



WORKERS COMPENSATION AND PRESCRIPTION DRUGS— 2018 UPDATE

INTRODUCTION

Prescription drug (Rx) costs represent a significant portion of workers compensation (WC) medical costs. NCCI periodically analyzes the factors influencing prescription drug costs such as physician dispensing, opioid use, brand name vs. generic drugs, and in-network vs. out-of-network costs. This study reports on the most recent trends observed in the use of prescription drugs in WC.

KEY FINDINGS

- The projected prescription drug share of total medical costs for Accident Year 2016 is 13.7%.
- Prescription drug costs per active claim have declined in 2015 and 2016 by 2% and 4%, respectively.
- Utilization is the main contributor to the decreases in 2015 and 2016.
- Prescription drug prices continue to rise, albeit at a slower rate than in previous years.
- Opioid costs per active claim have declined in 2015 and 2016 by 3% and 7%, respectively. Such decreases are due to lower utilization.
- Physician dispensing and brand name costs per active claim have also declined in 2015 and 2016. These decreases are due to lower utilization as well.
- In-network prescription drug costs are lower than those out-of-network.
- On average, brand name prescription drug prices have increased more than 10% per year in each of the last five years—with a cumulative increase of 80% since 2011.
- The top three drugs—Lyrica, OxyContin, and Gabapentin—account for more than 15% of prescription drug costs in 2016.

OUTLINE

The major topics covered in this update are:

- The estimated accident year prescription drug share of WC costs overall and by state
- The impact of price and utilization changes on prescription drug costs
- Opioids

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- Physician dispensing
- Brand name and generic drugs
- In-network vs. out-of-network costs

STUDY DATA

Data used in this study is from NCCI's Medical Data Call (MDC). The MDC captures transaction-level detail on WC medical bills processed on or after July 1, 2010, including dates of service, charges, payments, procedure codes, and diagnosis codes. Carriers are not required to report transactions for services provided more than 30 years after the date of the injury.

For this study, we used MDC experience evaluated as of March 2017 for:

- Prescriptions dispensed between January 1, 2011, and December 31, 2016
- The 41 jurisdictions AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, NY, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WI
- State-specific results are based on state of jurisdiction. Data is used with permission.

TERMINOLOGY

Terms used throughout this study include:

- **Rx**—Unless otherwise noted, a prescription drug is identified with a National Drug Code (NDC). Drugs that are bundled with other services and included in codes such as Hospital Revenue Codes, Healthcare Common Procedure Code System (HCPCS), or Current Procedural Terminology (CPT) are generally not included.
- **Accident Year**—The year in which an injury occurred.
- **Service Year**—The year in which a medical service is provided.
- **Relative Service Year**—The year in which services are performed relative to the accident year. For example, a service performed in 2016 for an accident that occurred in 2014 would be in the third relative service year.
- **Active claim**—A claim with at least one medical service provided during the service year.
- **Units**—One unit is a capsule, tablet, ounce, etc.
- **Cost**—The total dollars paid per claim (Cost = Price x Utilization).
- **Price**—What is paid for individual services.
- **Utilization**—The intensity of services provided per claim. This includes:
 - The number of units (tablets, capsules, etc.) of prescription drugs provided per claim.
 - The mix of prescription drugs provided on a claim, e.g., OxyContin versus Ibuprofen.
- **Opioids**—Prescription drugs identified by their therapeutic class codes and published by the American Hospital Formulary Service.
- **Countrywide**—Aggregate results based on states included in the study.
- **Incremental Prescription Drug Share of Total Medical Payments**—The prescription drug share of total medical payments for a given accident year and relative service year. The following example illustrates the intended use of the terminology. Suppose that:
 - Prescription drug payments in Accident Year 2016 and Relative Service Year 2 are \$100. These are payments for prescriptions dispensed in 2017 for injuries that occurred in 2016.
 - Total medical payments in Accident Year 2016 and Relative Service Year 2 are \$200.
 - Then the incremental prescription drug share of total medical payments for this period is equal to $\$100 / \$200 = 50\%$.

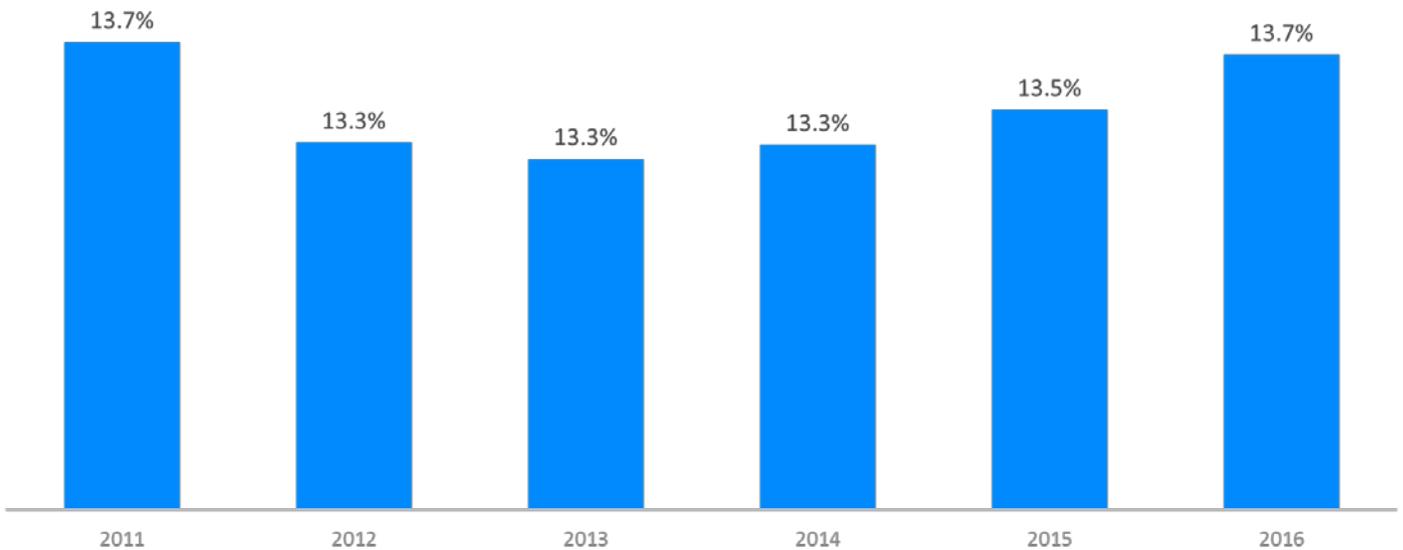
PRESCRIPTION DRUG SHARE OF TOTAL MEDICAL

Prescription drug costs are a significant share of overall workers compensation medical costs. Exhibit 1 shows the projected prescription drug shares of total medical costs for Accident Years 2011 to 2016. As shown below, these values appear stable over the years shown.

The projected Rx share of total medical costs for Accident Year 2016 is 13.7%.¹ These projections are somewhat lower than projections in previous NCCI reports. The main reason for the reduction in the projected Rx share of total medical is that in previous NCCI studies, for many given relative service years, the Rx share of total medical by accident year had been increasing, and previous projections assumed that the observed upward trend would continue for a few more years. However, the most recent data indicates a slowing in the upward trend, or even a leveling off of the shares, and that is reflected in the current projections.

The Projected Rx Share of Total Medical Costs Is Stable

Accident Year



NCCI’s analysis is based on Medical Data Call experience for prescriptions provided in Service Years 2011 to 2016. Data is used with permission.

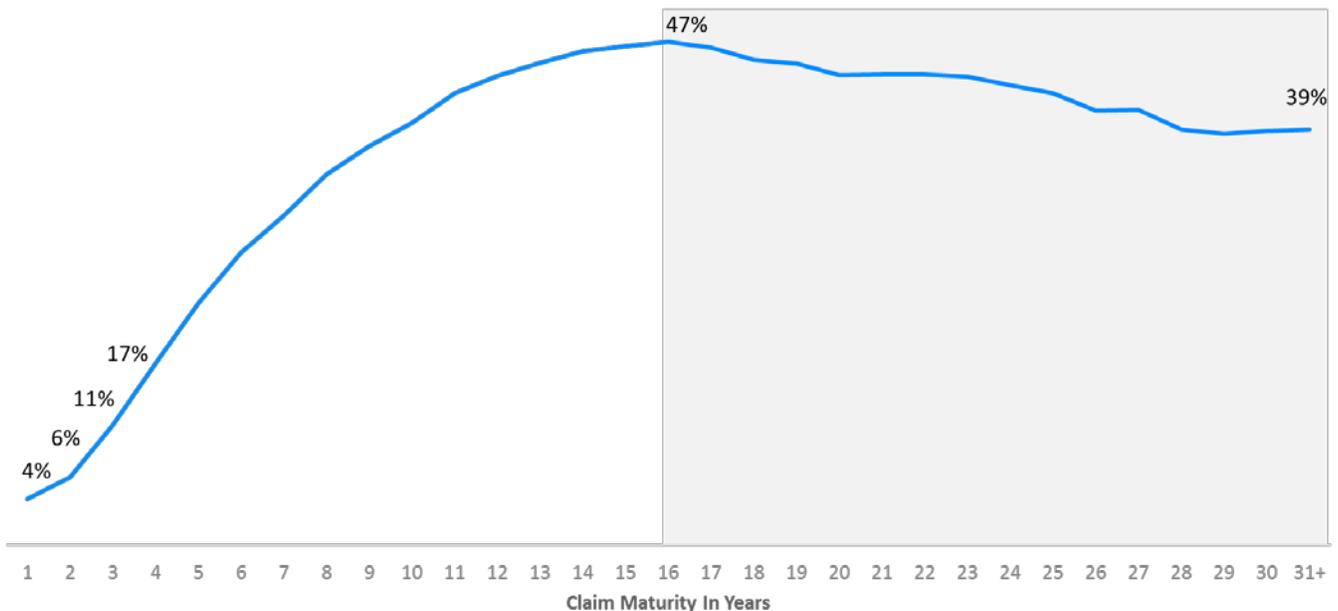
Exhibit 1

¹ The projection includes all drugs that are bundled with other services and included in codes such as Hospital Revenue Codes, HCPCS, and CPT.

Exhibit 2 shows the projected incremental prescription drug share of total medical costs for different claim maturities. Three distinct patterns can be observed:

- For claims open less than one year, the incremental prescription drug share is 4%. This low share can mostly be attributed to costlier medical services that claimants receive during the initial stages of claim development. Such medical services include diagnostic services, inpatient or outpatient surgeries, and emergency room visits.
- The incremental share of prescription drugs rises rapidly from 6% in the second service year to 47% in the 15th relative service year for claims open during that period. The swift rise can be attributed to the shift in medical treatment as medical providers focus more on providing care for medical conditions, such as pain, and less on surgical procedures.
- The steep increase in the incremental share of prescription drugs does not continue indefinitely. The section of the graph highlighted in gray shows that, after a period of rapid rise, the prescription drug share for claims older than 15 years gradually decreases from 47% to approximately 40%. As claimants age, additional hospital services may be needed, especially for those workers that suffered serious injuries. At the late stages of claim development, home healthcare and transportation costs also increase—further reducing the share of prescription drug costs.

After a Rapid Rise, the Projected Incremental Rx Share of Medical Costs Gradually Decreases As Claims Age



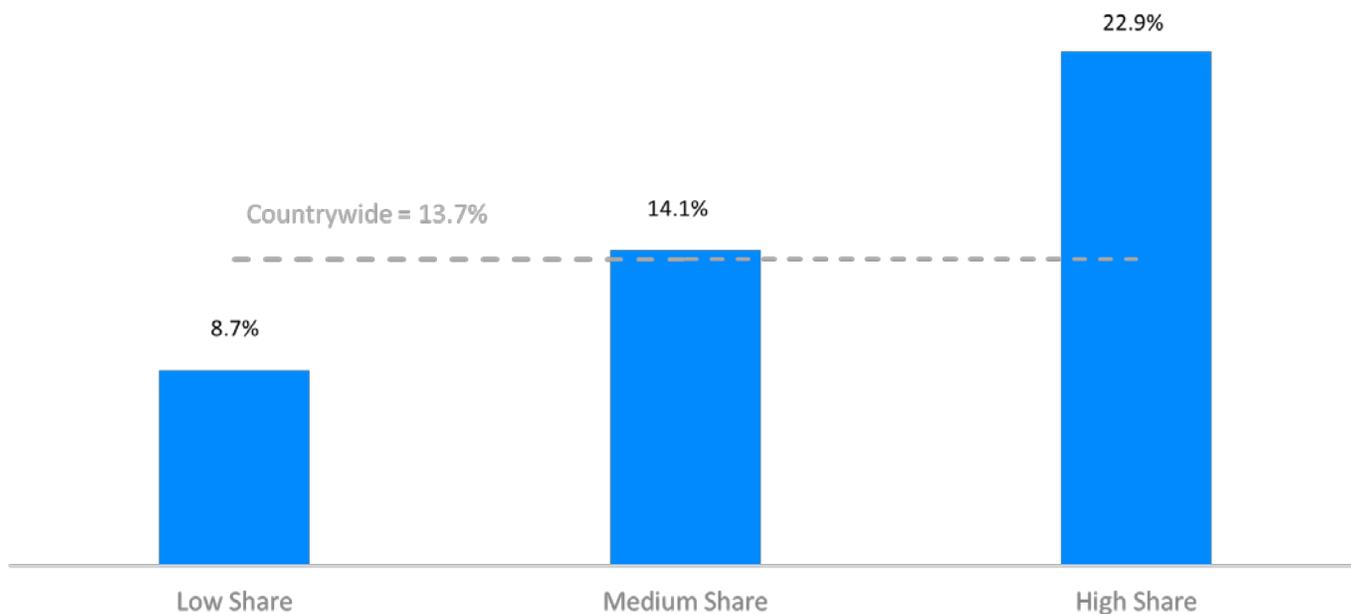
NCCI’s analysis is based on Medical Data Call experience for prescriptions provided in Service Years 2011 to 2016. Rx shares shown are the projected shares for Accident Year 2016. For example, we project that Rx costs will be 17% of total medical costs paid in 2019 (Year 4) for injuries that occurred in 2016.

Exhibit 2

The prescription drug share of medical costs varies from state to state. Exhibit 3 shows the projected prescription drug share of total medical costs for Accident Year 2016 for three state groups designated as Low, Medium, and High.² As the exhibit shows, the prescription drug share of overall medical costs varies by state group—from less than 9% in the Low group to almost 23% in the High group. Possible reasons for differences in projected prescription drug costs between state groups include differences in:

- Standard medical treatment for comparable injuries
- Prescription drug fee schedules
- Opioid use
- Prevalence of physician-dispensed drugs

Projected Rx Share of Total Medical Costs Varies by State Group Accident Year 2016



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016.

States in the Low Share group are: AK, CO, CT, IA, ID, IL, IN, KS, ME, MN, MO, NE, NH, NJ, OR, RI, VT, and WI

States in the Medium Share group are: AR, AZ, DC, FL, GA, HI, LA, MA, MS, NC, NV, OK, SD, UT, and VA

States in the High Share group are: AL, KY, MD, MT, NM, NY, SC, and TN

Exhibit 3

² These groups were developed based on the observed ratio of cumulative Rx payments to cumulative overall medical costs through Relative Service Year 30 for Service Years 2011 to 2016. Low < 10% and High > 15%.

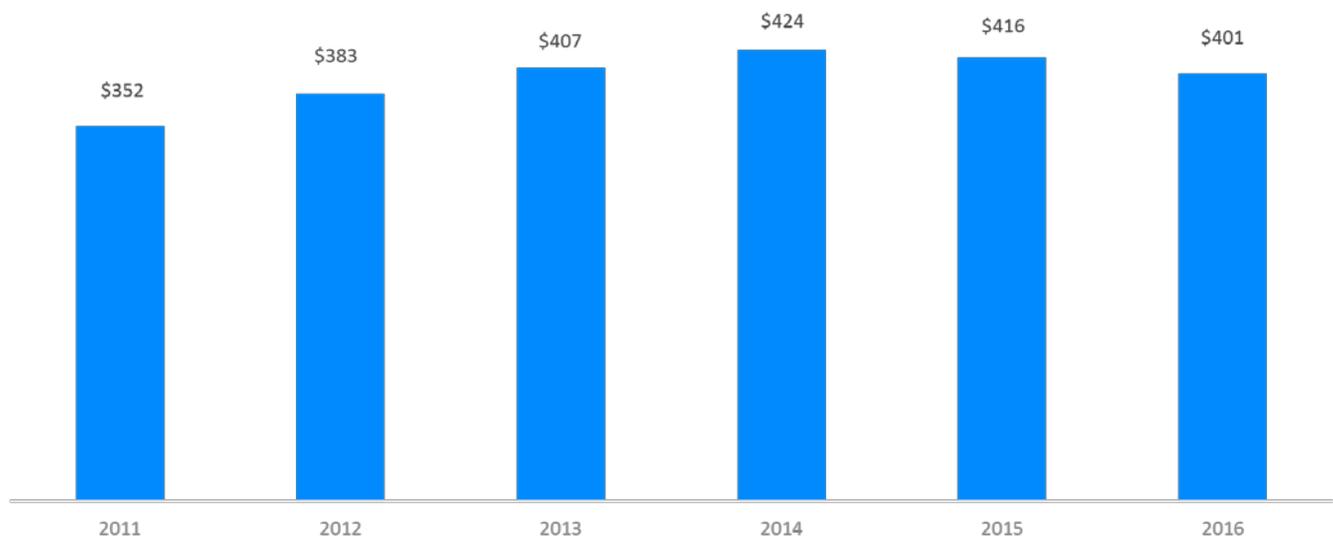
PRESCRIPTION DRUG COSTS, PRICE, AND UTILIZATION

Rx Costs per Active Claim Have Decreased Since Service Year 2014

After a period of rising costs, prescription drug costs per active claim have declined in Service Years 2015 and 2016. Exhibit 4 shows prescription drug costs per active claim by service year. Prescription drug costs per active claim rose from 2011 to 2014, reaching a high of \$424 in Service Year 2014. This represents an increase of more than 20% in Rx costs per active claim over this period. Since Service Year 2014, these costs have declined for two service years. In Service Year 2016, the prescription drug cost per active claim was \$401, which is more than a 5% decrease from Service Year 2014.

Rx Costs per Active Claim Have Been Decreasing Since 2014

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 through 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 4

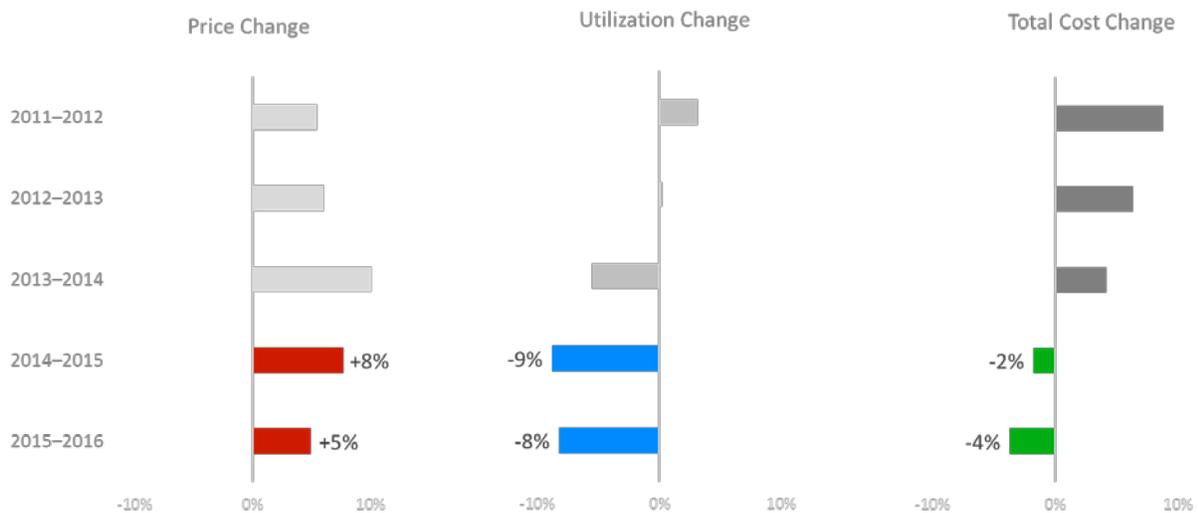
A change in prescription drug costs per active claim is composed of changes in:

- **Price**—The portion of the total cost change that can be attributed to changes in prescription drug prices.
- **Utilization**—The change in the intensity of Rx use. The change in utilization includes changes in the number of prescription drugs per claim and the impact of changes in the mix of prescription drugs (e.g., from previously used prescription drugs to alternatives). The change in utilization is computed as the difference between the change in costs per claim and the change in prices of prescription drugs.

Exhibit 5a shows the year-to-year changes in price, utilization, and prescription drug costs per active claim. Prescription drug prices have continued to rise since 2011—with increases of 8% and 5% observed in 2015 and 2016, respectively. The magnitude of these most recent price increases is less than the 10% increase observed in 2014.

While prescription drug prices continue to put upward pressure on costs, the impact of utilization has been declining. In Service Years 2015 and 2016, utilization decreased by 9% and 8%, respectively. The decrease in utilization more than offsets the increase in prices for 2015 and 2016—resulting in overall prescription drug costs declining in those years.

A Decrease in Utilization Is the Major Contributor to the Lower Rx Costs in 2015 and 2016 Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 5a

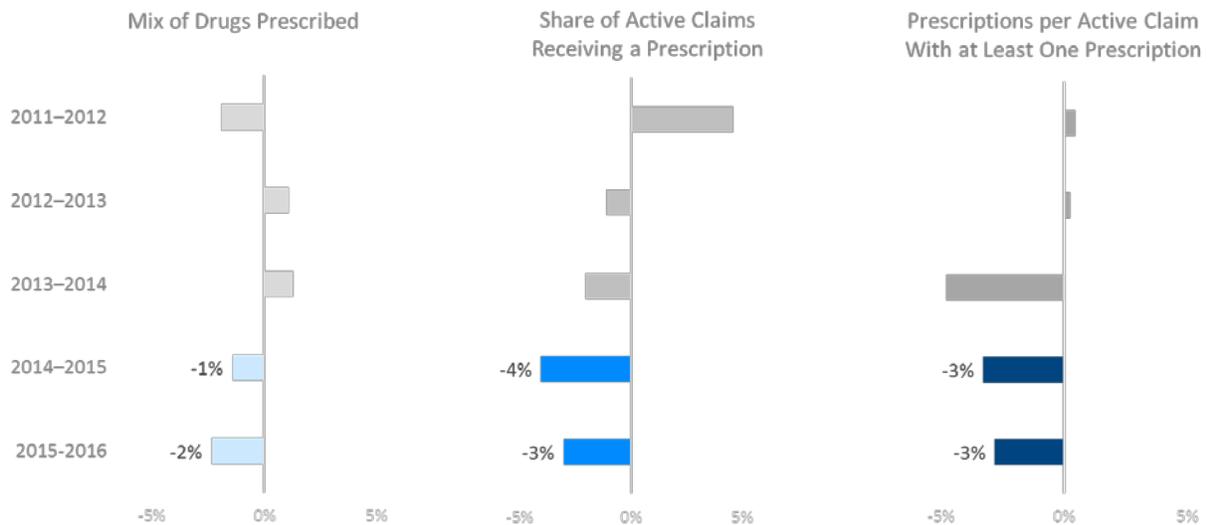
Exhibit 5b breaks down the utilization change into three components:

- Change in the mix of drugs prescribed
- Change in the share of active claims receiving a prescription
- Change in the share of prescriptions per active claim with at least one prescription

This exhibit shows that the contributions of these components to the overall utilization changes vary from year to year. In 2016, all three components had similar contributions to the utilization decline. In 2015, the utilization decline was primarily due to the change in share of claims receiving a prescription and the change in number of prescriptions per active claim having at least one prescription.

All Rx Utilization Components Decreased in 2015 and 2016

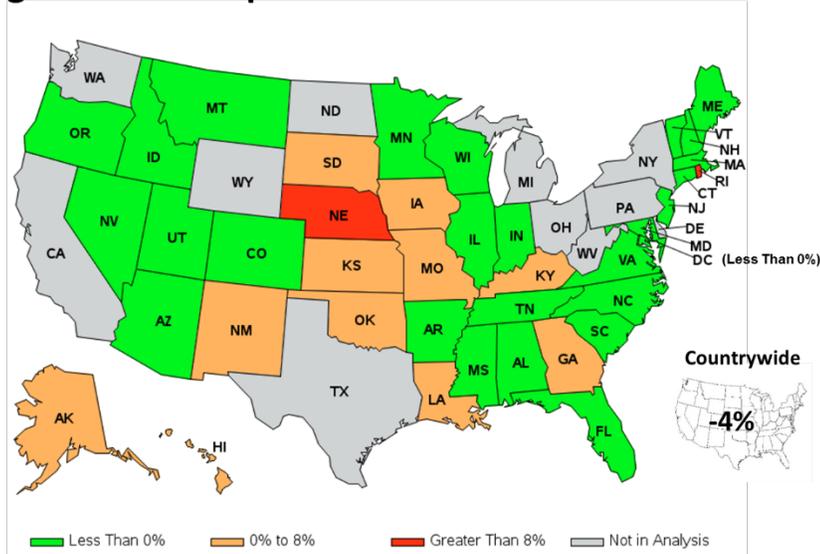
Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 through 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 5b

2016 Change in Rx Costs per Active Claim



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2015 to 2016. Data is used with permission.

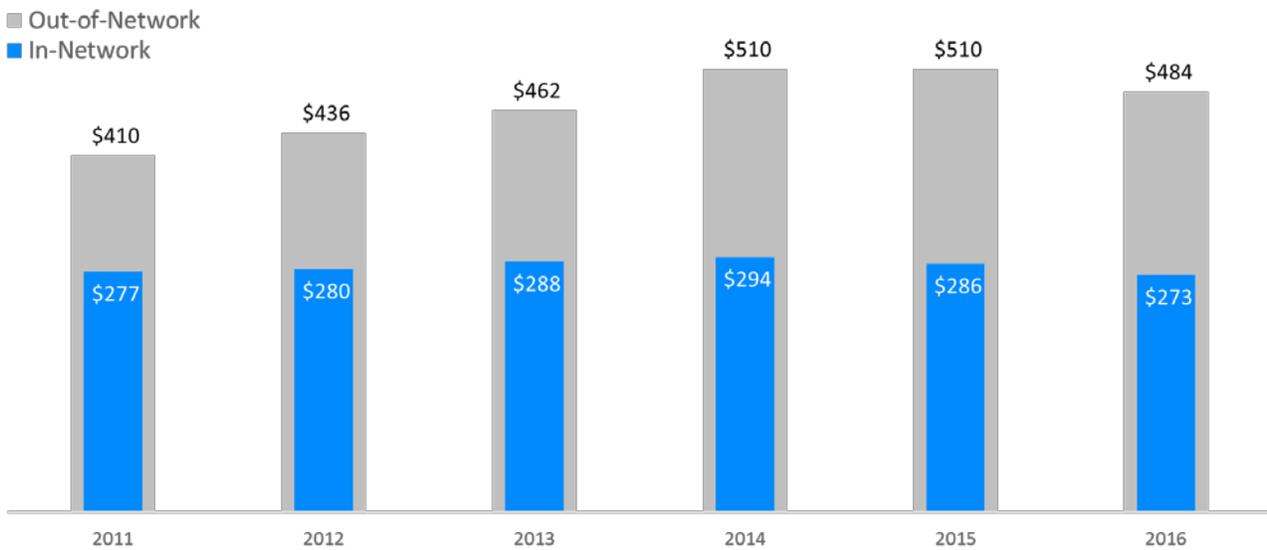
Exhibit 7

Exhibit 8 shows the prescription drug costs for both in-network and out-of-network claims. In this study, a claim is considered in-network only if at least 80% of evaluation and management payments were in-network. As the exhibit shows, prescription drug costs are significantly lower for in-network claims. Key observations include:

- Prescription drug costs per active in-network claim are 40% lower, on average, than active out-of-network claims
- Prescription drug costs for both in-network and out-of-network active claims follow a similar pattern of peaking in Service Year 2014 and dropping by Service Year 2016

Prescription Drug Costs per Active Claim Are Lower In-Network

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. A claim is considered in-network only if at least 80% of evaluation and management payments were in-network.

Exhibit 8

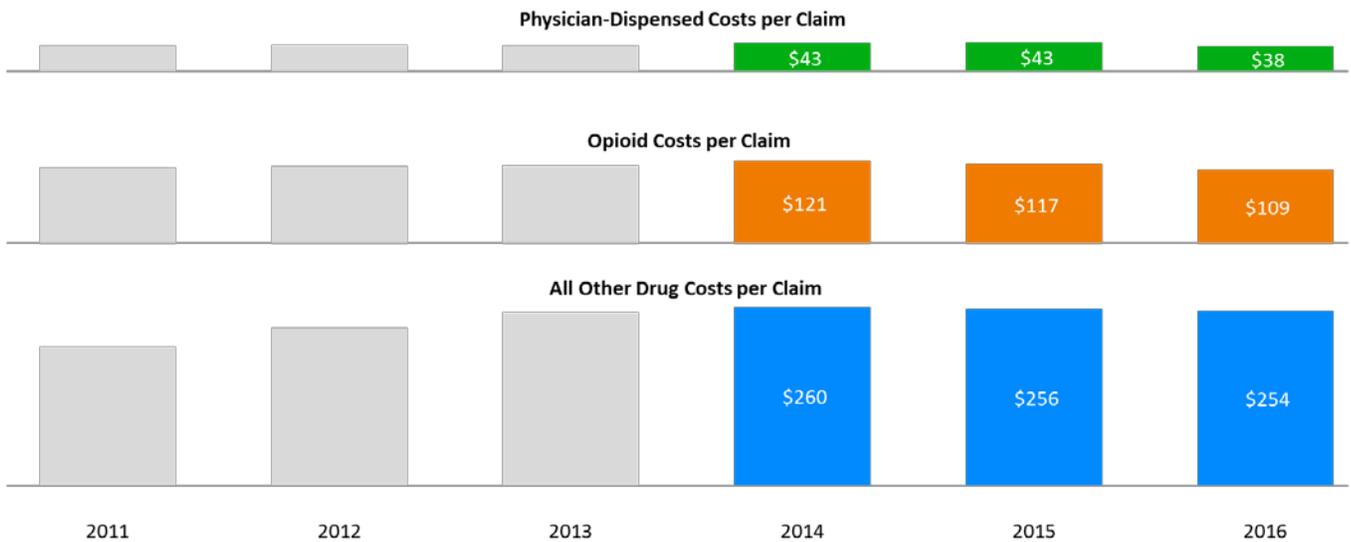
OPIOIDS AND PHYSICIAN DISPENSING

Exhibit 9 separates the prescription drug costs per active claim, shown in Exhibit 4, into physician-dispensed drugs, opioids, and all other prescription drugs. In this exhibit, opioids are prescription drugs identified by their therapeutic class codes and published by the American Hospital Formulary Service. Physician-dispensed opioids are included in physician-dispensed drugs.

The exhibit shows that after several years of steady growth, opioid costs per active claim decreased in 2015 and 2016. A decrease of 7% in opioid costs per active claim was one of the main contributors to the overall decrease in prescription drug costs in Service Year 2016. In this service year, physician dispensing decreased as well, which put further downward pressure on Rx claim costs.

Opioid Costs per Claim Have Decreased Since 2014

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. Opioids are prescription drugs identified by their therapeutic class codes and published by the American Hospital Formulary Service. Physician-dispensed opioids are included in the physician-dispensed drugs.

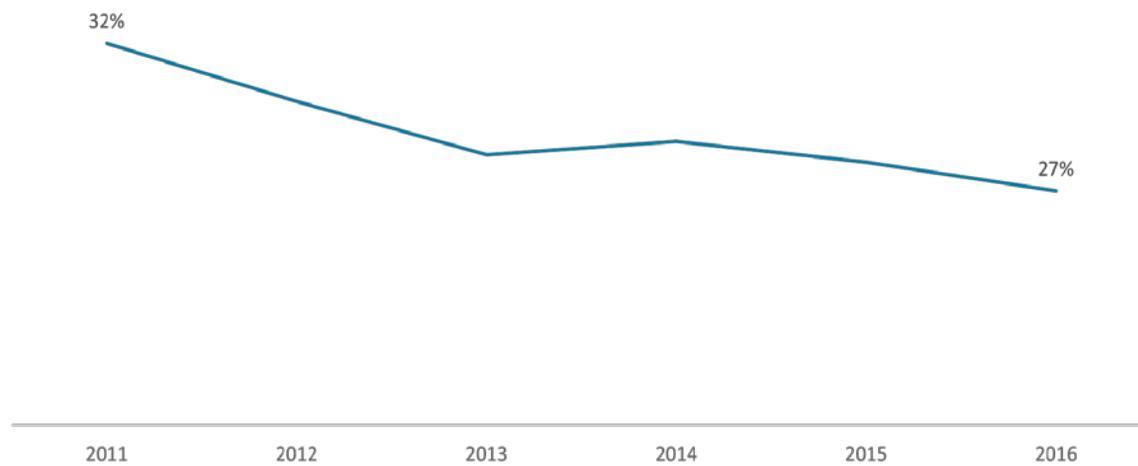
Exhibit 9

Opioids

Opioids are a significant share of WC prescription drug costs. Exhibit 10 shows the opioid share of prescription drug costs per active claim for Service Year 2011 to Service Year 2016. The opioid share of prescription drug costs in Service Year 2016, at 27%, is the lowest during the study period. The exhibit also shows that the share of opioids has been generally decreasing since Service Year 2011, which was the highest point in this study.

Share of Opioid Costs per Active Claim Have Been Decreasing

Service Year

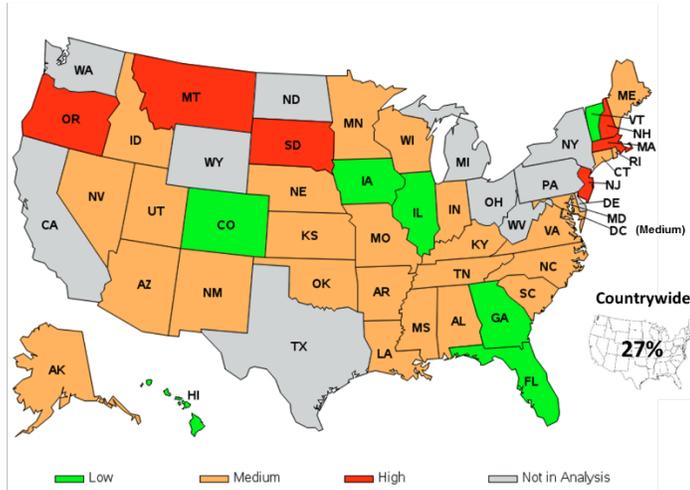


NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 10

Exhibit 11 shows the opioid share of prescription drug costs for those jurisdictions included in this study. In 2016, these shares ranged from 16% to 40% across individual jurisdictions.

2016 Opioid Share of Rx Costs



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Year 2016. An active claim is a claim with at least one medical service during the service year. Low < 21.7% and High > 32.8%. Ranges are based on the arithmetic mean over all jurisdictions plus or minus one standard deviation.

Exhibit 11

Exhibit 12a breaks down the annual changes in opioid costs per active claim into price and utilization. As the exhibit shows, a decrease in opioid costs per active claim in 2016 was driven by a decrease in utilization.

Other key takeaways from this exhibit include:

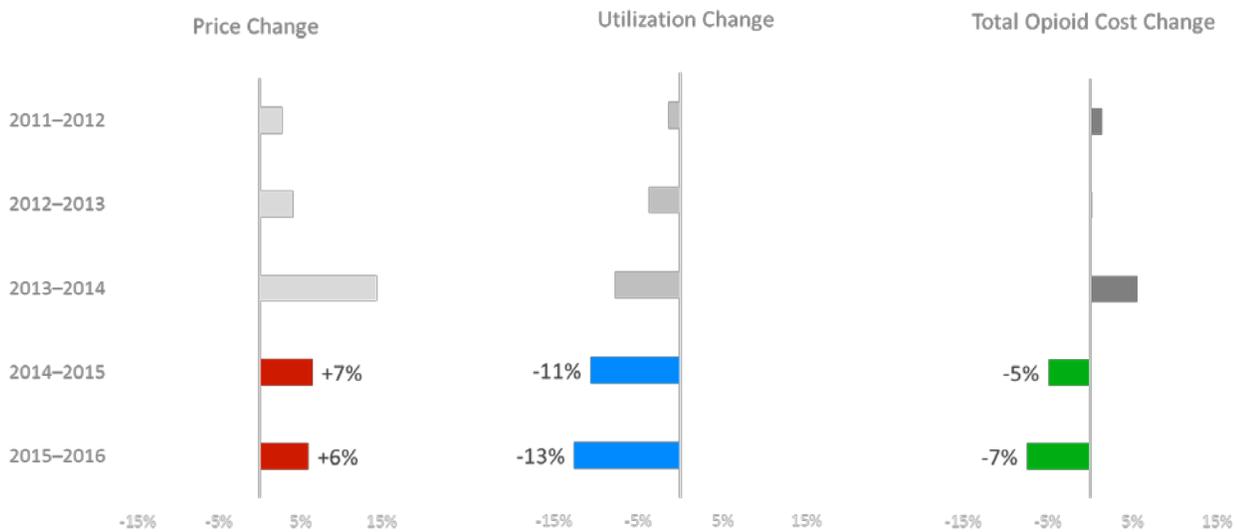
- Since 2014, the growth in opioid prices has been moderating
- 2016 marks the fifth consecutive year during which opioid utilization has decreased
- Opioid utilization decreases have become larger over this period

Some possible reasons for these changes include:

- Greater awareness among physicians and claimants of the addictive nature of opioids and the possible risks of prolonged opioid use.
- Implementations of drug formularies. The intent of formularies includes using evidence-based guidelines to reduce the over-prescribing of opioids, containing drug costs, and improving return-to-work outcomes.
- Education of doctors on alternative ways of treating injured workers’ pain without the use of medication.
- Better labeling requirements and prohibitions on opioid advertising.

Opioid Utilization Keeps Decreasing

Service Year

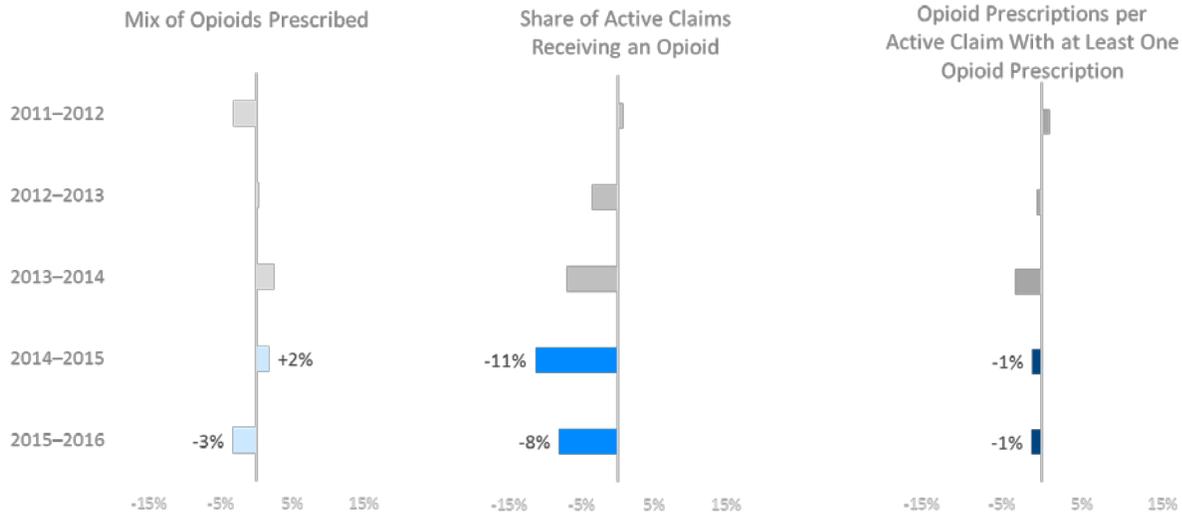


NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 12a

Exhibit 12b separates the opioid utilization into the three components mentioned earlier in this paper. As the exhibit shows, the primary driver of the utilization decrease between 2014 and 2016 was the share of active claims receiving at least one opioid. In 2016, the share of active claims receiving at least one opioid declined 8% and changes in the mix of drugs contributed a further 3% to the observed utilization decline.

Share of Active Claims Receiving Opioids Has Been a Major Driver of Utilization Decrease
Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 12b

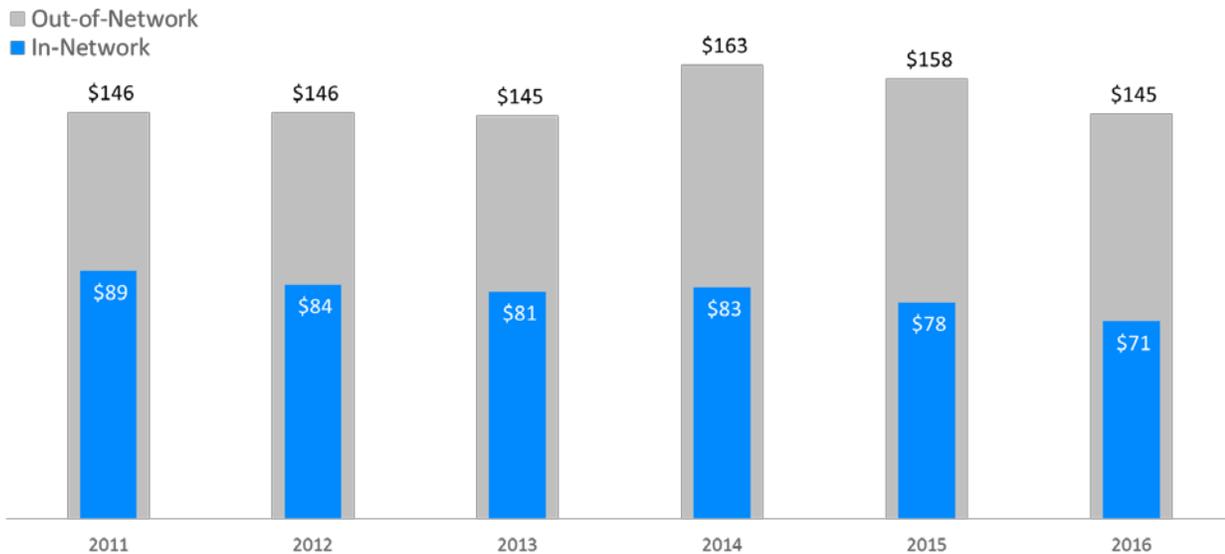
Exhibit 13 shows that opioid costs per active in-network claim are nearly 50% lower than for out-of-network claims. Explanations for this may include:

- The possibility that in-network physicians start the treatment of injured workers with non-opioid medication before progressing to more aggressive drugs.
- The use of a contract between the prescriber and the injured worker as a useful tool in controlling opioid utilization. The contract explains the dangers of opioids, how the medication ought to be used, and includes a patient agreement to not seek other opioids or other specific types of medication. These contracts also set out how the use of the opioid will be reduced over time and ultimately end.
- Better access to non-opioid methods for treating injuries (e.g., physical medicine providers).

NCCI has conducted a series of interviews with doctors, claims professionals, and regulators regarding the use of opioids in workers compensation. For more information on this topic, see [2].

In-Network Opioid Costs per Active Claim Are Lower

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

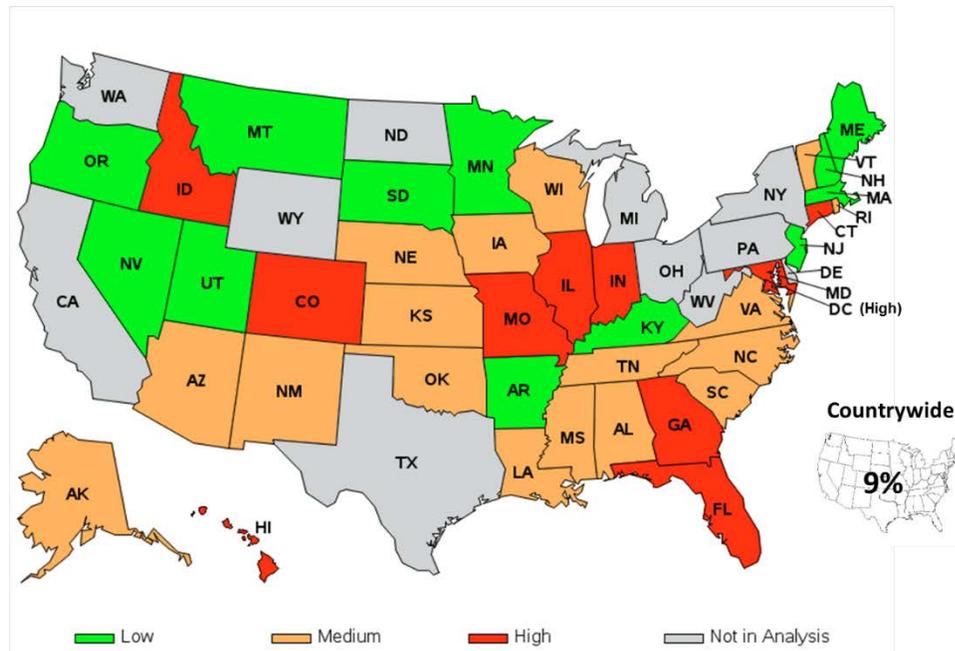
Exhibit 13

Physician Dispensing

Physician dispensing refers to the practice where doctors dispense prescription drugs from their offices directly to patients. Each state’s guidelines differ on which physicians are permitted to and under what conditions they can provide medications to patients at the point of care.

Exhibit 14 shows the 2016 physician-dispensed share of prescription drug costs for the jurisdictions included in this study. The countrywide 2016 physician-dispensed share of prescription drug costs was 9%. In some states where physician dispensing is restricted, the physician-dispensed share of prescription drug costs was less than 2%. In contrast, in some states where physician dispensing is not restricted, the physician-dispensed share of prescription drug costs exceeded 20%.

2016 Physician-Dispensed Share of Rx Costs



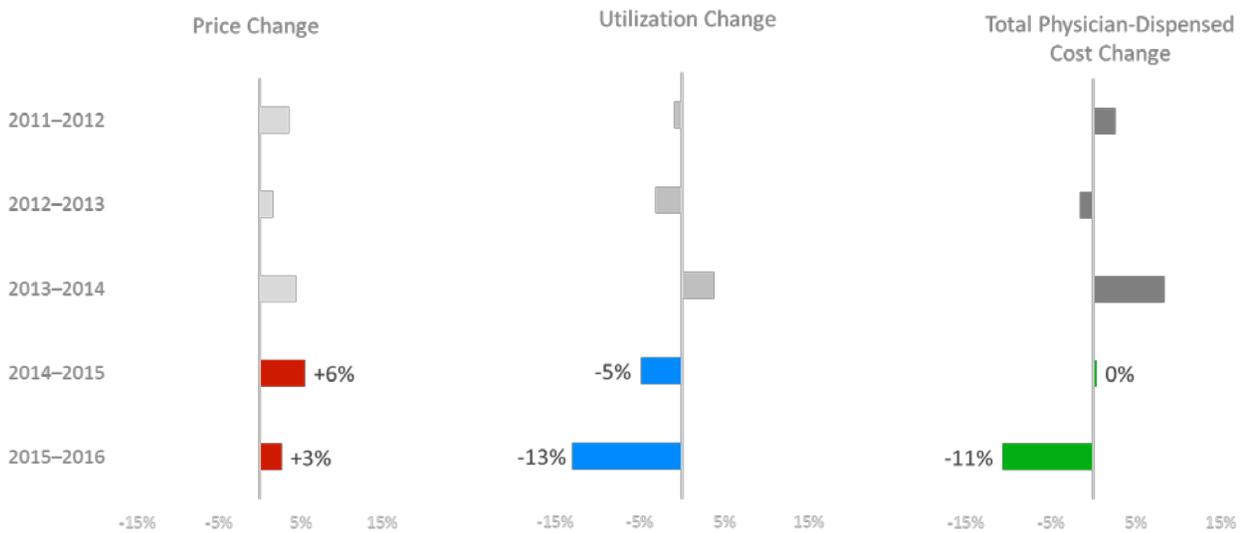
NCCI’s analysis is based on Medical Data Call experience for physician-dispensed prescriptions with a National Drug Code provided in Service Year 2016. High > 10% and Low < 5%.

Exhibit 14

Exhibit 15a shows the year-to-year changes in price, utilization, and prescription drug costs per active claim for physician-dispensed prescription drugs. As the exhibit shows, utilization was the main contributor to the overall decrease in physician-dispensed costs in 2016. Similar observations made regarding the changes in opioid price and utilization apply here as well. That is, recent annual decreases in physician-dispensed utilization are larger in magnitude than for the earlier years shown—the sole exception being 2014, when change in utilization was positive. The growth in physician-dispensed prices may be moderating.

Physician-Dispensed Utilization Decreased 13% in 2016

Service Year



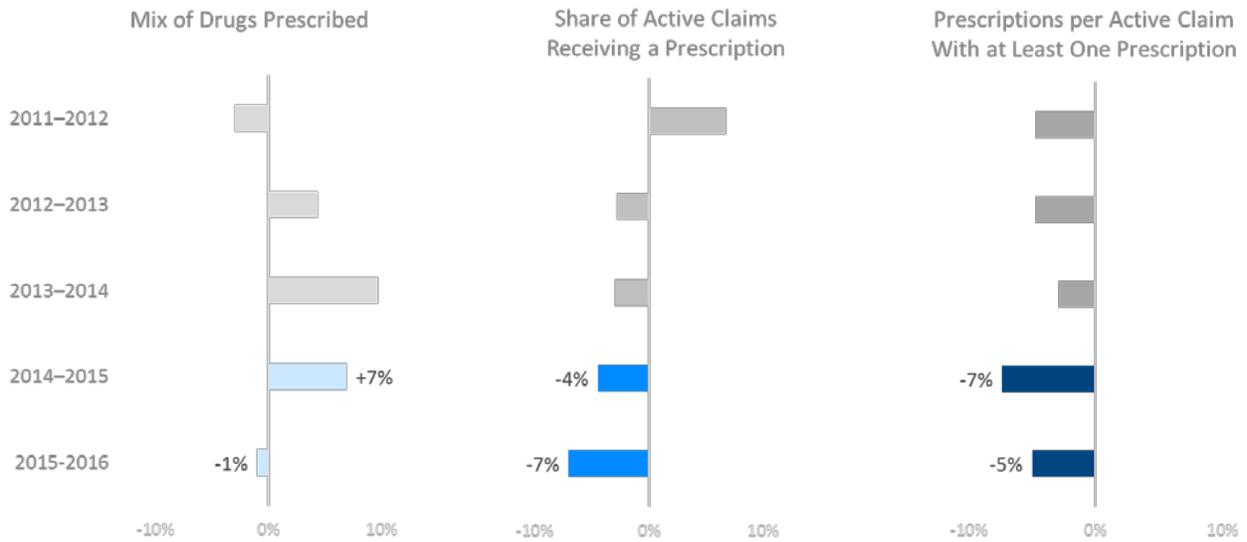
NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 15a

Exhibit 15b shows the physician-dispensed utilization components. This exhibit shows that the share of active claims receiving a prescription and the number of prescriptions per active claim with at least one prescription are the two main components behind the utilization decrease in 2016.

Share of Active Claims and Prescriptions per Active Claim Are Major Contributors to Physician-Dispensed Utilization Decrease

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

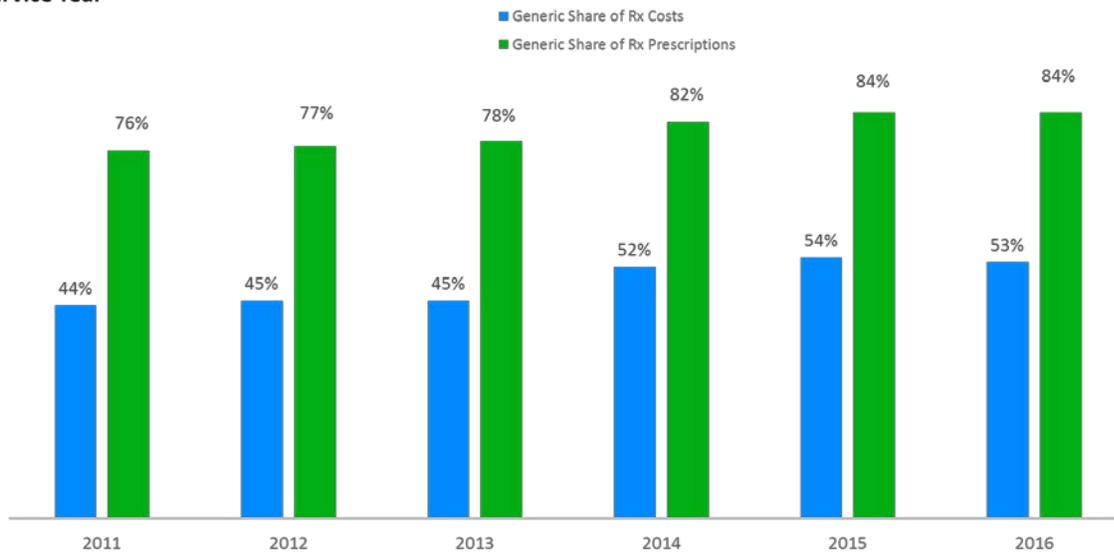
Exhibit 15b

GENERIC VS. BRAND-NAME PRESCRIPTION DRUGS

Generic prescription drug formulations are typically less expensive than their equivalent brand-name formulation. As such, many states have established regulations to promote the use of generic prescription drugs when available. Exhibit 16 shows that since 2011, more than 75% of WC-dispensed prescription drugs were from a generic formulation. The shares of generic costs and prescriptions both increased in 2014 to 52% and 82%, respectively, but since then these shares have been fairly stable.

Generic Share of Rx Costs Appears Stable Since 2014

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

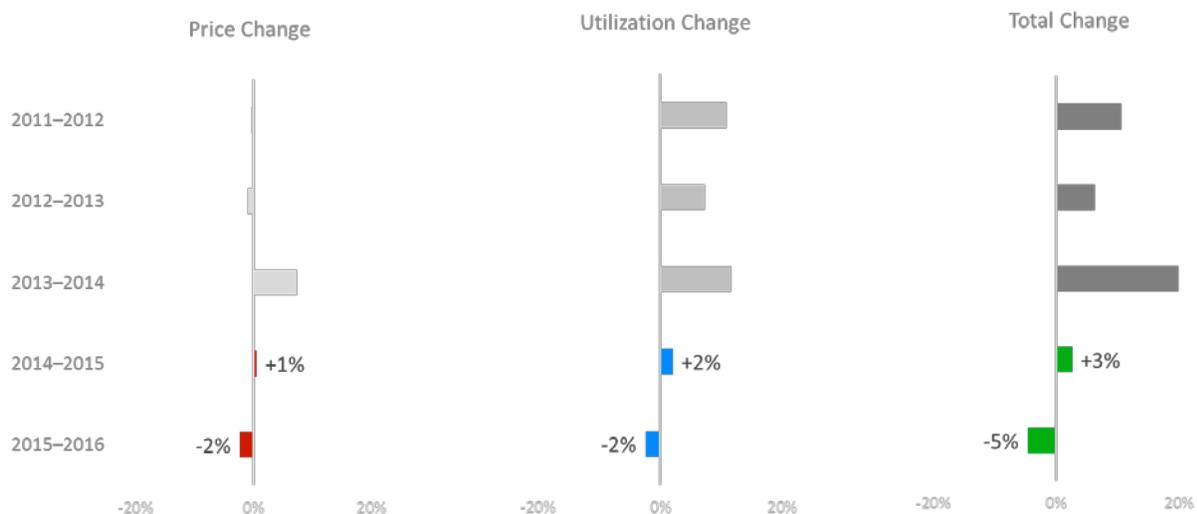
Exhibit 16

Exhibits 17 and 18 depict the price and utilization changes for generic and brand-name drug formulations.

- Since 2014, generic utilization appears to be moderating, while prices remain stable. Exhibit 17 shows that since 2014, the growth in generic prescription drug costs has been modest. This is in sharp contrast to the 2011–2014 period where such costs were rapidly increasing, primarily due to increases in utilization. One of the reasons for lack of generic price increases could be the increased competition among generic drug manufacturers.
- Brand-name prescription drug prices have been steadily increasing. The average annual price growth rate for the study period is about 13%. From 2011 to 2016, prices of brand-name drugs rose more than 80%. Some of the reasons for the steady price growth for brand-name drugs may include:
 - Lack of price regulation in the United States
 - Long time frames until patent expiration—during which time the drug manufacturer has the exclusive rights for the production and sales of the patented drug
 - Significant investments by drug manufacturers that include research, development, and marketing
- While the brand-name drug prices continue to rise, their utilization continues to decrease. Since 2014, the declines in utilization have been averaging about 13% per year—resulting in overall cost decreases in brand-name drugs since that time. Some of the reasons for utilization decreases may include:
 - State-specific legislative activity allowing the dispensing of generic instead of brand-name drugs to take advantage of potential cost savings
 - Initiating the injured worker’s therapy with relatively more cost-effective drugs before proceeding to more costly brand-name prescriptions

Generic Rx Price and Utilization Have Been Moderating Since 2014

Service Year

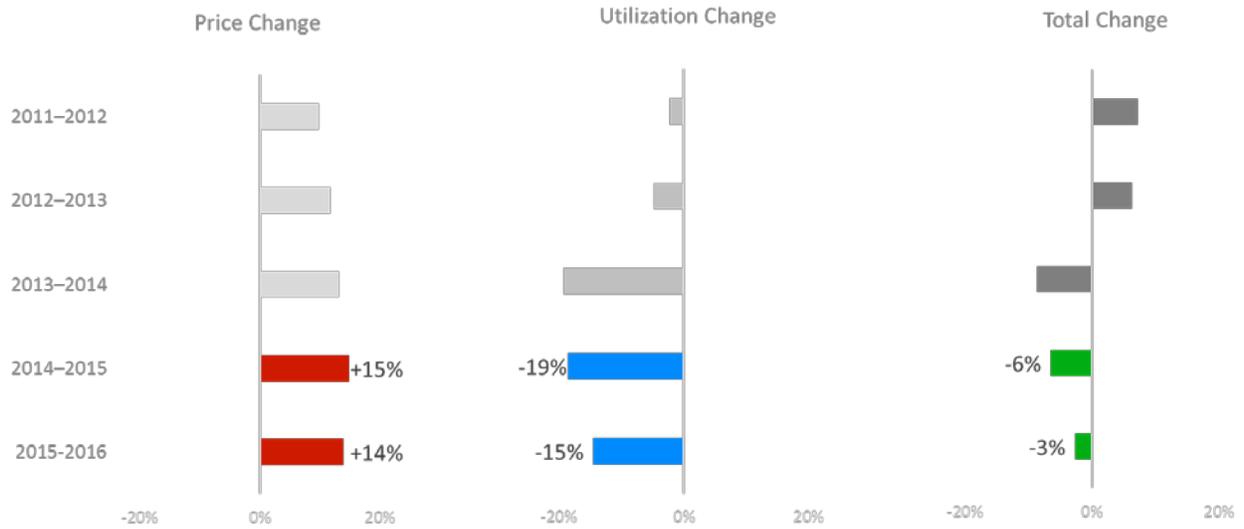


NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 17

Large Brand-Name Price Increases Have Been Offset by Lower Utilization

Service Year



NCCI’s analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2011 to 2016. An active claim is a claim with at least one medical service during the service year.

Exhibit 18

TOP DRUGS IN WORKERS COMPENSATION BY TOTAL COST AND CONTRIBUTION TO PRICE CHANGE

Top Drugs

Exhibit 19 lists the top 10 drugs in WC, ranked by dollars paid during Service Year 2016. These drugs account for more than one-third of total prescription drug costs. The rankings shown below are similar to those in NCCI's 2016 prescription drug update [1], with the exception of brand-name drug Celebrex, which is used to treat inflammation and pain in the body. The Celebrex patent expired in May 2014, and as a result:

- Celebrex dropped from 5th place in NCCI's 2016 update to 72nd place in the current update
- A generic substitute, Celecoxib moved up from the 5,331st place in the 2016 update to 11th place in the current update

Lyrica, OxyContin, and Gabapentin remain among the top prescription drugs in WC, accounting for more than 15% of prescription drug costs in 2016.

Top Drugs by Cost

Drug Name	Brand Name/Generic	Therapeutic Class	2016 Share of Total Rx Costs
LYRICA	Brand Name	CNS Agents	7.2%
OXYCONTIN	Brand Name	Analgesics	4.9%
GABAPENTIN	Generic	Anticonvulsants	3.8%
OXYCODONE HCL-ACETAMINOPHEN	Generic	Analgesics	3.7%
LIDOCAINE	Generic	Antipruritics	2.9%
OXYCODONE HCL	Generic	Analgesics	2.8%
MELOXICAM	Generic	Analgesics	2.7%
DULOXETINE HCL	Generic	Psychotherapeutic Agents	2.6%
TRAMADOL HCL	Generic	Analgesics	2.3%
HYDROCODONE BITARTRATE-ACETAMINOPHEN	Generic	Analgesics	2.2%

NCCI's analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Year 2016.

Exhibit 19

2016 CHANGE IN PRICES

Exhibit 20 shows the top five contributors to the 5% increase in prescription drug prices in 2016. These five prescription drugs are responsible for more than half of the 2016 total percentage change in prices. As the exhibit shows, all five drugs are brand-name drugs—confirming the earlier observation that brand-name drug manufacturers have more latitude to increase prices than producers of generic prescription drugs.

Five Drugs Account for More Than Half of the 2016 Total Percentage Change in Prices

Drug Name	Brand Name/Generic	2015 Price Paid per Unit	2016 Price Paid per Unit	2016 Change in Price Paid per Unit	Contribution to Overall Change
LYRICA	Brand Name	\$5.36	\$6.09	14%	19%
OXYCONTIN	Brand Name	\$7.28	\$8.31	14%	15%
PERCOCET	Brand Name	\$11.97	\$15.24	27%	7%
NUCYNTA	Brand Name	\$4.58	\$5.80	27%	5%
DUEXIS	Brand Name	\$16.80	\$21.18	26%	5%

NCCI's analysis is based on Medical Data Call experience for prescription drugs with a National Drug Code provided in Service Years 2015 and 2016.

Exhibit 20

CLOSING REMARKS

After a period of steady growth, prescription drug costs per active claim decreased in 2015 and 2016. The decrease in costs is observed for opioids, physician-dispensed drugs, and pharmacy-dispensed prescription drugs. The price growth in 2015 and 2016 moderated, and the main contributor to the overall cost decrease was the decline in utilization. Utilization decreased for opioids, physician-dispensed drugs, and pharmacy-dispensed prescriptions during these years.

While utilization seems to be moderating, prescription drug prices continue to rise, albeit at a slower rate than in recent previous years. The prices for brand-name drugs have, on average, increased by about 10% in the last five years.

Prescription drug costs for in-network claims are significantly lower than for out-of-network claims. In-network opioid costs are almost 50% lower than out-of-network costs. This difference in opioid costs could be due to in-network physicians starting the treatment of injured workers with non-opioid medication before progressing to more aggressive drugs. It could also be due to better access to non-opioid methods for treating injuries (e.g., physical medicine providers).

NCCI will continue to monitor and report on prescription drugs costs and other important issues that affect the workers compensation industry.

APPENDIX A

Projected Prescription Drug Share of Costs by Accident Year

Because only six service years of data were available for this study, some traditional actuarial techniques for estimating ultimate losses by accident year, which rely on cumulative amounts for all 30 relative service years, could not be used. Instead, a variety of procedures employing incremental losses, including general linear models, were used to arrive at the projected share of prescription drug costs by accident year. Methods used were ranked by several goodness of fit measures, including sum of squared residuals, Akaike information criterion, and Bayesian information criterion. The procedure selected was based on the goodness of fit measures having the top rank.

APPENDIX B

Data Tables

EXHIBIT 2:

PROJECTED RX SHARE OF COSTS BY CLAIM MATURITY IN YEARS FOR ACCIDENT YEAR 2016

Rx Share of Costs in the following table are shown as percent.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rx Share of Costs	4	6	11	17	23	27	31	35	37	39	42	44	45	46	47

Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31+
Rx Share of Costs	47	47	45	45	44	44	44	44	43	42	41	41	39	38	39	39

EXHIBIT 5a:

PRICE CHANGE, UTILIZATION CHANGE, AND TOTAL COST CHANGE

The values in the following table are shown as percent.

Period	Price Change	Utilization Change	Total Cost Change
2011–2012	5	3	9
2012–2013	6	0	6
2013–2014	10	–6	4
2014–2015	8	–9	–2
2015–2016	5	–8	–4

EXHIBIT 5b:

UTILIZATION COMPONENTS

The values in the following table are shown as percent.

Period	Mix of Drugs Prescribed	Share of Active Claims Receiving a Prescription	Prescription per Active Claim With at Least One Prescription
2011–2012	–2	5	0
2012–2013	1	–1	0
2013–2014	1	–2	–5
2014–2015	–1	–4	–3
2015–2016	–2	–3	–3

EXHIBIT 9:

PHYSICIAN-DISPENSED COSTS PER CLAIM, OPIOIDS COSTS PER CLAIM, AND ALL OTHER DRUG COSTS PER CLAIM

The values in the following table are shown in dollars.

Service Year	Physician-Dispensed Costs per Claim	Opioids Costs per Claim	All Other Drug Costs per Claim
2011	39	111	202
2012	40	114	229
2013	39	115	253
2014	43	121	260
2015	43	117	256
2016	38	109	254

EXHIBIT 10:

SHARE OF OPIOID COSTS PER ACTIVE CLAIM BY SERVICE YEAR

Shares of Opioid Costs in the following table are shown as percent.

Service Year	Share of Opioid Costs
2011	32
2012	30
2013	28
2014	29
2015	28
2016	27

EXHIBIT 12a:

OPIOIDS: PRICE CHANGE, UTILIZATION CHANGE, AND TOTAL COST CHANGE

The values in the following table are shown as percent.

Period	Price Change	Utilization Change	Total Cost Change
2011–2012	3	–1	1
2012–2013	4	–4	0
2013–2014	14	–8	6
2014–2015	7	–11	–5
2015–2016	6	–13	–7

EXHIBIT 12b:

OPIOIDS: UTILIZATION COMPONENTS

The values in the following table are shown as percent.

Period	Mix of Drugs Prescribed	Share of Active Claims Receiving a Prescription	Prescription per Active Claim With at Least One Prescription
2011–2012	–3	1	1
2012–2013	0	–4	–1
2013–2014	2	–7	–3
2014–2015	2	–11	–1
2015–2016	–3	–8	–1

EXHIBIT 15a:

PHYSICIANS: PRICE CHANGE, UTILIZATION CHANGE, AND TOTAL COST CHANGE

The values in the following table are shown as percent.

Period	Price Change	Utilization Change	Total Cost Change
2011–2012	4	–1	3
2012–2013	2	–3	–2
2013–2014	4	4	8
2014–2015	6	–5	0
2015–2016	3	–13	–11

EXHIBIT 15b:

PHYSICIANS: UTILIZATION COMPONENTS

The values in the following table are shown as percent.

Period	Mix of Drugs Prescribed	Share of Active Claims Receiving a Prescription	Prescription per Active Claim With at Least One Prescription
2011–2012	–3	7	–5
2012–2013	4	–3	–5
2013–2014	10	–3	–3
2014–2015	7	–4	–7
2015–2016	–1	–7	–5

EXHIBIT 17:

GENERIC: PRICE CHANGE, UTILIZATION CHANGE, AND TOTAL COST CHANGE

The values in the following table are shown as percent.

Period	Price Change	Utilization Change	Total Cost Change
2011–2012	0	11	11
2012–2013	-1	7	6
2013–2014	7	12	20
2014–2015	1	2	3
2015–2016	-2	-2	-5

EXHIBIT 18:

BRAND NAME: PRICE CHANGE, UTILIZATION CHANGE, AND TOTAL COST CHANGE

The values in the following table are shown as percent.

Period	Price Change	Utilization Change	Total Cost Change
2011–2012	10	-2	7
2012–2013	12	-5	6
2013–2014	13	-19	-9
2014–2015	15	-19	-6
2015–2016	14	-15	-3

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