38	35	34	33	33

Distribution of Prescription Drug Payments by CSA Schedule (Chart 51)

CSA Schedule	2015	2016	2017	2018	2019
Schedule II	27%	26%	22%	18%	17%
Schedule III	2%	2%	2%	2%	1%
Schedule IV	6%	5%	4%	4%	4%
Schedule V	7%	8%	9%	9%	8%
Noncontrolled	58%	59%	63%	67%	70%

Distribution of Drug Payments by Brand Name and Generic (Chart 54)

Type of Drug	2015	2016	2017	2018	2019
Brand Name	48%	50%	50%	50%	48%
Generic	52%	50%	50%	50%	52%

Distribution of Drug Payments by Pharmacy and Nonpharmacy (Chart 55)

Type of Provider	2015	2016	2017	2018	2019
Pharmacy	95%	95%	93%	92%	90%
Nonpharmacy	5%	5%	7%	8%	10%

Distribution of Payments by DMEPOS (Chart 56)

Category	2015	2016	2017	2018	2019
DME	15%	20%	25%	26%	29%
Prosthetics, Orthotics and Implants	30%	32%	33%	31%	33%
Supplies Other Than DME	55%	48%	42%	43%	38%

Glossary

75th Percentile: The point on a distribution that is higher than 75% of observations and lower than 25% of observations.

Accident Year: A loss accounting definition in which experience is summarized by the calendar year in which an accident occurred.

Ambulatory Payment Classification (APC): Unit of payment under Medicare's Outpatient Prospective Payment System (OPPS) for hospital outpatient services where individual services are grouped based on similar characteristics and similar costs.

Ambulatory Surgical Center (ASC): A state-licensed facility that is used mainly to perform outpatient surgery, has a staff of physicians, has continuous physician and nursing care, and does not provide for overnight stays. An ASC can bill for facility fees much like a hospital, but it generally has a separate fee schedule.

Controlled Substances: Drugs that are regulated by the Controlled Substances Act (CSA) of 1970. Each controlled substance is contained in one of five schedules based on its medical use(s) and its potential for abuse and addiction.

CPT Code Modifiers: Modifiers are codes added to a CPT code that further describe the procedure performed without changing the meaning of the original code.

Current Procedure Terminology (CPT): A numeric coding system maintained by the American Medical Association (AMA). The CPT coding system consists of five-digit codes that are primarily used to identify medical services and procedures performed by physicians and other healthcare professionals.

Diagnosis Groups: Based on ICD-10 codes; groups based on similar injuries and parts of body.

Diagnosis-Related Groups (DRG): A system of hospital payment classifications that groups patients with similar clinical problems who are expected to require similar amounts of hospital resources.

Drugs: Includes any data reported by a National Drug Code (NDC). Also included are data for revenue codes, the Healthcare Common Procedure Code System (HCPCS), and other state-specific codes that represent drugs.

Durable Medical Equipment (DME): Equipment that is primarily and customarily used to serve a medical purpose, can withstand repeated use, could normally be rented and used by successive patients, is appropriate for use in the home, and is not generally useful to a person in the absence of an illness or injury.

Emergency Services: Services performed for patients requiring immediate attention.

Healthcare Common Procedure Coding System (HCPCS): Alphanumeric codes that include mostly nonphysician items or services such as medical supplies, ambulatory services, prostheses, etc. These are items and services not covered by Current Procedure Terminology (CPT) procedures.

ICD-10 Codes: The *International Classification of Diseases, Tenth Revision,* is a system used by physicians and other healthcare providers to classify and code all diagnoses, symptoms, and procedures recorded in conjunction with hospital care in the United States.

Injury or poisoning not otherwise classified: Body system grouping consisting of ICD-10 codes without a specific body part or system related to the injury. An example is ICD-10 code T31.0 which is "Burns involving less than 10% of body surface".

Inpatient Hospital Service: Services for a patient who is admitted to a hospital for treatment that requires at least one overnight stay (more than 24 hours in a hospital).

Inpatient Hospital Stay: A hospital admission of a patient requiring hospitalization of at least one 24-hour period.

International Statistical Classification of Diseases and Related Health Problems (ICD-10): A classification of diseases and other health problems based on diagnosis maintained by the World Health Organization (WHO).

Length of Stay: The amount of time, in days, between admission to a hospital and discharge.

Medical Data Call: Captures transaction-level detail for medical billings that were processed on or after July 1, 2010. All medical transactions with the jurisdiction state in any applicable Medical Data Call state are reportable. This includes all workers compensation claims, including medical-only claims.

Outpatient Hospital Service: Any type of medical or surgical care performed at a hospital that is not expected to result in an overnight hospital stay (less than 24 hours in a hospital).

(Paid) Procedure Code: A code from the jurisdiction-approved code table that identifies the procedure associated with the reimbursement. Examples include CPT code or revenue code.

Revenue Code: A numeric coding system used in hospital billings that provides broad classifications of the types of services provided. Some examples are emergency room, operating room, recovery room, room and board, and supplies.

Service Year: A loss accounting definition where experience is summarized by the calendar year in which a medical service was provided.

Surgery Visit: A visit in which at least one surgery procedure is performed based on the reported procedure code.

Taxonomy Code: A code that identifies the type of provider that billed for, and is being paid for, a medical service. Data reporters are instructed to use the provider taxonomy list of standard codes maintained by the National Uniform Claim Committee.

Time to Treatment (TTT): The amount of time, measured in days, between the date on which an accident occurs and the date on which the first medical service in a given category is provided.

Transaction: A line item of a medical bill.

Units: The number of units of service performed or the quantity of drugs dispensed. For Paid Procedure Codes related to medications, the quantity/units depend on the type of drug:

- For tablets, capsules, suppositories, nonfilled syringes, etc., *units* represent the actual number of the drug provided. For example, a bottle of 30 pills would have 30 units.
- For liquids, suspensions, solutions, creams, ointments, bulk powders, etc., dispensed in standard packages, the units are specified by the procedure code. For example, a cream is dispensed in a standard tube, which is defined as a single unit.
- For liquids, suspensions, solutions, creams, ointments, bulk powders, etc., that are not dispensed in standard packages, the number of units is the amount provided in its standard unit of measurement (e.g., milliliters, grams, ounces). For example, codeine cough syrup dispensed by a pharmacist into a four-ounce bottle would be reported as four units.

Visit: Any hospital outpatient or ASC service or set of services provided to a claimant on a specific date. Any visit may have more than one procedure performed, and any claimant may have more than one visit.

Appendix

The data contained in this report is reported under the jurisdiction state—the state under whose workers compensation act the claimant's benefits are being paid. Medical transactions must continue to be reported until the transactions no longer occur (i.e., the claim is closed) or 30 years from the accident date. There are nearly 30 data elements reported.

Wherever possible, standard industry codes are used because they provide a clear definition of the data, improve its accuracy and quality, and increase efficiency of computer systems.

Carriers differ in their handling of medical data reporting. Some carriers retain all medical claims handling internally and submit the data themselves. Others use business partners for various aspects of medical claim handling, such as third party administrators or medical bill review vendors. It is possible for a carrier to authorize its vendor to report the data on its behalf. Some carriers may use a combination of direct reporting and vendors. Although data may have been provided by an authorized vendor on behalf of a carrier, the quality, timeliness, and completeness of the data is the responsibility of the carrier.

Before a medical data provider can send files, each submitter's electronic data file must pass certification testing. This ensures that all connections, data files, and systems are functioning and processing correctly. Each medical data provider within a reporting group is required to pass certification testing. If a medical data provider reports data for more than one reporting group, that data must be certified for each group.

For more information about the Medical Data Call, please refer to the ***Medical Data Call Reporting Guidebook*** on **ncci.com**.

Medical Data Report

Opioid Utilization Supplement

For the state of

NORTH CAROLINA

October 2020

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Introduction

Prescription opioids are a class of drugs used to treat moderate to severe pain, particularly chronic intractable pain. Opioid addiction and overdose have reached epidemic levels over the past decade. According to a September 2019 update from the US Department of Health and Human Services,[1] 10.3 million Americans misused prescription opioids in 2018, resulting in an estimate of more than 130 deaths every day from an opioid-related overdose.

In response to the opioid crisis, many states have established laws and regulations to address opioid prescribing patterns for the population at large, as well as for workers compensation (WC) injuries. See the NCCI series, On Opioids, for additional insight into the industry's viewpoints on, and responses to, the opioid experience in workers compensation.

Each calendar year, NCCI produces, publishes, and delivers the North Carolina Medical Data Report to regulators, which is also made available to authenticated users on **ncci.com**. This Opioid Utilization Supplement is a supplement to the Medical Data Report and is intended to serve as a data resource for regulators and others who are interested in the prescription drug component of medical costs in workers compensation claims. Specifically, this report focuses on opioid prescriptions costs and utilization rates at the aggregate level for state, regional, and countrywide (CW) analysis.

This report has seven sections:

- Prescription Drug Statistics
- Opioid Claim Statistics
- Concurrent Use of Opioids and Benzodiazepines
- Changes in Opioid Prescribing Patterns
- Oxycodone Pill Equivalents
- Claim Distribution by Claim Maturity
- Diagnosis Group and Body System Opioid Claim Experience

The report drills down on these sections to provide details on payments and prescribing patterns.

The data contained in this report represents medical transactions for Service Years (SY) 2015 through 2019. For North Carolina in SY 2019, the reported number of transactions was more than 1,559,600, with more than $254,126,800 paid, for more than 72,800 claims, representing data from 90% 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 not included.

Unless otherwise noted, the source for all data in this report is:

- NCCI Medical Data Call, SY 2019.
- Region includes data from the following states: AL, AR, FL, GA, KY, LA, MS, SC, TN, VA, and WV.
- Countrywide includes data from the following states: 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.

[1] www.hhs.gov/opioids/about-the-epidemic/index.html.

One important caveat: Information in this report may not coincide with an analysis of a legislative provision or rule change performed in the future. Such an analysis would require evaluation of the specific drugs covered by the rule, which may be different from the way that payments or prescriptions for the drugs are categorized in this report.

Table of Contents

Prescription Drug Statistics

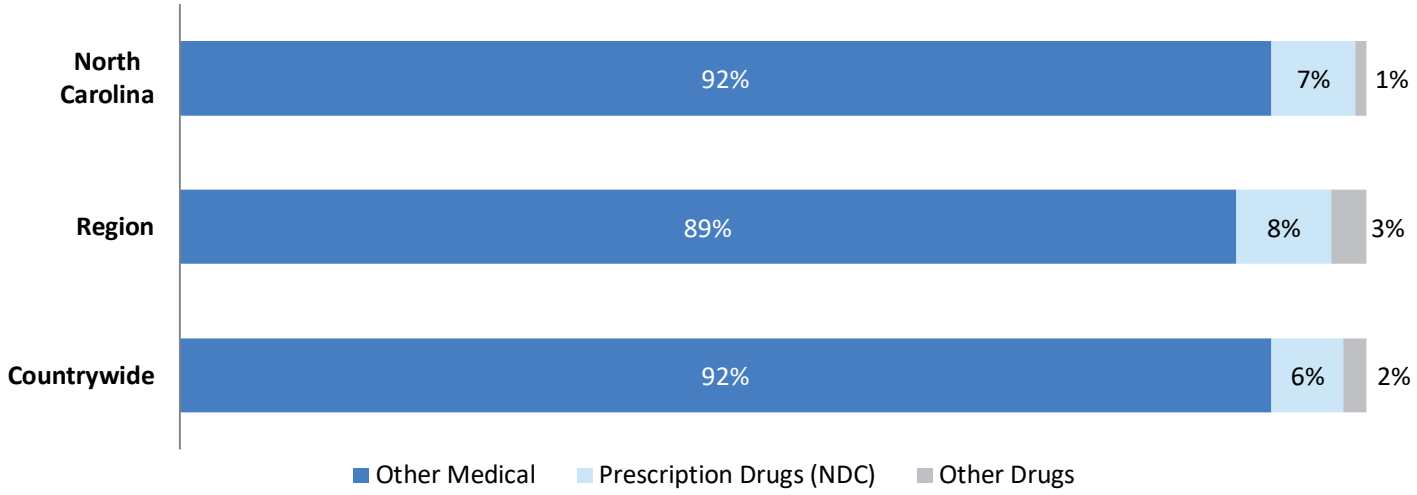
Drugs are uniquely identified by a national drug code (NDC). Charts 1 through 3 present greater detail on payments for prescription drugs reported with an NDC, whether the drugs were provided in a pharmacy, physician's office, hospital, or other place of service. Payments are categorized as drugs if the code reported on the transaction is an NDC. Drug payments can also be reported using codes other than NDCs, such as revenue codes, Healthcare Common Procedure Coding System (HCPCS) codes, and other state-specific procedure codes. These are referred to as "Other Drugs" in Chart 1.

For SY 2019, North Carolina spent $16 million on 115,000 prescriptions for workers compensation claims.

Chart 1 displays the prescription drug shares of medical payments for North Carolina, the region, and countrywide in SY 2019.

Chart 1

Drug Share of Medical Payments



The results in the charts that follow are based only on payments reported with an NDC.

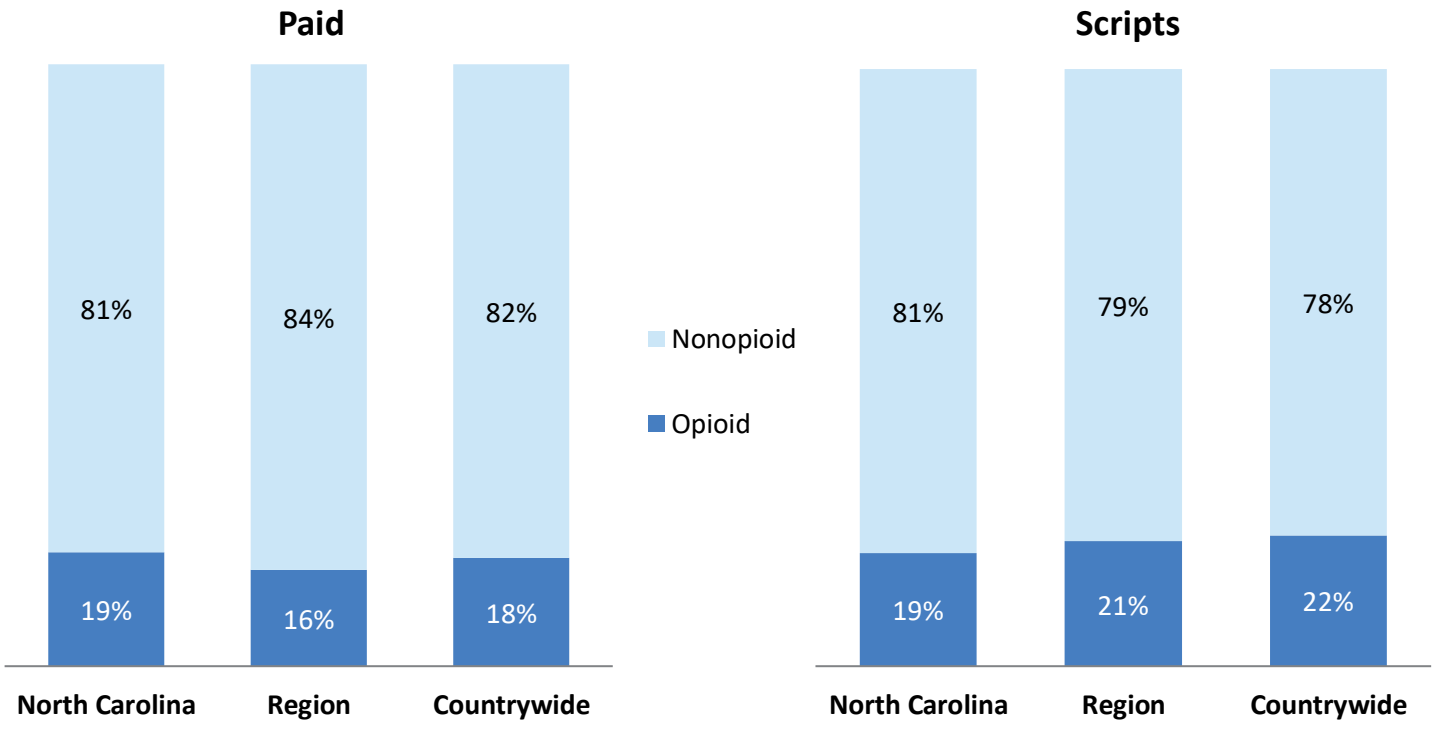
The opioid epidemic in the United States has a far-reaching impact on the workers compensation system. NCCI data shows that in recent years the average cost of prescriptions for claims with an opioid prescription is four times the average cost of a claim without opioids. One quarter of all prescription spending in the WC system is on opioids.

In 2019, North Carolina spent $3 million on 22,000 opioid prescriptions; 2 of the top 10 drugs by amount paid are opioids and account for 6% of drug payments.

Chart 2 shows the proportion of drug payments and prescription counts for opioids in North Carolina, the region, and countrywide.

Chart 2

Distribution of Drugs by Opioid and Nonopioid



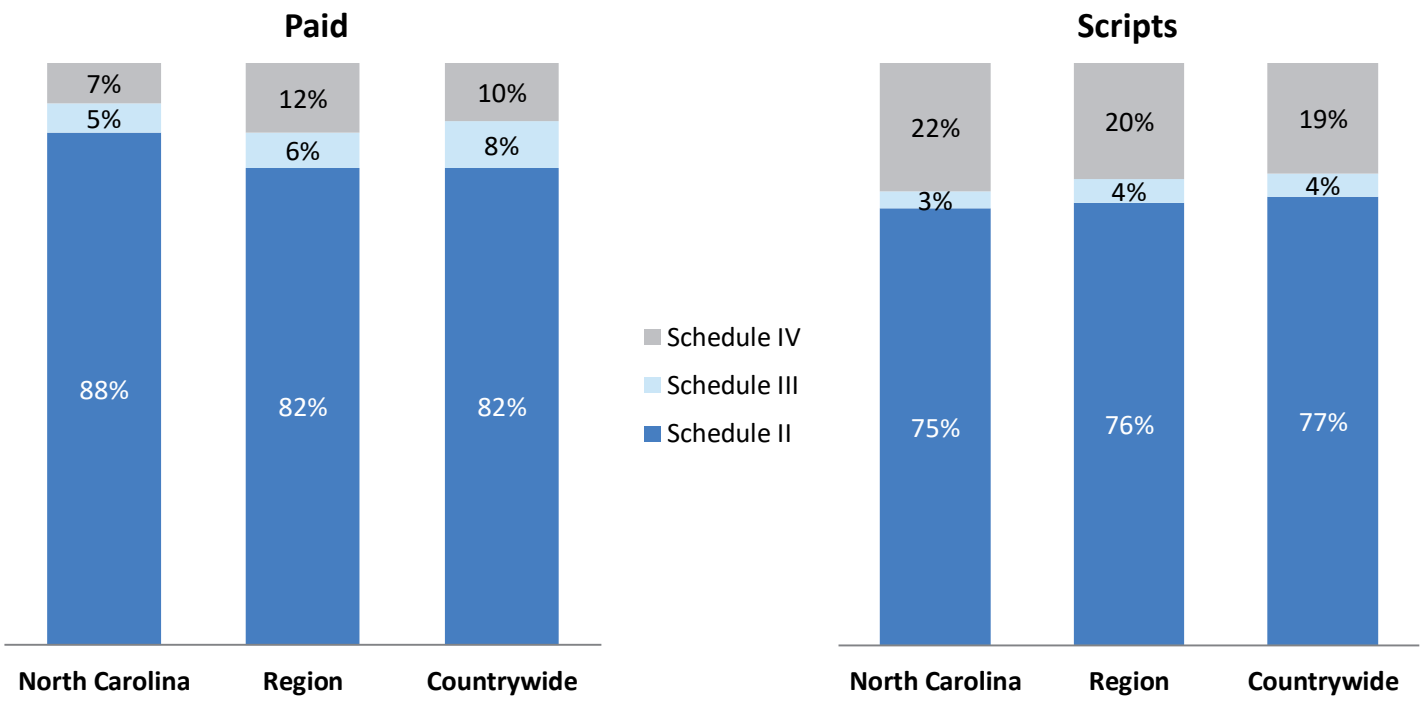
Opioids are subject to the Controlled Substance Act (CSA), passed in 1970 to regulate the manufacture, distribution, possession, and use of certain drugs. Five controlled substance schedules are determined by varying qualifications, such as the drug's medical uses, if any, and its potential for abuse. For example, Schedule V drugs, such as codeine, are defined as having the lowest potential for abuse, while Schedule I drugs, such as heroin, are illegal at the federal level and are defined as having no currently accepted medical uses and a high potential for abuse.

According to the Diversion Control Division of the Drug Enforcement Administration (DEA),[2] schedule drug prescribing must adhere to certain rules. A prescription for a schedule drug must be written in ink or indelible pencil or typewritten and must be manually signed by the practitioner or their designee, as is required for Schedule II prescriptions. While prescriptions for Schedules III and IV controlled substances may be refilled up to five times in six months, a Schedule II prescription may not be refilled, requiring a new prescription to be issued each time.

Opioids are largely Schedule II and Schedule III drugs. Chart 3 shows the percentage of opioid payments and opioid prescriptions by schedule[3] for North Carolina, the region, and countrywide.

Chart 3

Distribution of Opioids by 2020 Drug Schedule



[2] www.deadiversion.usdoj.gov/faq/prescriptions_faq.htm.
[3] Schedule assignment reflects the DEA's schedule as of 2020.

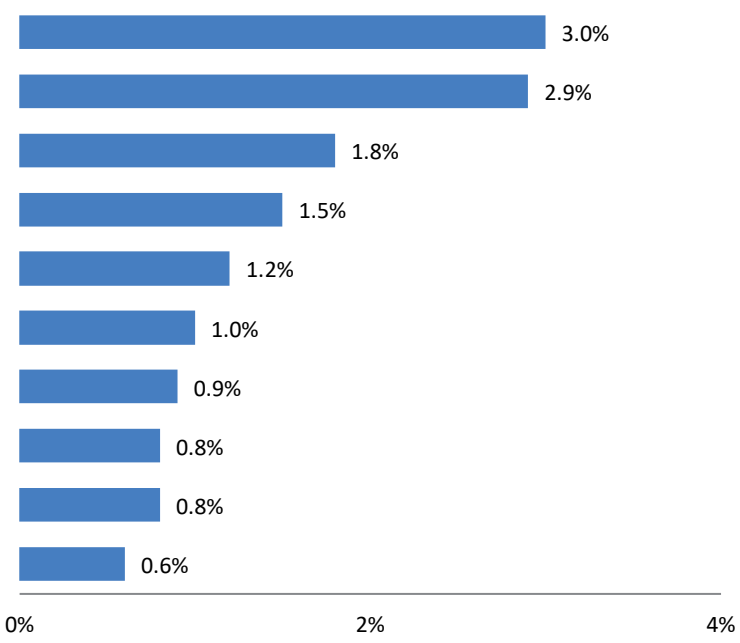
Charts 4 and 5 provide greater detail on payments for opioid prescriptions in North Carolina.

Chart 4 displays the shares of the payments of prescription medication for the top 10 opioids in WC claims and whether the drugs are generic (G) or brand name (B). This ranking method shows which drugs have the highest percentage share of payments. Also included is the amount paid per unit (PPU), common brand name, CSA schedule, and countrywide (CW) rank.

Chart 4

Top 10 Workers Compensation Opioid Drugs by Amount Paid for North Carolina

Drug Name	Average PPU NC	Region	CW
Oxycontin®	$9.21	$9.89	$9.54
Nucynta®	$8.33	$7.95	$7.97
Oxycodone HCl-Acetaminophen	$1.34	$1.58	$1.51
Nucynta ER®	$15.55	$14.61	$14.65
Tramadol HCl	$0.85	$1.22	$1.08
Oxycodone HCl	$0.76	$1.02	$0.91
Levorphanol Tartrate	$42.23	$28.05	$30.58
Percocet®	$22.10	$23.66	$22.80
Hydrocodone Bitartrate-Acetaminophen	$0.50	$0.57	$0.56
Duragesic®	$123.36	$87.71	$102.52



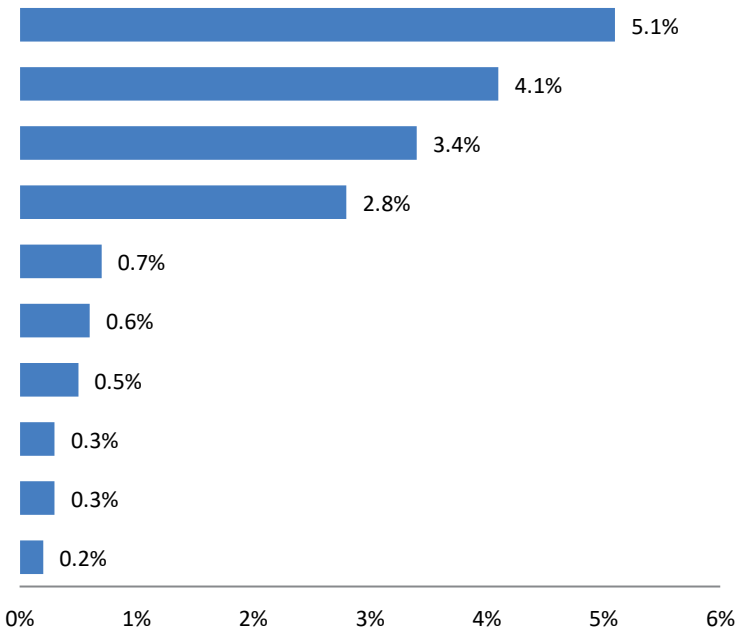
Drug Name	B/G	Common Brand Name	CSA Schedule	CW Rank
Oxycontin®	B	N/A	II	1
Nucynta®	B	N/A	II	7
Oxycodone HCl-Acetaminophen	G	Percocet®	II	2
Nucynta ER®	B	N/A	II	8
Tramadol HCl	G	Ultram®	IV	3
Oxycodone HCl	G	Oxycontin®	II	5
Levorphanol Tartrate	G	Levo-Dromoran®	II	22
Percocet®	B	N/A	II	6
Hydrocodone Bitartrate-Acetaminophen	G	Vicodin®	II	4
Duragesic®	B	N/A	II	14

Chart 5 displays the top 10 opioids in workers compensation claims according to the number of prescriptions. This chart shows the most frequently prescribed opioids and the amount paid per unit.

Chart 5

Top 10 Workers Compensation Opioid Drugs by Prescription Counts for North Carolina

Drug Name	Average PPU NC	Region	CW
Hydrocodone Bitartrate-Acetaminophen	$0.50	$0.57	$0.56
Tramadol HCl	$0.85	$1.22	$1.08
Oxycodone HCl-Acetaminophen	$1.34	$1.58	$1.51
Oxycodone HCl	$0.76	$1.02	$0.91
Oxycontin®	$9.21	$9.89	$9.54
Nucynta®	$8.33	$7.95	$7.97
Morphine Sulfate	$1.61	$1.17	$1.26
Hydromorphone HCl	$0.87	$1.70	$1.08
Acetaminophen-Codeine Phosphate	$0.36	$0.45	$0.44
Nucynta ER®	$15.55	$14.61	$14.65



Drug Name	B/G	Common Brand Name	CSA Schedule	CW Rank
Hydrocodone Bitartrate-Acetaminophen	G	Vicodin®	II	1
Tramadol HCl	G	Ultram®	IV	2
Oxycodone HCl-Acetaminophen	G	Percocet®	II	3
Oxycodone HCl	G	Oxycontin®	II	4
Oxycontin®	B	N/A	II	5
Nucynta®	B	N/A	II	9
Morphine Sulfate	G	Duramorph®	II	6
Hydromorphone HCl	G	Dilaudid®	II	8
Acetaminophen-Codeine Phosphate	G	Tylenol® with Codeine #3	III	7
Nucynta ER®	B	N/A	II	13

Opioid Claim Statistics

In addition to providing information on workers compensation claims with opioids, this report also provides information on workers compensation claims with concurrent use of opioids and benzodiazepines (benzos). A benzo, typically a Schedule IV drug, produces central nervous system depression (as do opioids) and is most commonly used to treat insomnia and anxiety. Two examples of widely used benzos are Xanax® and Ativan®.

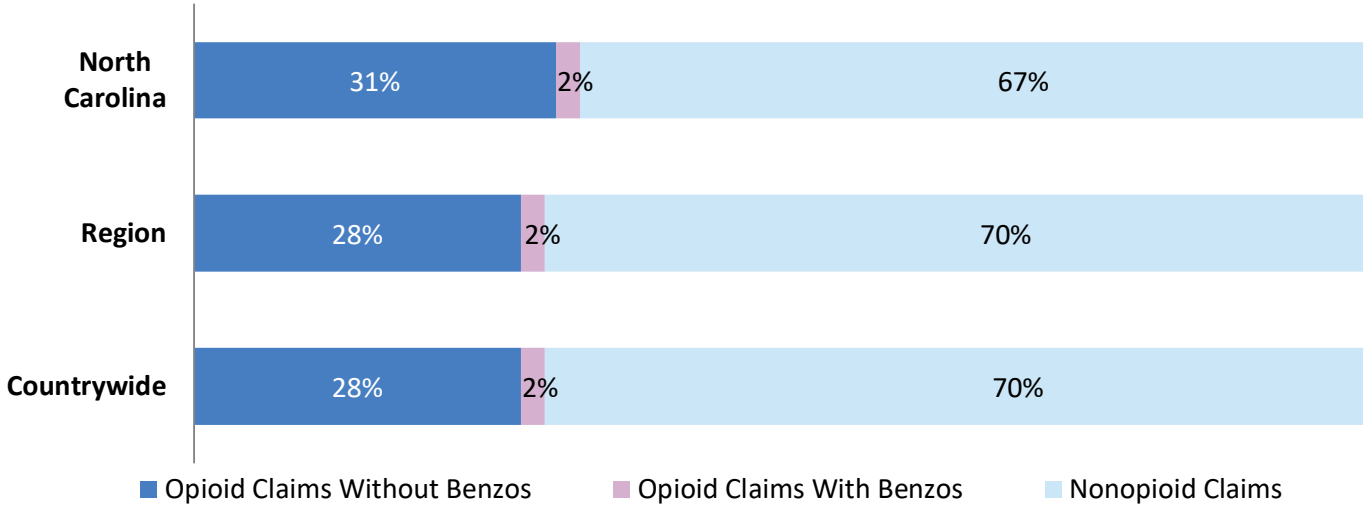
Several types of workers compensation claims are referenced in this report:

- **Rx claim**—A WC claim that had at least one prescription during the period
- **Opioid claim**—A WC claim that had at least one opioid prescription during the period
- **Nonopioid claim**—A WC claim that had at least one prescription but no opioids during the period
- **Opioid claim with benzos**—A WC claim that had at least one opioid prescription and at least one benzo prescription during the period
- **Opioid claim without benzos**—A WC claim that had at least one opioid prescription and no benzo prescriptions during the period

Chart 6 displays the distribution of Rx claims for North Carolina, the region, and countrywide for SY 2019.

Chart 6

Rx Claim Distributions



Injured workers who have been prescribed opioids are, on average, prescribed a greater number of prescriptions than those who have not. In North Carolina, a nonopioid claim has an average number of 3.3 prescriptions in SY 2019 compared to 3.4 in the region and 3.2 countrywide.

Charts 7 and 8 show the average number of opioid and nonopioid prescriptions per opioid claim and the average amount paid per opioid claim for North Carolina, the region, and countrywide.

Chart 7

Average Number of Prescriptions per Opioid Claim

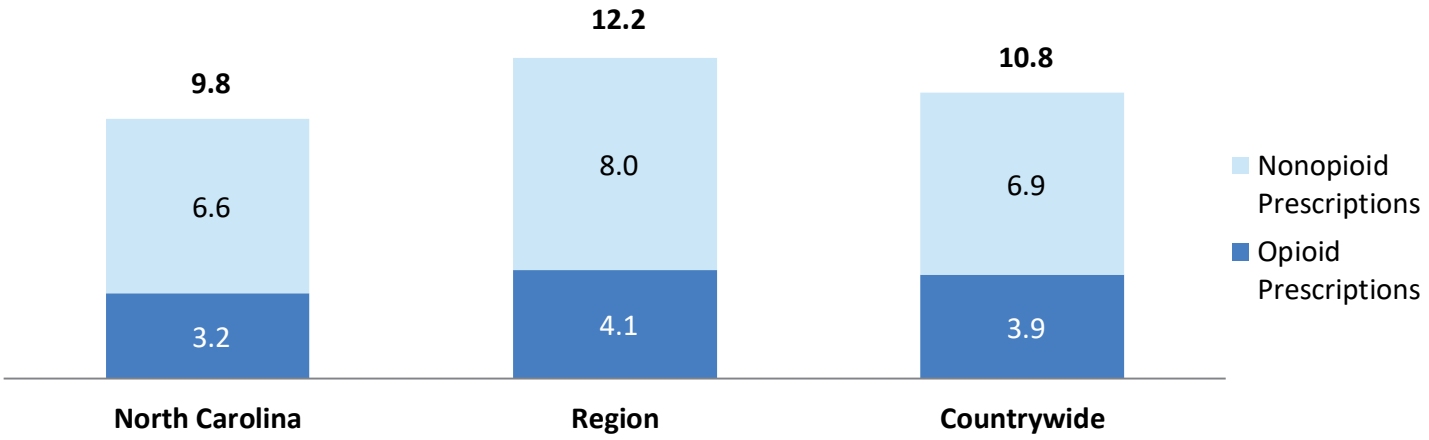
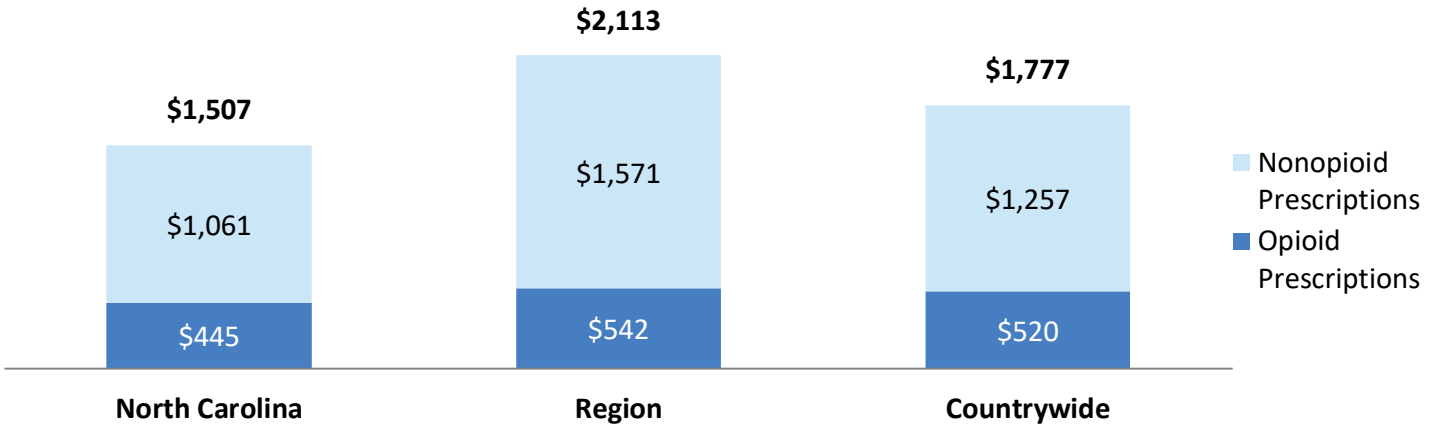


Chart 8

Average Amount Paid for Prescription Drugs per Opioid Claim



As seen in the previous chart, many nonopioid drugs are also prescribed in opioid claims. Chart 9 shows the top five nonopioid drugs by amount paid for opioid claims. Chart 10 shows the top five nonopioid drugs by number of prescriptions for opioid claims.

Chart 9

Top 5 Nonopioid Drugs for Opioid Claims by Amount Paid for North Carolina[4]

Drug Name	Common Brand Name	B/G	% of Nonopioid Drug Payments	PPU NC	PPU Region	PPU Countrywide	CW Rank
Lyrica®	N/A	B	8.7%	$8.16	$8.17	$8.18	1
Gabapentin	Neurontin®	G	5.7%	$0.77	$1.07	$0.97	2
Duloxetine HCl	Cymbalta®	G	4.1%	$4.41	$5.14	$4.71	5
Meloxicam	Mobic®	G	3.4%	$2.69	$3.32	$3.12	6
Lidocaine	Lidoderm®	G	3.3%	$5.78	$7.12	$7.01	3

Chart 10

Top 5 Nonopioid Drugs for Opioid Claims by Number of Prescriptions for North Carolina[5]

Drug Name	Common Brand Name	B/G	% of Nonopioid Drug Prescriptions	PPU NC	PPU Region	PPU Countrywide	CW Rank
Gabapentin	Neurontin®	G	10.5%	$0.77	$1.07	$0.97	1
Cyclobenzaprine HCl	Flexeril®	G	5.9%	$1.48	$1.90	$1.58	2
Meloxicam	Mobic®	G	5.7%	$2.69	$3.32	$3.12	3
Ibuprofen	Advil®	G	4.8%	$0.46	$0.46	$0.43	5
Tizanidine HCl	Zanaflex®	G	4.3%	$1.05	$1.14	$1.11	4

[4] "% of Nonopioid Drug Payments" is the share of nonopioid drug payments in opioid claims.
[5] "% of Nonopioid Drug Prescriptions" is the share of nonopioid drug prescriptions in opioid claims.

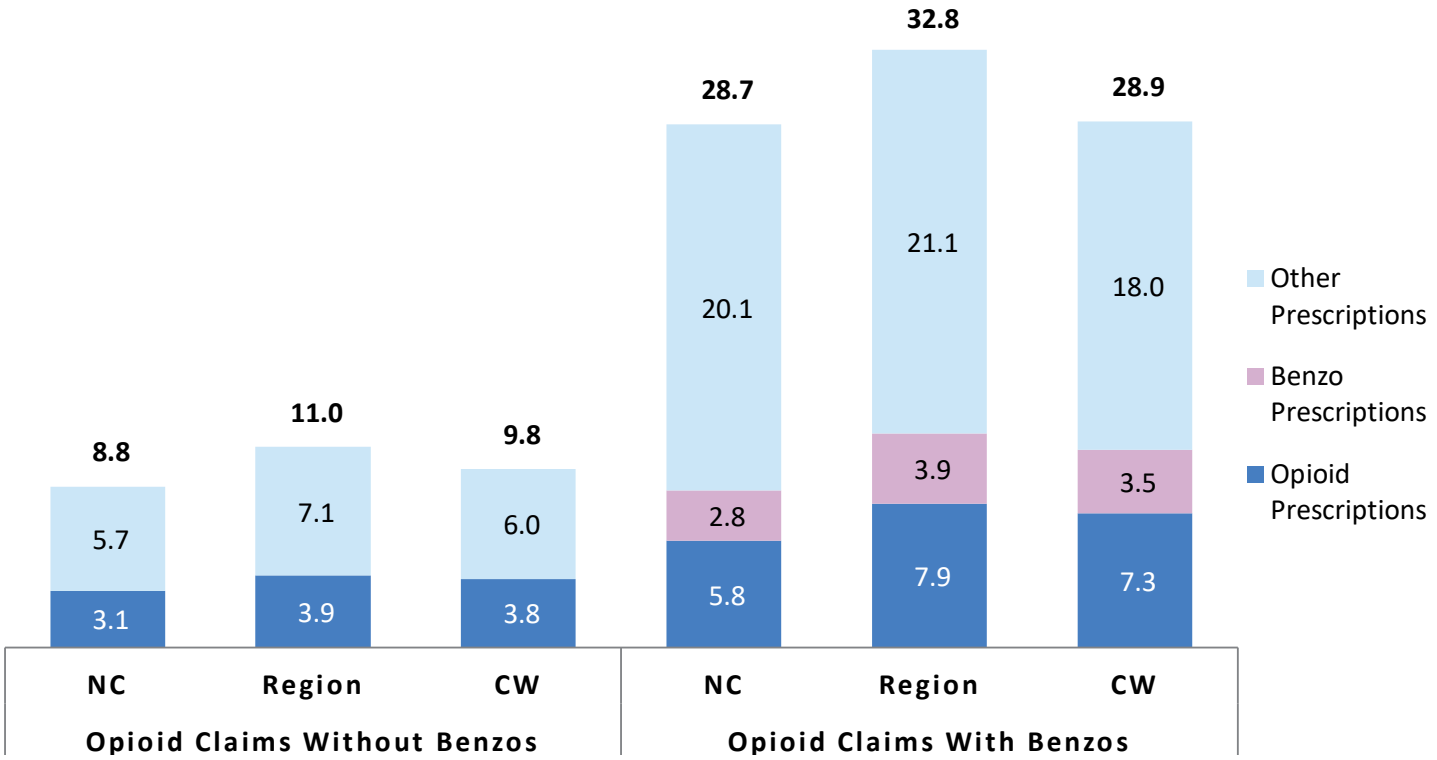
Concurrent Use of Opioids and Benzodiazepines

According to a study[6] on opioid abuse published by *The British Medical Journal*, of "2,400 veterans in the population who died because of a drug overdose while taking opioid painkiller prescriptions, 49% had been concurrently prescribed benzodiazepines." In workers compensation, the number of injured workers who are concurrently prescribed both an opioid and a benzo is relatively small. However, the number of prescription drugs and their associated costs for those injured workers are considerably higher than for workers who are not prescribed benzos.

Chart 11 displays the average number of opioid, benzo, and other types of prescriptions for opioid claims with and without benzos for North Carolina, the region, and countrywide.

Chart 11

Average Number of Prescriptions by Claim Type



[6] "Benzodiazepines and Opioids." National Institute on Drug Abuse, March 2018.

Chart 12 shows the top five benzos concurrently used with opioids for North Carolina, along with the PPU for North Carolina, the region, and countrywide.

Chart 12

Top 5 Workers Compensation Benzos by Amount Paid for North Carolina

Drug Name	Common Brand Name	B/G	% of Benzo Payments	PPU NC	PPU Region	PPU Countrywide	CW Rank
Valium®	N/A	B	15.0%	$6.12	$7.22	$7.02	4
Ativan®	N/A	B	12.3%	$33.03	$40.34	$36.70	5
Alprazolam	Xanax®	G	7.4%	$0.64	$0.68	$0.66	1
Clonazepam	Klonopin®	G	5.2%	$0.51	$0.59	$0.54	3
Temazepam	Restoril®	G	4.3%	$1.56	$0.88	$0.89	8

Changes in Opioid Prescribing Patterns

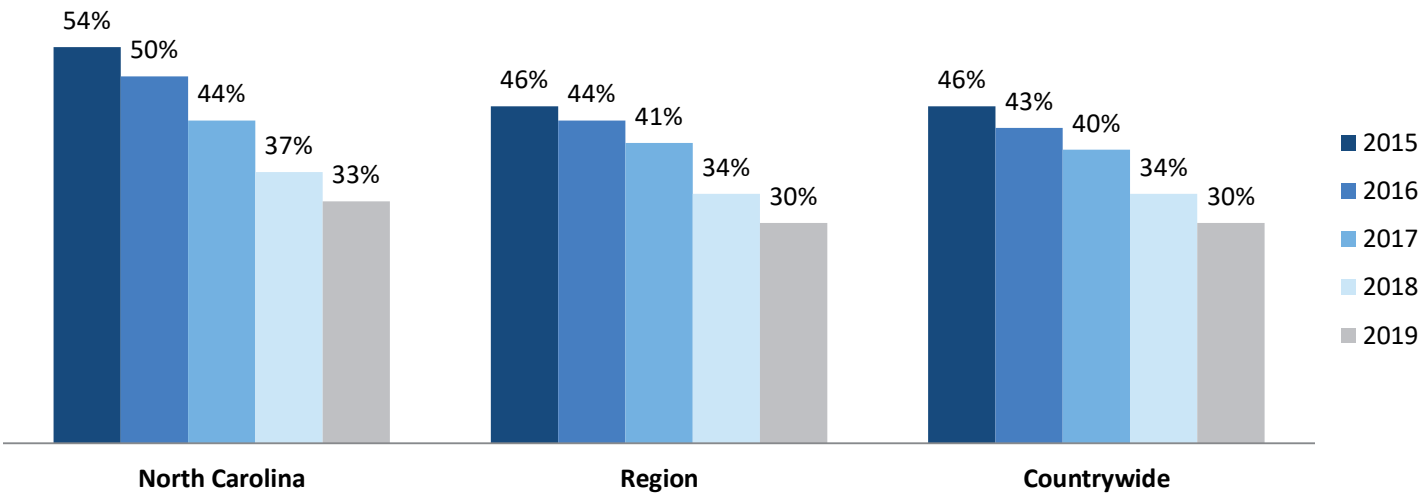
In 2017, the US Department of Health and Human Services[7] declared opioid abuse a public health emergency and created a five-point strategy to combat the opioid crisis, including increasing the availability of overdose-reversing drugs such as Narcan® and Evzio®. While the number of workers compensation claims with Narcan® or Evzio® prescriptions has been steadily increasing, less than 0.5% of opioid claims have a prescription for Narcan® or Evzio®.

Lower prescribing patterns for workers compensation claims reflect concerted efforts by the various stakeholders to respond to the opioid crisis—through rules used by regulatory agencies, guidelines for prescribing opioids, or greater attention paid by the prescribing physicians and employers to the injured workers with prescriptions.

Chart 13 shows the share of opioid claims over the latest five service years for North Carolina, the region, and countrywide.

Chart 13

Share of Drug Claims With at Least One Opioid Prescription by Service Year

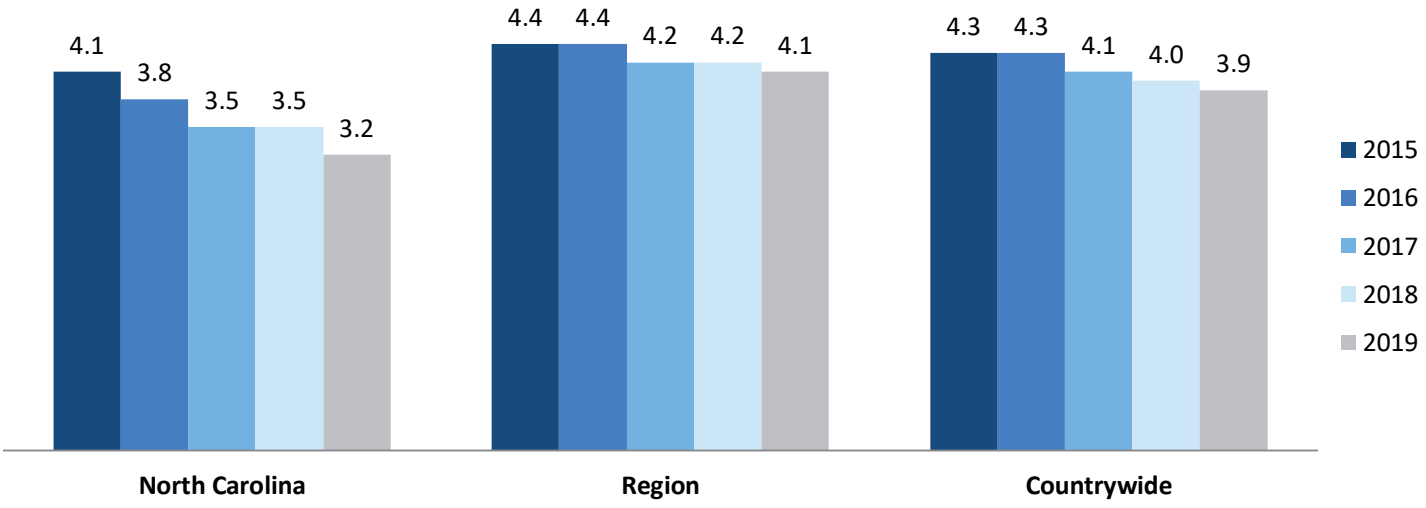


[7] www.hhs.gov/opioids/about-the-epidemic/index.html.

Chart 14 reflects the change in the average number of opioid prescriptions per opioid claim over the latest five service years in North Carolina, the region, and countrywide.

Chart 14

Average Number of Opioid Prescriptions per Opioid Claim by Service Year



Charts 15 and 16 display the change in the average opioid payment per opioid claim and per opioid prescription over the last five service years for North Carolina, the region, and countrywide.

Chart 15

Average Opioid Payment per Opioid Claim by Service Year

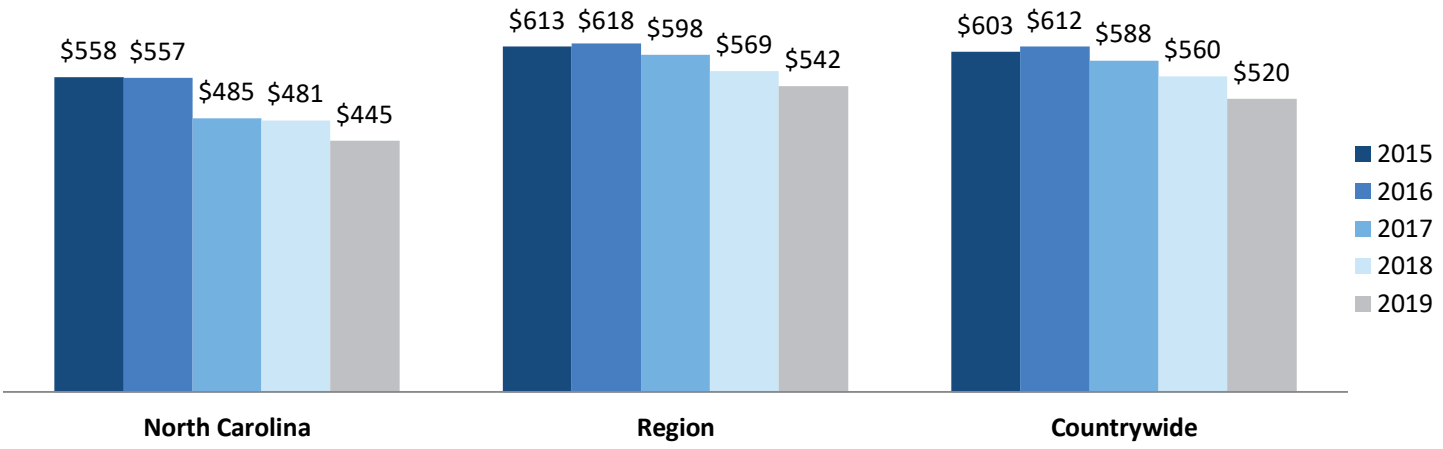
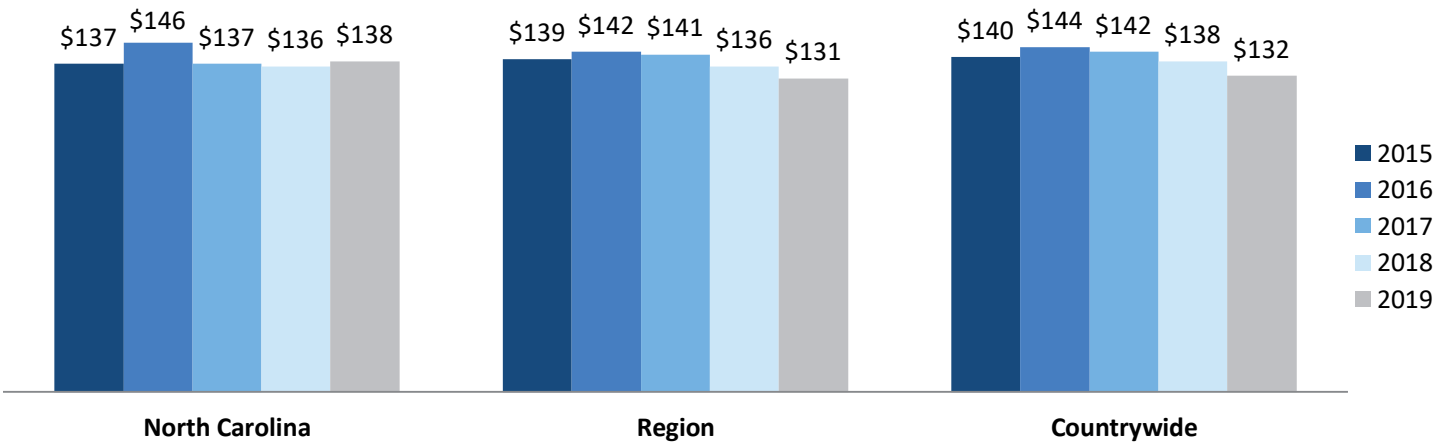


Chart 16

Average Payment per Opioid Prescription by Service Year



Oxycodone Pill Equivalents

Price inflation of prescription drugs is one factor that impacts payments over time. The content of prescriptions and dosages can also impact the payments made. Not all prescriptions are equal, and not all opioids are equal. Consequently, a comparison of prescriptions or opioid payments with a common unit of comparison can add clarity to the observed experience.

The CDC[8] provides a way to convert daily—or hourly—doses of opioids to an equivalent daily dose of morphine 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. One milligram per day of oxycodone, for instance, is assigned an MME factor of 1.5; one milligram per day of codeine, on the other hand, is assigned an MME factor of 0.15.

NCCI converts milligrams of morphine to a number of oxycodone pills and calls it the Oxycodone Pill Equivalents (OPE). A 20mg oxycodone pill, which contains 30 MMEs, is exactly 1 OPE. Oxycodone is used as the standard of reference since it is the most prevalent opioid used in workers compensation. The chart below provides sample MME and OPE conversions for some commonly used opioids.

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

Morphine Milligram Equivalents (MME)

Vicodin® (10mg)	Oxycodone (20mg)	Butrans® (20mcg/hr)
10 MMEs	30 MMEs	36 MMEs/Day

NCCI

Oxycodone Pill Equivalents (OPE)

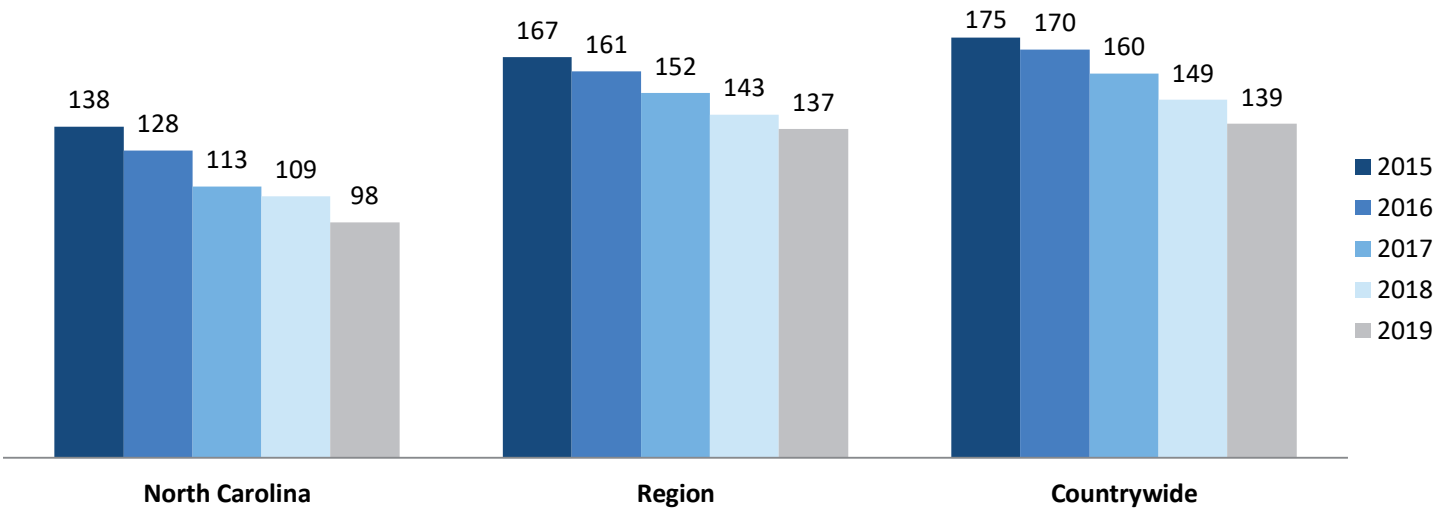
Vicodin® (10mg)	Oxycodone (20mg)	Butrans® (20mcg/hr)
0.3 OPEs	1 OPE	1.2 OPEs/Day

[8] www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf.

Chart 17 displays the average yearly amount of OPEs prescribed per claimant with at least one opioid prescription for the latest five service years in North Carolina, the region, and countrywide.

Chart 17

Average Yearly OPE per Opioid Claim by Service Year



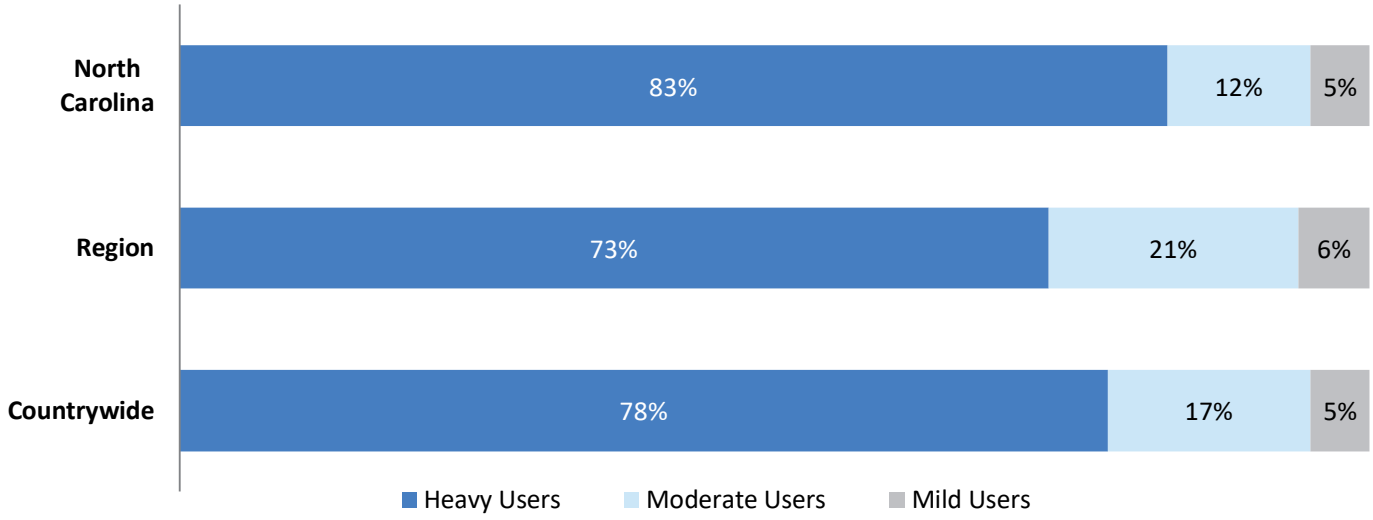
One way to recognize the extensive use of opioids is to classify claims into groups with different levels of opioid use. NCCI classifies opioid claimants based on yearly OPE consumption:

- "Heavy users" represent the top 10% of claims by OPE consumption
- "Moderate users" are in the next 20% of claims by OPE consumption
- "Mild users" are in the bottom 70% of claims by OPE consumption

Chart 18 shows the distribution of OPE by consumption classification in North Carolina, the region, and countrywide for SY 2019.

Chart 18

Distribution of OPE by Consumption Classification

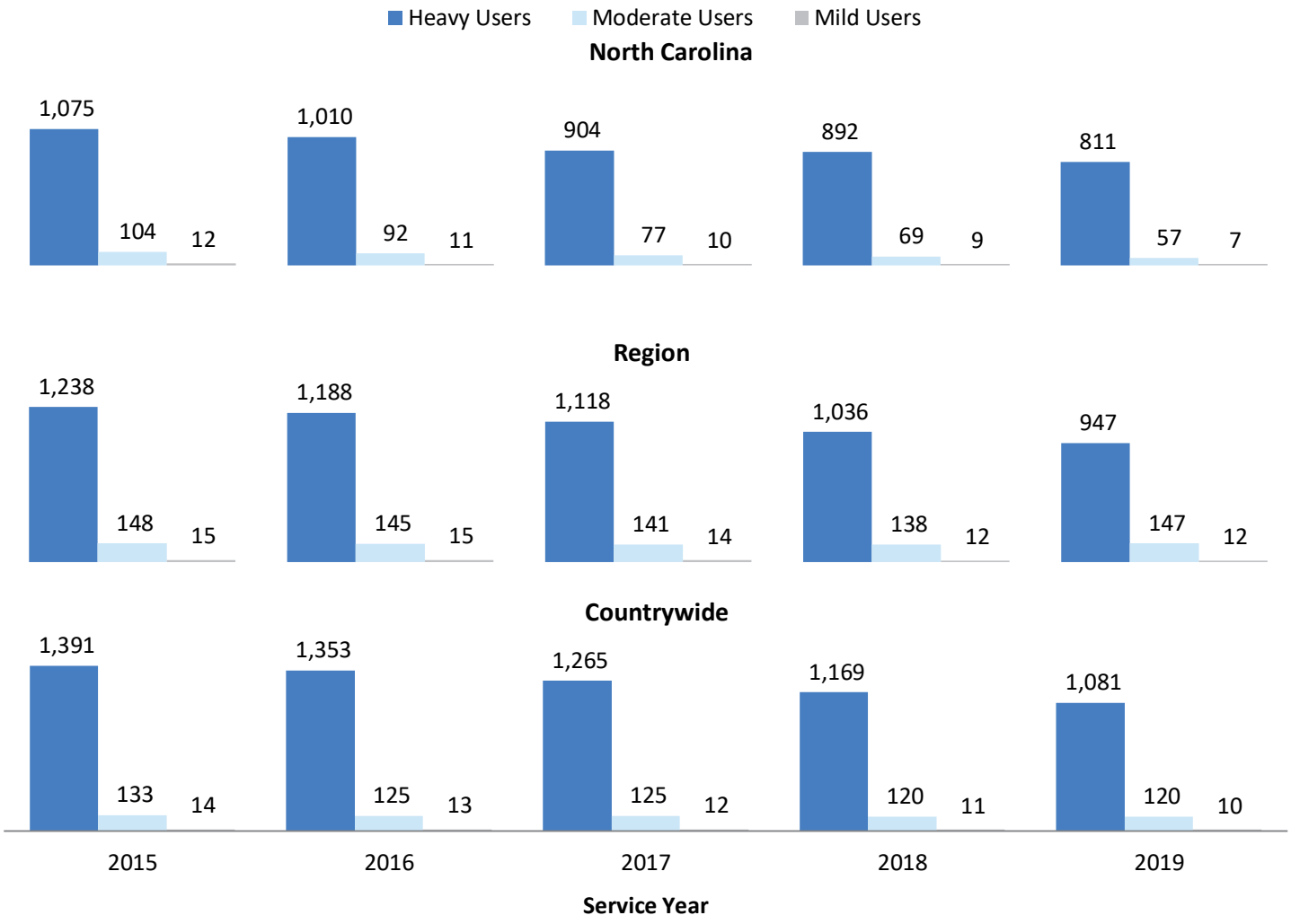


According to the CDC Guideline for Prescribing Opioids for Chronic Pain,[9] clinicians "should avoid increasing dosage to ≥90 MME/day [3 OPE/day] or carefully justify a decision to titrate dosage to ≥90 MME/day." A claimant who consumes 3 OPE per day for each day of the year would have a yearly OPE consumption of 1,095. In SY 2019, average heavy users in North Carolina were prescribed approximately 74% of the OPE of such a claimant.

Chart 19 shows the distribution of average OPE consumption within each usage classification for the latest five service years for North Carolina, the region, and countrywide.

Chart 19

Average Yearly OPE per Opioid Claim by Service Year and Classification

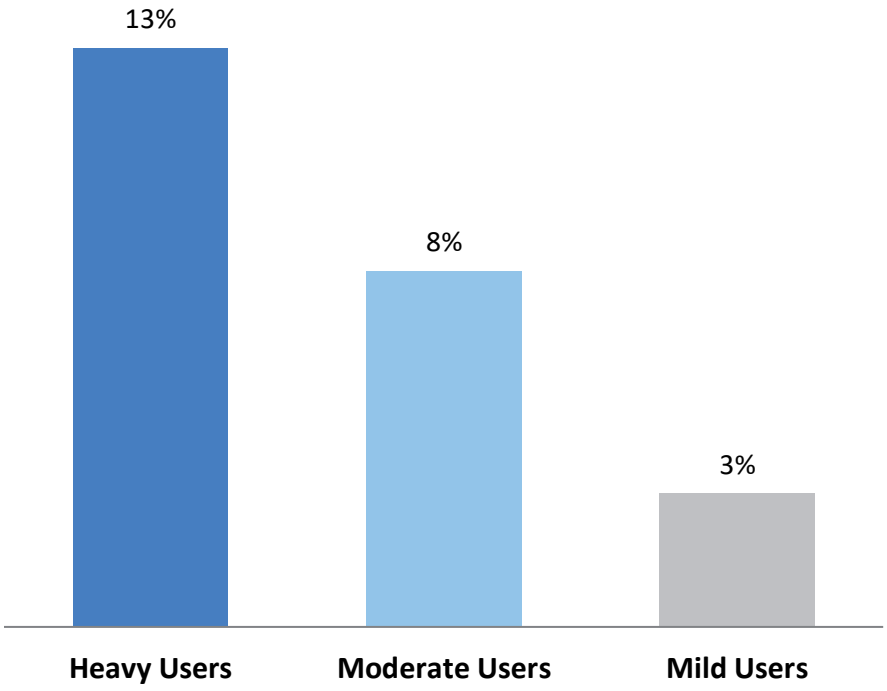


[9] www.cdc.gov/drugoverdose/pdf/guidelines_at-a-glance-a.pdf.

Heavy users are also more likely to be concurrently prescribed benzos—nearly one in five countrywide are also prescribed benzos. Chart 20 shows how often heavy users are prescribed benzos compared to mild and moderate users in North Carolina.

Chart 20

Share of Claims Prescribed Both Opioids and Benzos by Classification in North Carolina



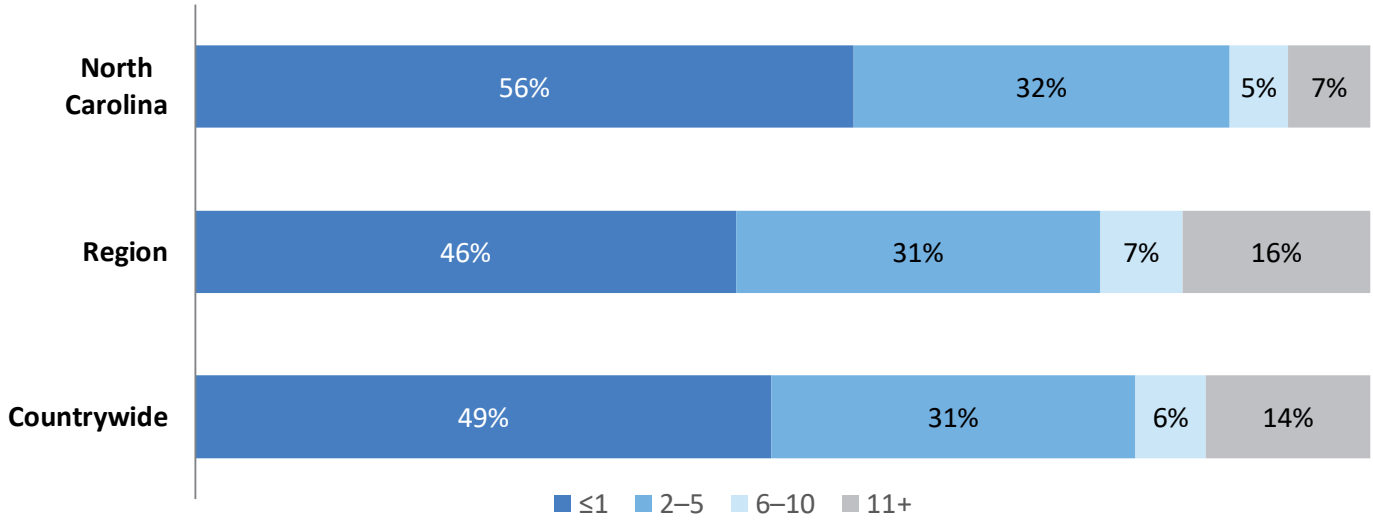
Claim Distribution by Claim Maturity

Workers compensation insurance is considered to have a long tail of liability, meaning that injured workers continue to receive medical benefits over a long period of time, sometimes 30 years or more. Observing opioid claims by claim maturity provides insight into the long-lasting usage of opioid prescriptions and their prevalence among injured workers at various stages of their disability.

Chart 21 shows the distribution of opioid claims by claim maturity for North Carolina, the region, and countrywide, where maturity is measured by the number of years from the date of injury.

Chart 21

Opioid Claim Distribution by Claim Maturity in Years



The decrease in the number of opioid prescriptions is significant for opioid claims at all years of maturity. Chart 22 shows the change in OPE per opioid claim between SYs 2015 and 2019.

Chart 22

Change in OPE per Opioid Claim by Maturity

Maturity	SY 2019 OPE Share	Change in OPE from SY 2015 to SY 2019
North Carolina		
1 Year	7%	-52%
2 to 5 Years	21%	-57%
6 to 10 Years	20%	-46%
Over 10 Years	52%	-44%
Region		
1 Year	5%	-36%
2 to 5 Years	17%	-43%
6 to 10 Years	16%	-40%
Over 10 Years	62%	-34%
Countrywide		
1 Year	5%	-38%
2 to 5 Years	15%	-49%
6 to 10 Years	16%	-42%
Over 10 Years	64%	-35%

Diagnosis Group and Body System Opioid Claim Experience

Charts 23 and 24 display the top 10 body systems and diagnosis groups, respectively, for claims with opioid experience. Body system and diagnosis group are identified for each claim based on ICD-10 (International Classification of Diseases) code. The ICD-10 code indicates the condition for which the care is provided. NCCI assigns an ICD-10 code to each workers compensation claim based on the severity of the ICD-10 codes reported on bills by medical providers for services provided to the injured worker.

The top 10 body systems and diagnosis groups are ranked by total claim payments for North Carolina. This method of ranking shows which body systems and diagnosis groups have the highest percentage share of payments. Payments are based on claims with dates of injury between January 1, 2018, and December 31, 2018, and include all reported services provided for those claims through December 31, 2019. As these claims mature, the mix of ICD-10 codes may change, thus impacting the percentage share of payments for a specific code over time. This mix may also affect how costs per code in North Carolina compare to countrywide costs. The state, region, and countrywide average payments per claim are also displayed for each body system and diagnosis group.

Chart 23

Top Body Systems by Amount Paid for Opioid Claims With Dates of Injury in 2018

Body System	Paid Share	Average Amount Paid Per Claim		
		North Carolina	Region	Countrywide
Shoulder	18.9%	$18,449	$23,194	$27,593
Knee	10.6%	$16,185	$17,425	$20,021
Lumbar spine	10.2%	$11,723	$16,596	$19,831
Ankle/foot	8.0%	$15,262	$17,270	$19,131
Hand/wrist	7.9%	$8,262	$11,451	$12,357
Leg	6.2%	$29,509	$41,702	$41,658
Arm	5.0%	$21,447	$24,223	$24,881
Neck	4.4%	$18,701	$22,575	$25,541
Head	3.7%	$32,609	$33,312	$35,054
Parasite/infection	3.4%	$374,005	$73,937	$118,934

Chart 24

Top Diagnosis Groups by Amount Paid for Opioid Claims With Dates of Injury in 2018

Diagnosis Group	Paid Share	Average Amount Paid Per Claim		
		North Carolina	Region	Countrywide
Rotator cuff tear	6.4%	$23,787	$30,690	$34,895
Minor shoulder injury	6.3%	$13,711	$13,391	$17,989
Tibia/fibula fracture	4.6%	$54,262	$64,699	$61,548
Injury of unspecified body region	3.7%	$17,468	$13,767	$12,401
Low back pain	3.5%	$6,288	$6,729	$7,756
Hand/wrist fracture	3.3%	$11,463	$14,999	$15,766
Minor knee injury	3.2%	$10,851	$8,623	$11,697
Sepsis	2.8%	$1,254,415	$126,419	$178,597
Minor hand/wrist injuries	2.5%	$5,778	$6,618	$7,860
Lumbar spine degeneration	2.5%	$34,836	$45,175	$50,694

Glossary

Benzodiazepines (Benzos): A class of drugs that produce central nervous system depression and are most commonly used to treat insomnia and anxiety.

Controlled Substance: Drugs that are regulated by the Controlled Substance Act (CSA) of 1970. Each controlled substance is contained in one of five schedules based on its medical use(s) and its potential for abuse and addiction.

Current Procedure Terminology (CPT): A numeric coding system maintained by the American Medical Association (AMA). The CPT coding system consists of five-digit codes that are primarily used to identify medical services and procedures performed by physicians and other healthcare professionals.

Drugs: Includes any data reported by a National Drug Code (NDC). Also included are data for revenue codes, the Healthcare Common Procedure Coding System (HCPCS), and other state-specific codes that represent drugs.

Healthcare Common Procedure Coding System (HCPCS): Alphanumeric codes that include mostly nonphysician items or services such as medical supplies, ambulatory services, prostheses, etc. These are items and services not covered by Current Procedure Terminology (CPT) procedures.

Medical Data Call: Captures transaction-level detail for medical billings that were processed on or after July 1, 2010. All medical transactions with the jurisdiction state in any applicable Medical Data Call state are reportable. This includes all workers compensation claims, including medical-only claims.

National Drug Code (NDC): A universal product identifier for human drugs in the United States. Each NDC code uniquely identifies a drug product based on key characteristics such as the labeler (manufacturer/distributor), active ingredients, strength, dosage form, and package form.

Opioids: A class of drugs used to treat moderate to severe pain, particularly chronic intractable pain.

Oxycodone Pill Equivalents (OPE): A standard unit for comparing opioid doses, equivalent to one 20mg oxycodone pill.

Prescription: NCCI defines a "prescription" to be synonymous with a transaction. Therefore, a refill on a prescribed drug is considered a separate prescription.

(Paid) Procedure Code: A code from the jurisdiction-approved code table that identifies the procedure associated with the reimbursement. Examples include CPT code or revenue code.

Revenue Code: A numeric coding system used in hospital billings that provides broad classifications of the types of services provided. Some examples are emergency room, operating room, recovery room, room and board, and supplies.

Service Year: A loss accounting definition where experience is summarized by the calendar year in which a medical service was provided.

Transaction: A line item on a medical bill.

Units: The number of units of service performed or the quantity of drugs dispensed. For Paid Procedure Codes related to medications, the quantity/units depend on the type of drug:

- For tablets, capsules, suppositories, nonfilled syringes, etc., it represents the actual number of the drug provided. For example, a bottle of 30 pills would have 30 units.
- For liquids, suspensions, solutions, creams, ointments, bulk powders, etc., dispensed in standard packages, the units are specified by the procedure code. For example, a cream is dispensed in a standard tube, which is defined as a single unit.
- For liquids, suspensions, solutions, creams, ointments, bulk powders, etc., that are not dispensed in standard packages, the number of units is the amount provided in its standard unit of measurement (e.g., milliliters, grams, ounces). For example, codeine cough syrup dispensed by a pharmacist into a four-ounce bottle would be reported as four units.

Appendix

The data contained in this report represents medical transactions for SY 2019 (medical services delivered from January 1, 2019, to December 31, 2019). Workers compensation insurance carriers must report paid medical transactions if they write at least 1% of the market share in any one state for which NCCI is the advisory organization. Once a carrier meets the eligibility criteria, the carrier will be required to report for all applicable states in which it writes workers compensation insurance, even if an individual state's market share is below the 1% threshold. All carriers within an insurance group are required to report, regardless of whether they write less than 1% of the market share in the state.

The data is reported under the jurisdiction state—the state under whose workers compensation act the claimant's benefits are being paid. Medical transactions must continue to be reported until the transactions no longer occur (i.e., the claim is closed) or 30 years from the accident date. Nearly 30 data elements are reported.

Wherever possible, standard industry codes are used because they:

- Provide a clear definition of the data
- Increase efficiency of computer systems
- Improve the accuracy and quality of the data

Carriers differ in their handling of medical data reporting. Some carriers retain all medical claims handling internally and submit the data themselves. Others use business partners for various aspects of medical claim handling, such as third party administrators and medical bill review vendors. It's possible for a carrier to authorize its vendor to report the data on its behalf. Some carriers may use a combination of direct reporting and vendors. Although data may have been provided by an authorized vendor on behalf of a carrier, the quality, timeliness, and completeness of the data is the responsibility of the carrier.

Before a medical data provider can send files, each submitter's electronic data file must pass certification testing. This ensures that all connections, data files, and systems are functioning and processing correctly. Each medical data provider within a reporting group is required to pass certification testing. If a medical data provider reports data for more than one reporting group, that data must be certified for each group.

For more information about the Medical Data Call, please refer to the ***Medical Data Call Reporting Guidebook*** on **ncci.com**.