# WORKERS' COMPENSATION DRUG TRENDS REPORT

2015

HELIOS

## METHODOLOGY

*We based the 2015 Drug Trends Report on paid workers' compensation transactions covering both 2013 and 2014. This analysis encompasses more than 400,000 claims and more than seven million prescriptions managed over this 24-month period. The report includes in-network prescriptions captured through the application of our network enforcement solutions. It excludes clients who have had less than a two-year history with our company.*

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# EXECUTIVE SUMMARY

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***Annually, we report on the medication trends shaping workers' compensation. This year's analysis discusses clients' experience managing pharmacy cost and utilization, as well as prevailing industry influences challenging stakeholders throughout the system. The following is a summary of the key findings in our 2015 Workers' Compensation Drug Trends Report.***

## Key Findings

- For the first time in more than a decade, the average prescription cost per claim increased. Rising 3.9%, this increase is due primarily to inflation in the average wholesale price (AWP) of medications.
- The rate of AWP inflation for generic medications increased more than ten-fold, moving from 0.7% in 2013 to 10% in 2014. Meanwhile, the rate of AWP inflation for brand medications decreased slightly, moving from 13.3% to 12.5%. When weighted and combined, the result is an overall increase of 11.4%; the highest overall increase in AWP we have reported in our annual drug trends reports.
- Our persistent emphasis on the global management of opioid analgesics reduced their utilization by 2.9%. This is due to 3.8% fewer prescriptions for opioid analgesics per claim and a 0.9% change in the average days' supply per prescription.
- The percent of injured workers utilizing opioid analgesics decreased from 61.8% to 60.2%, a reduction of 1.6 percentage points.
- The morphine equivalent dose (MED) per claim and the MED per prescription declined by 7.4% and 3.8%, respectively.
- Generic utilization improved by 3 points, moving from 76% to 79% of dispensed medications. Concurrently, generic efficiency remained strong at 99.6%.
- We achieved up to 98% retail network penetration through our direct and long-standing relationships with the nation's pharmacies.
- The cost of compounded medications skyrocketed, increasing 36.8%. While there is some geographical concentration, use is countrywide.
- Refinement of our predictive abilities is augmenting our patent-pending clinical analytics program so we more accurately identify potential high-cost pharmacy claims, as well as misuse and abuse situations, earlier.

***Working collaboratively with our clients, our solutions continued to deliver better clinical and financial outcomes.***

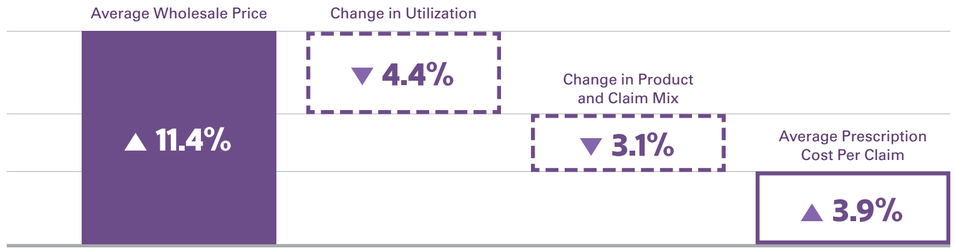
# COST AND UTILIZATION TRENDS

# COST AND UTILIZATION TRENDS

In 2014, the overall brand/generic weighted AWP increased 11.4%. Claim management, highly targeted utilization review, and clinical programs reduced pharmacy utilization by 4.4%. In addition, a 3.1-point shift in product and claim mix helped offset the most significant increase in AWP we have ever reported across our book of business. This resulted in an average prescription cost per claim increase of 3.9%. These trends highlight the importance of working with a pharmacy benefit manager (PBM) to control both cost and utilization levers.

*Figure 1*

**2014 COST AND UTILIZATION**




***In 2014, there was a greater increase in AWP inflation than in any previous year of our drug trends reporting.***

Average Wholesale Price (AWP)

## ▲ 11.4%

AWP of Brand Medications ▲ 12.5%
AWP of Generic Medications ▲ 10%

The rate of AWP inflation was the highest we have ever reported, emphasizing importance of managing both cost and utilization levers to contain pharmacy costs. While payers, pharmacies, and PBMs do not calculate or determine the rise or fall in AWP, we can work together to avoid paying for the most expensive prescriptions—those that should not have been paid in the first place.

Change in Utilization of Opioid Analgesics per Claim

## ▼ 2.9%

Number of Prescriptions per Claim ▼ 3.8%
Average Days' Supply per Prescription ▲ 0.9%

Utilization of opioid analgesics continued a downward trend, demonstrating the value of multi-pronged efforts to bend the curve of opioid use, misuse, and abuse. When analytics, clinical tools and expertise, network enforcement, and advocacy in government affairs harmonize, positive change is the result.

Morphine Equivalent Dose (MED) per Claim

## ▼ 7.4%

Ensuring injured workers receive the right medication at the right time, in the right dosage, for the right duration, requires diligence throughout the care continuum. Collaborating with payers, educating claims professionals, alerting pharmacists, and communicating with prescribers contributed towards the favorable reduction in MED at both the prescription and claim level.

Injured Workers Using Opioid Analgesics

## ▼ 1.6 % points

While opioid analgesics have an important place in medication therapy for the treatment of pain, careful consideration of the risks and benefits associated with their use must occur. Fewer injured workers using opioid analgesics is further evidence that our aggressive formulary management, clinical interactions, and early intervention programs were effective.

Utilization of Generic Medications

## ▲ 3 % points

Despite the high rate of AWP inflation, the use of generic medications continues to be an effective means of controlling cost. Higher utilization of generic medications yielded greater savings for the payer without detriment to the injured worker.

# COST MANAGEMENT

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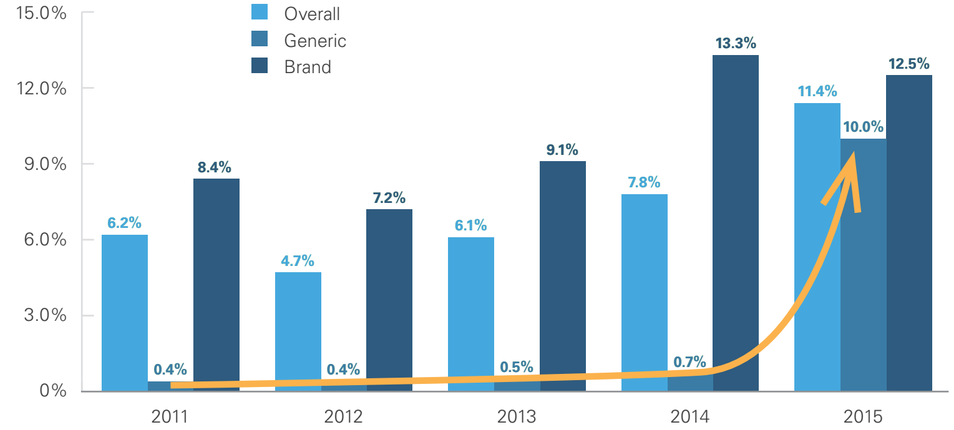
Cost management involves more than just per-transaction savings. It also involves analysis of transactional data to build and expand upon pharmacy networks and clinical programs. This ongoing analysis helps ensure access to pharmacies, as well as clinically-appropriate, cost-effective outcomes for payers and injured workers alike.

## AVERAGE WHOLESALE PRICE

Year-over-year, the pharmacy industry experiences AWP inflation. In preparing this year's drug trends report, we analyzed the rate of AWP inflation for those medications dispensed for our book of business. Figure 2 shows the five-year AWP trend. The weighted and combined overall increase in AWP was 11.4%, much higher than what we've reported previously.

*Figure 2*

**FIVE YEAR AWP TREND BY DRUG TRENDS REPORTING YEAR**




In 2014, our analysis showed a slight decrease in the rate of brand AWP inflation when comparing to last year. This year's increase was 12.5% versus 13.3% in 2013.

Average Wholesale Price (AWP)

▲ 11.4%

AWP of Brand Medications ▲ 12.5%

AWP of Generic Medications ▲ 10%

***This is the highest overall increase in AWP we have ever reported in any of our previous drug trend reports.***

*Figure 3*

**AWP INFLATION – TOP 25 BRAND MEDICATIONS RANKED AS A PERCENTAGE OF BRAND SPEND**

| Medication | Inflation Rate | 2014 Rank |
|---|---|---|
| OXYCONTIN® Tablet | 3.7% | 1 |
| LYRICA® Capsule | 20.5% | 2 |
| CELEBREX® Capsule | 20.7% | 3 |
| CYMBALTA ® Capsule | 3.6% | 4 |
| LIDODERM® Patch | -1.6% | 5 |
| KETAMINE Powder* | 5.8% | 6 |
| OPANA® ER Tablet | 3.1% | 7 |
| PERCOCET® Tablet | 26.6% | 8 |
| FLECTOR® Patch | 6.9% | 9 |
| ABILIFY® Tablet | 18.3% | 10 |
| GABAPENTIN Powder* | 14.1% | 11 |
| NEXIUM® Capsule | 15.4% | 12 |
| DURAGESIC® Patch | -2.3% | 13 |
| FLURBIPROFEN Powder* | 13.3% | 14 |
| EXALGO® Tablet | 27.7% | 15 |
| NUCYNTA® Tablet | 8.7% | 16 |
| AMRIX® Capsule | 11.2% | 17 |
| DUEXIS® Tablet | 101.4% | 18 |
| LUNESTA® Tablet | 36.2% | 19 |
| SKELAXIN® Tablet | 3.6% | 20 |
| BUTRANS® Patch | 15.0% | 21 |
| VOLTAREN® Gel | 9.3% | 22 |
| ADVAIR® Diskus | 9.7% | 23 |
| NUCYNTA® ER Tablet | 5.1% | 24 |
| FENTORA® Tablet | 3.7% | 25 |

* Ingredient used in topical compounded medications

# COST MANAGEMENT

With respect to generic medications, in last year's workers' compensation drug trends report, we discussed that the inflation rate for generic medications was higher than in previous years. This year's analysis showed the rate of AWP inflation continued to increase. In total, the amount of generic AWP inflation increased ten-fold, moving from 0.7% to 10.0%.

Even though there was little change in utilization of oxycodone-acetaminophen products in both number of transactions and quantity of units per prescription, the average billed per prescription jumped 60.6%. Similarly, hydrocodone-acetaminophen products had a 10.2% increase in average billed per prescription, reflecting a steadily increasing AWP.

Although not every generic medication in our book of business saw an increase, several of the most commonly prescribed medications did; oxycodone-acetaminophen (increased 97%), hydrocodone-acetaminophen (increased 16%), oxycodone (increased 72%), and morphine sulfate (increased 57%). Figures 5-8 demonstrate the trend of rising AWP inflation.

*Figure 4*

**AWP INFLATION – TOP 25 GENERIC MEDICATIONS RANKED AS A PERCENTAGE OF GENERICS SPEND**

| Medication | AWP Inflation | 2014 Rank |
|---|---|---|
| oxycodone-acetaminophen tablet | 96.9% | 1 |
| hydrocodone-acetaminophen tablet | 16.4% | 2 |
| oxycodone tablet | 72.5% | 3 |
| gabapentin tablet | -0.2% | 4 |
| gabapentin capsule | -0.2% | 5 |
| duloxetine capsule | 0.0% | 6 |
| lidocaine patch | 0.4% | 7 |
| fentanyl patch | 0.0% | 8 |
| meloxicam tablet | -0.4% | 9 |
| tramadol tablet | -0.7% | 10 |
| morphine sulfate ER tablet | 57.4% | 11 |
| cyclobenzaprine tablet | -3.0% | 12 |
| tizanidine tablet | 4.8% | 13 |
| omeprazole capsule | 1.0% | 14 |
| topiramate tablet | 0.6% | 15 |
| zolpidem tablet | -0.9% | 16 |
| metaxalone tablet | 4.3% | 17 |
| modafinil tablet | 1.1% | 18 |
| baclofen tablet | 114.7% | 19 |
| ibuprofen tablet | 79.3% | 20 |
| ondansetron tablet | 0.9% | 21 |
| naproxen tablet | -0.1% | 22 |
| morphine sulfate ER capsule | -1.6% | 23 |
| quetiapine tablet | -0.4% | 24 |
| tramadol ER tablet | -1.1% | 25 |

*Figure 5*

**INCREASING AWP TREND**
**OXYCODONE-ACETAMINOPHEN TABLETS**

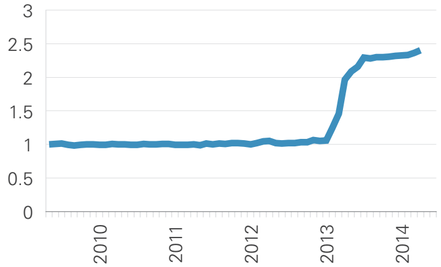



*Figure 6*

**INCREASING AWP TREND**
**OXYCODONE TABLETS**

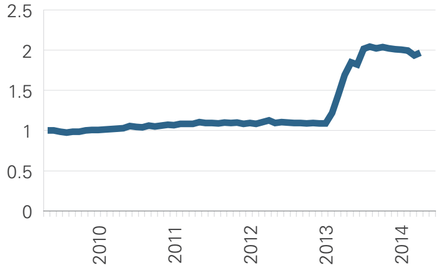



*Figure 7*

**INCREASING AWP TREND**
**HYDROCODONE-ACETAMINOPHEN TABLETS**

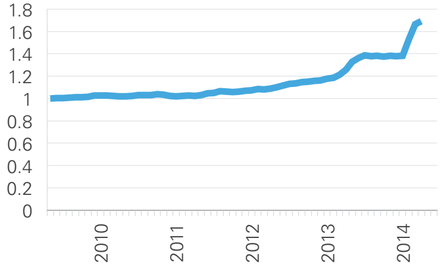
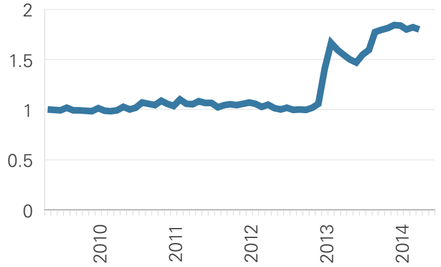



*Figure 8*

**INCREASING AWP TREND**
**MORPHINE SULFATE TABLETS**




***Although not every generic medication in our book of business increased, the AWP for several of the most common rose significantly.***

## Factors Influencing AWP Inflation

Each manufacturer, whether for the brand or the generic medication, establishes the market price through the process of defining an Average Wholesale Price or AWP. These published prices become the benchmarks for many programs including Medicare Part D, workers' compensation fee schedules, group health plans or buying groups, to name a few. Major drug compendia such as Red Book™ and Medi-Span® maintain and publish the AWP as a single amount, along with other medication data. The various workers' compensation pharmacy fee schedules rely upon AWP to guide pharmacy reimbursement rates, as do pharmacies and pharmacy benefit managers.

Upon receiving approval to market and distribute a medication, the pharmaceutical company or manufacturer establishes that medication's price. Typically, the first company to the healthcare market with a medication will be the only producer of that medication. Since there is no competition due to patent protection, there are few market pressures on price. The intent of this dynamic is to encourage innovation and drug development within the pharmaceutical industry. This also allows the company to recoup the substantial research and development (R&D), fixed, and variable costs associated with medication development (Openshaw, 2005). Generic manufacturers and the products they bring to market experience similar market dynamics.

The AWPs of brand and generic medications change often. In addition, while PBMs manage daily changes for both pharmacies and payers, pharmacies and payers do not calculate or determine the rise or fall in AWPs.

Such significant growth in the rate of AWP inflation as discussed in this report is not limited to workers' compensation. In fact, throughout 2014 the increasing cost of generic prescription medications garnered quite a bit of congressional, private sector, and media attention (Bach, 2015; Alpern, Stauffer, & Kesselheim, 2014; Meier, 2015; Gottlieb, 2014).

IMS Institute for Healthcare Informatics reviewed the 2013 use of medications in the United States and reported overall spending increased largely due to lower patent expiry impact, lack of substantial innovation, and price increases for single-source generics (IMS Institute for Healthcare Informatics, 2014). Tightened FDA oversight, regulatory reform, product shortages, rising cost of goods sold (COGS), greater product liability risk, higher fees, and increased shipping costs, as well as increased barriers to market entry were cited by Scott Gottlieb, MD of the American Enterprise Institute in his testimony before the United States Senate Subcommittee on Health, Education, Labor, and Pensions (Gottlieb, 2014). An article in Pharmacy & Therapeutics cites "mega-consolidations" of generic companies and delays over new products entering the market as contributing factors (Barlas,2014).

## What Increasing AWP Means for Payers

The rising cost of pharmacy-related claim expense is undoubtedly a contributing factor to overall claim severity, consistent with National Council of Compensation Insurance (NCCI) findings. Furthermore, in order to mitigate the influence of AWP, payers must work with their PBM to manage both cost and utilization levers. The effort starts with the first fill and continues until the injured worker either no longer requires pharmacy therapy or settles their claim. Cost and utilization strategies include, but are not limited to, the following.

- **Strong network capture and enforcement** – the more prescriptions captured in-network, the greater control a payer can have over both cost and utilization. Capturing prescriptions in-network facilitates application of network discounts, drug utilization review, formularies, and other business rules that have been deliberately designed to achieve better clinical outcomes for the injured worker, while simultaneously reducing overall pharmacy costs.

- **Proactive mail order programs** – while not immune to increases in AWP, the use of mail order can effectively reduce overall pharmacy costs by extending days' supply versus the retail equivalent without sacrificing utilization management.

- **Generic dispensing and conversion programs** – despite significant AWP inflation for certain medications, the use of generic medications continues to be a cost-effective alternative to brand equivalents, without detriment to the efficacy of injured workers' medication therapy. Point-of-sale efforts to mandate generic fulfillment consistent with state of jurisdiction requirements, as well as concurrent and retrospective clinical interventions, all inure to the benefit of payers while also assuring the safest, most cost-effective therapy for the injured worker.

- **Global medication management** – starting with the first fill, and continuing until the injured worker either no longer requires medication therapy or settles his or her claim, global medication management is an important tool in successfully mitigating rising AWP inflation. Tools such as early intervention programs, advanced analytics, as well as comprehensive, evidence-based clinical programs, help ensure injured workers receive the right medication at the right time.

## RETAIL NETWORK PENETRATION

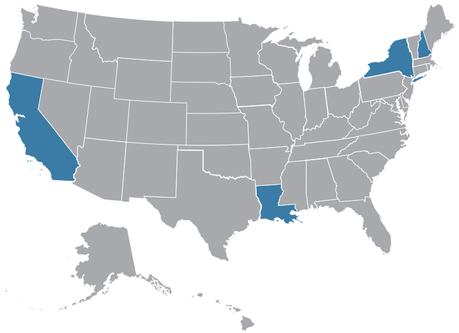
In 2014, we electronically adjudicated several million prescriptions in real-time, working directly with every national pharmacy chain and virtually all independent pharmacies in the process, and using an integrated proprietary technology platform. Starting with the first fill, each of these prescriptions was checked for compliance with drug utilization review (DUR) protocols, formularies, network discounts, and client-specific business rules at the point-of-sale. This resulted in significant cost savings for our clients and virtually eliminated administrative inefficiency associated with collection calls and paper bills resulting from third party billers. Meanwhile, the data captured through this process fueled our patent-pending clinical analytics program, enabling smarter clinical triage and better decision-making throughout the duration of the pharmacy claim.

***Helios continued to be the gold standard for network capture, achieving up to 98% retail network penetration.***

In legislative and regulatory affairs, our team is a vigilant advocate for the most fair and efficient pharmacy environment possible—for payers, pharmacies, and injured workers alike.

Having proven its value in the commercial health care market, proactive medication management is making inroads in workers' compensation. Such programs ensure injured workers are receiving the right medications at the right time based on their specific injury, while helping avoid misuse and abuse situations. Proactive medication management helps speed the healing process and accelerates a return to work. Automation and good communication reduces administrative and handling costs. Finally, a comprehensive medication management program provides early identification of potentially high-risk claims, giving claim managers an opportunity for early intervention to mitigate that risk.

- In 2014 we participated in the **New Hampshire** Governor's Commission to Recommend Reforms to Reduce Workers' Compensation Medical Costs. One of the broadly supported recommendations coming out of the Commission was support for legislation to allow employers to use managed pharmacy networks and to require injured workers to use the designated network.
- In **Louisiana**, where the statutorily authorized direction of care to a managed pharmacy network was challenged, two appellate courts have now ruled upholding the requirement that injured workers use an employer-directed pharmacy network as long as a participating pharmacy was accessible.
- **New York** has a strong employer-directed pharmacy network rule, though there have been repeated attempts in the legislature to allow for employee choice in pharmacy care. The legislation has been defeated in the past several sessions but it has been introduced again for consideration during the 2015 session.
- **California** reaffirmed the ability of employers to direct injured workers to a pharmacy network by including a definition of *ancillary care*, which was inclusive of pharmacy into their recently updated Medical Provider Network rules.



## MAIL ORDER

In 2014, mail order utilization continued to offer significant cost advantages for payers. Our data showed that for every 10% shift away from retail days' supply to mail order days' supply, payers experienced a 1.4% reduction in total spend. This is 0.2 percentage points higher than last year. Additionally, the average days' supply for mail order continues to be greater than retail, 59.5 days versus 24.1 days, respectively. The average cost per days' supply of mail order prescriptions was also 19.8% less than its retail equivalent, $4.92 versus $6.14.

The role of mail order in workers' compensation differs from that in group health. A group health PBM has the ability to reduce co-payments, offer incentive coupons, and even mandate use of mail order for maintenance medications (at the discretion of the employer offering the plan). Conversely, in most instances, workers' compensation payers and PBMs may not. Workers' compensation payers must also contemplate applicability of direction of care statutes and the type of medication being utilized. These factors emphasize the importance of effective, data-driven, mail order conversion programs.

Data drives success, and with the aforementioned in mind, in August of 2013, we built our first mail order conversion predictive model to enhance our already successful recruitment model. Building on the initial success clients experienced from using this model, we added more refinements in 2014. Today it includes claim demographics, such as age, duration, gender, injury type, and location, as well as pharmacy use data, including the number of pharmacies visited. The model also contains client-controlled parameters, which allow for easier management of client preferences, such as how soon an injured worker will be eligible for the program, or how much follow up should occur. Our dedicated team uses the mail order predictive model to prioritize outreach. This approach is similar to how we meld data with expertise in our early intervention program, and has allowed us to concentrate conversion resources on those individuals most likely to convert.

***Relying on our experience, internal data, and predictive abilities, we better prioritize conversion efforts to deliver better outcomes.***

## PHYSICIAN DISPENSING

Medications dispensed from the physician's office and other non-pharmacy locations continue to present safety concerns for the injured worker while increasing costs for payers. Several organizations highlighted this throughout 2014, as they released findings analyzing the influence of physician-dispensed medications.

- **Effect of Physician-Dispensed Medication on Workers' Compensation Claim Outcomes in the State of Illinois**
  This study indicated that claims linked to medications, especially opioid analgesic medications, dispensed by physicians had inferior outcomes in terms of medical and indemnity costs. The study found 39% higher medical costs, 27% higher indemnity costs, and 34% higher frequency of lost-time days associated with physician-dispensed versus pharmacy-dispensed medications. Additionally, claims with physician-dispensed opioid analgesics had 78% higher medical costs, 57% higher indemnity costs, and 85% higher frequency of lost-time days versus claims with pharmacy-dispensed medication(White, et al., 2014).

- **Differences in Outcomes for Injured Workers Receiving Physician-Dispensed Drugs in the California Workers' Compensation System**
  In short, this study by California Workers' Compensation Institute (CWCI) observed that medical costs were 17% higher, indemnity costs were 13% higher, and lost-time days were 9% higher for claims with medications dispensed by physicians in California versus medications dispensed by the pharmacy (Swedlow, Gardner, & Ireland, 2013).

- **Workers' Compensation Prescription Drug Study: 2013 Update**
  In this report, NCCI showed that physician-dispensed prescription average cost per claim grew by about 25% in service year 2008, from $24 to $30, and doubled over the next three years. However, prescription cost per claim for medications dispensed by others had a steady growth of about 5% per year during the same period. Additionally, physician dispensing has contributed to the growth in the number of prescriptions per claim. Between 2007 and 2011, the number of prescriptions per claim dispensed by a physician has increased 14%, from 1.4 to 1.6, although the peak was in 2009, at 1.9. In comparison, the number of prescriptions per claim dispensed by others increased by 8% during the same period, from 3.9 to 4.2. Later sections of this report provide additional analysis of physician dispensing (Lipton, Colon, & Robertson, 2013).

These findings continue to show higher costs and inferior injured worker outcomes when physician-dispensed medications or other non-traditional dispensing sites were involved in the claim.

# COST MANAGEMENT

To the positive, instances of physician-dispensed medications are decreasing in states where reforms occurred. Costs too are falling, yet generally remain higher than their pharmacy-dispensed equivalents. Evidence of this is shown in several individual state studies by the Workers' Compensation Research Institute (WCRI).

- **South Carolina.** Physician dispensing decreased after reimbursement rules changed, falling from 24% of all prescriptions in the third quarter of 2011 to 10% in the first quarter of 2013. The average prices paid per pill decreased by 33% to 52% for most of the top physician-dispensed medications. However, even with these price reductions, the average prices paid for five of the seven common physician-dispensed drugs remained 27% to 42% higher than pharmacy prices paid for the same medication (Wang, Thumula, & Liu, 2014).

- **Connecticut.** Physician dispensing was still common in the two calendar quarters after reforms. Physicians dispensed 35% to 36% of all prescriptions, a slight decrease from 39%. The average price paid per pill decreased by 20% to 67% for each of the nine common physician-dispensed medications. For seven of the top nine medications, the average price decreased by 28% to 49%. However, the average price paid for the most common physician-dispensed medications remained 30% to 74% higher than prices paid to pharmacies for the same medications (Wang, Thumula, & Liu, Early Impact of Connecticut Reforms on Physician Dispensing, 2014).

- **Georgia.** Studies of reforms showed that average prices paid for physician-dispensed prescriptions decreased after rule changes. The average price per pill paid for most medications commonly dispensed by physicians reduced by 25% to 40%. However, average prices per pill remained higher for physician dispensed over pharmacy—20% to 40% higher (Wang, Liu, & Thumula, Impact of Physician Dispensing Reform in Georgia, 2nd Edition, 2014).

- **Florida.** After implementation of House Bill 7095, the percentage of injured workers receiving strong opioids dispensed by physicians during the first three to six months after injury reduced from 3.5% pre-reform to 0.5% post-reform. The number of all pain medication prescriptions for strong opioids dropped 4 percentage points. Overall, the percentage of injured workers receiving strong opioids reduced from 14.5% to 12.4% and the frequency of prescriptions dispensed for strong opioids decreased from 16.3% to 13.7%. The percentage of injured workers receiving strong opioids at pharmacies remained unchanged (12%) after the reform. A shorthand convenience, WCRI uses the term *strong opioids* for Schedule II and Schedule III opioids; Schedule IV and nonscheduled opioids are referred to as *weaker opioids* in the study.

  After reforms, the percentage of injured workers receiving physician-dispensed, other pain medications increased from 23.8% to 26% for NSAIDs and from 9% to 9.8% for weaker, non-banned opioids. During this period, the percentage of injured workers with pharmacy-dispensed NSAIDs increased slightly, from 13.2% to 13.9%, and there was a statistically significant decrease in pharmacy-dispensed, weaker opioids, from 6% to 5.2%. Overall, there was no change in the proportion of injured workers receiving any pain medication—44.1% pre-reform and 44.4% post-reform (Thumula, 2013).

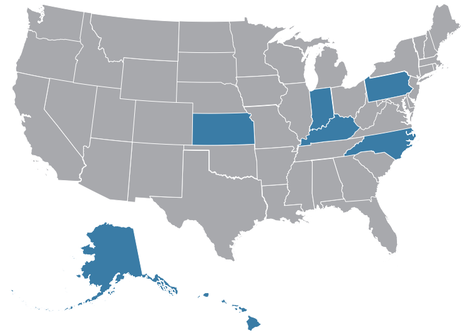
We are proud to have been a part of the reform effort throughout the country. Our government affairs team worked throughout the year with stakeholders in numerous states to promote public policy that would reduce the period during which a physician can dispense medication and cap reimbursement for the repackaged medications based on the AWP of the original manufacturer's product.

- **Pennsylvania** passed legislation that limits the period during which a physician can receive reimbursement for dispensing medications to an injured worker to 15 days for Schedule II medications and 30 days for all others. The legislation also capped repackaged drug reimbursement based on the AWP of the original manufacturer's product.

- **Indiana** passed a bill limiting the period a physician can dispense to seven days following the injury.

- **Hawaii**, **North Carolina**, and **Alaska** all passed legislation capping reimbursement for repackaged drugs based on the AWP of the original manufacturer's product.

- **Kentucky** and **Kansas** adopted rules with similar reimbursement cap language.



# UTILIZATION MANAGEMENT

# UTILIZATION MANAGEMENT

Utilization management involves the application of our global medication management programs. The clinical tools and expertise we offer work in partnership with payer clients to promote safe and effective treatments for the compensable condition(s) associated with the claim, while remaining consistent with the business rules of the payer and any applicable regulations. By thinking of pharmacy utilization as a continuum (prospective, concurrent, and retrospective), it can be easier to understand the interaction of the various inputs of our program in the effort to manage pharmacy utilization and cost.

- **Prospective.** Data is reviewed surrounding past payer experiences, global trends in treatment, new medications being released, existing medications being used for new conditions or treatments, state of jurisdiction requirements, and the types of clients served. Distilled down to formularies, drug utilization review criteria, and business rules, these parameters and information help forge the future care strategies that will guide pharmacy, payer, and PBM decisions in the management of the pharmacy claim. In workers' compensation, while these may contemplate the global population of injured workers, the strategies must be sufficiently flexible to address the unique circumstances of the individual injured worker.

- **Concurrent.** Utilization management employs technology to capture the point-of-sale transactions based on the prospectively defined care strategies. This data fuels analytic models, allows for greater visibility into the injured worker's medication therapy regimen, and lends the opportunity for clinical intervention where needed. Meanwhile, the dispensing pharmacist is alerted to relevant information about the injured worker that may assist in more appropriate dispensing of the medication, in real-time.

- **Retrospective.** Clinicians analyze the pharmacy claim, identify intervention opportunities, and reveal trends that lead us to modify and continuously improve the prospective utilization management plan to achieve better outcomes for the payer, the employer, and most importantly, the injured worker.

The greater the synchronization throughout the care continuum, the better the decisions made in the claim; better decisions lead to better outcomes. In 2014, overall utilization decreased 4.4% due to 5% fewer prescriptions per claim and a 0.6% change in the average days' supply per prescription. Change in product and claim mix (i.e., brand/generic, state of jurisdiction, nature of injury, claim duration) further offset the 11.4% increase in AWP inflation by 3.1%.

Change in Utilization

▼ **4.4%**

Number of Prescriptions per Claim ▼ **5%**

Average Days' Supply per Prescription ▲ **0.6%**

Change in Product and Claim Mix

▼ **3.1%**

## GENERIC EFFICIENCY AND GENERIC UTILIZATION

Despite the high rate of generic AWP inflation (five generic medications in the top 25 had increases above 50%) within the past year, the use of generic medications over their branded medication equivalents remains an effective means of controlling cost without detriment to the safety and efficacy of the injured worker's medication therapy regimen.

The average AWP for both the brand and generic medication of four commonly utilized medications in workers' compensation claims is shown below. The percentage of savings demonstrates the value of generic utilization whenever possible.

*Figure 9*

**COST SAVINGS FROM GENERIC MEDICATIONS**

| Medication | 2014 Generic AWP per Pill | 2014 Brand AWP per Pill | Savings |
|---|---|---|---|
| oxycodone-acetaminophen tablet | $2.41 | $9.75 | 304% |
| hydrocodone-acetaminophen tablet | $0.68 | $2.27 | 231% |
| oxycodone tablet | $1.56 | $6.85 | 340% |
| morphine sulfate tablet | $3.79 | $8.65 | 128% |

In 2014, generic utilization improved three points, moving from 76% to 79%. Meanwhile, generic efficiency remained strong at 99.6%. Such persistency is indicative of very capable programs, particularly point-of-sale and formulary controls, which drive better utilization of generics when available and possible.

***A 1% increase in generic utilization results in a 2.2% reduction in spend.***

Early in 2014, the industry saw the release of generic extended-release morphine (Avinza®) then, by the end of second quarter, the generic equivalent for three common medications launched: eszopiclone (Lunesta®), diclofenac 1.5% solution (Pennsaid®), and extended-release hydromorphone (Exalgo®). Perhaps the most notable new generic medication in 2014 was celecoxib (Celebrex®), a top five medication in our book of business for many years. The availability of these medications will continue to promote higher generic dispensing rates and generic efficiency.

Looking ahead, we anticipate clients will financially benefit from the release of generic medications for Nexium® (esomeprazole was approved in January, 2015), Abilify®, and Axert®. Nexium® and Abilify® are anticipated to have the biggest impact on spend. Generic alternatives to brand medications Frova® and Seroquel® XR are also on the horizon.

## OPIOID ANALGESICS

In 2014, the percent of claims utilizing opioid analgesics decreased from 61.8% to 60.2% while overall spend increased modestly by 0.2%. Utilization of opioid analgesics per claim decreased 2.9%, while the number of prescriptions per claim decreased 3.8%. These reductions are the result of aggressive formulary management, clinical interactions with claims professionals, and communications with prescribers throughout the care continuum.

Change in Utilization of Opioid Analgesics per Claim

▼ 2.9%

Number of Prescriptions per Claim ▼ 3.8%

Average Days' Supply per Prescription ▲ 0.9%

Number of Opioid Analgesic Prescriptions per Claim

▼ 3.8%

In regulatory and legislative affairs, state and federal governments continue to wrestle with the persistent use of opioid analgesics in the United States. Formularies, treatment guidelines, and prescribing restrictions are some of the choice tools for policy makers. (We discuss Closed Formularies and Treatment Guidelines in more detail on pages 40 and 52, respectively).

- The Drug Enforcement Agency (DEA) rescheduled all hydrocodone containing products (HCPs) to Schedule II, with the hope that prescribing physicians would re-evaluate patients and their need for HCPs.
- States like **Mississippi** are passing laws and rules limiting dispensing to a fixed number of MEDs.
- **New York** is one of a number of states to adopt treatment guidelines for the management of pain with opioid analgesics.
- **California** is currently in the stages of adopting revised Treatment Guidelines for Chronic Pain and and use of opioid analgesics.
- **Texas**, **Washington**, **Ohio**, and **Oklahoma** are reducing the use of opioid analgesics in their workers' compensation systems by adopting closed formularies or preferred drug lists.
- Several states are bolstering their Prescription Drug Monitoring Programs (PDMPs) by adding enforcement personnel and by imposing stricter reporting requirements to curb doctor shopping and to identify potential "pill mills."

While the downward trend in the utilization of opioid analgesics is positive, stakeholders must continue to monitor and rally support around efforts to reduce misuse and abuse situations without imposing undo administrative burden on the workers' compensation system. As conversations and initiatives continue to unfold, we must also remember that at the heart of workers' compensation is the injured worker; their interests must remain at the forefront of efforts intended to ensure the injured worker receives the right medication at the right time.

## MORPHINE EQUIVALENT DOSE

The MED per prescription as well as MED per claim declined by 3.8% and 7.4%, respectively.

These statistics demonstrate the positive contributions of our work in collaboration with our clients, as well as the slow change in physician prescribing patterns in response to the national efforts to reduce prescription opioid misuse and abuse.

Morphine Equivalent Dose (MED) per Prescription

▼ 3.8%

Morphine Equivalent Dose (MED) per Claim

▼ 7.4%

## COMPOUNDED MEDICATIONS

Compounding is the preparation of individualized medications using ingredients that combine in the exact strength and dosage form to meet the patient's specific needs. Pharmacists began as compounders centuries ago because commercially available products as we know them today, were not available.

Despite there being hundreds of medications available to a prescriber to treat his or her patient, on occasion a prescribed medication may not be commercially available or an injured worker may have a medication allergy or other condition for which the prescriber may recommend a compounded medication.

The vast majority of compounded medications seen in workers' compensation are non-sterile topical products. These are generally topical creams, solutions and ointments, suppositories, or oral formulations. Topical compounded medications are often prescribed to treat neuropathic pain, or muscle and joint pain. They may contain ingredients from several therapeutic class ingredients (e.g., muscle relaxants, anti-inflammatory agents, analgesics, or anticonvulsants). In addition, topical compounded medications often contain inactive vehicle ingredients, or bases. These bases deliver the active ingredients through the skin.

# UTILIZATION MANAGEMENT

The rising utilization of compounded medications throughout 2014 as first-line therapy without supporting medical documentation or evidence of efficacy, as well as their high cost, has led to many concerns.

*Topical compounds are generally considered second or third line therapies used primarily for neuropathic pain when trials of first-line therapy have failed, when an injured party is allergic to commercially available products, or has difficulty swallowing, has absorption issues, or has had adverse side effects to otherwise available medications.*

While at times useful in therapy, compounded medications are not without some safety concerns. They are often used despite the availability of only limited research and few randomized controlled trials. Moreover, because compounded medications are commonly distributed by sources other than the retail pharmacy, there can be a risk of drug interactions and therapeutic duplication. Education of the injured worker on how to use the medication, potential side effects, and the risks associated with the use of compounded medications is also sometimes lacking.

In 2014, the cost of compounded medications rose dramatically. In our book of business, total spend associated with compounded medications increased 36.8%. Shown below, the average daily spend for several of the more commonly used ingredients in compounded medications increased significantly.

*Figure 10*

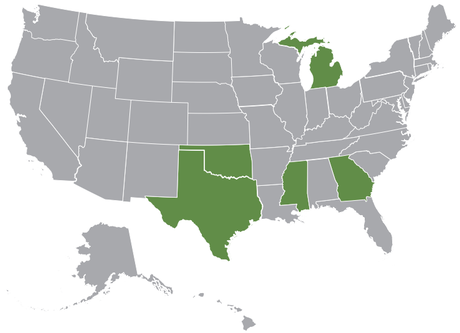
**TOP 10 INGREDIENTS USED IN COMPOUNDED MEDICATIONS RANKED BY SPEND**

| 2014 Rank | 2013 Rank | Ingredient | Change in Average Daily Spend |
|---|---|---|---|
| 1 | 1 | FLUTICASONE Powder | 18.8% |
| 2 | 3 | MELOXICAM Powder | 141.6% |
| 3 | 2 | FLURBIPROFEN Powder | 21.2% |
| 4 | 5 | GABAPENTIN Powder | 22.5% |
| 5 | 4 | KETAMINE Powder | 3.6% |
| 6 | 6 | BACLOFEN Powder | 27.6% |
| 7 | 8 | CYCLOBENZAPRINE Powder | 0.1% |
| 8 | 7 | KETOPROFEN Powder | -13.9% |
| 9 | 10 | PCCA LIPODERM Cream | 20.0% |
| 10 | 9 | DICLOFENAC Powder | -12.7% |

***Compounded medications represent 5.6% of total spend and less than 1% of total prescriptions in our book of business.***

The substantial growth in the cost of compounded medications is also causing regulators and legislators around the country to look at this issue. Many are exploring rules limiting the use of compounded medications, establishing price controls or fee schedules for compounds, or creating compound guidelines.

- **Oklahoma** requires pre-authorization for all compounded medications.
- **Texas** requires pre-authorization for any compound containing an ODG non-formulary medication.
- **Michigan** requires utilization of compounds to be approved only if evidence of their usage meets several medical and scientific-based requirements.
- **Georgia** limits reimbursement to a maximum of three ingredients.
- **Mississippi** employs a monthly dollar amount threshold.



Overall, the use of compounded medications to treat injured workers is controversial. Moreover, while there is a role for compounded medications, based on available medical evidence and recognized treatment guidelines, we believe it is limited. We caution authorization without documented medical necessity and believe the high cost and limited safety and efficacy studies must be considered.

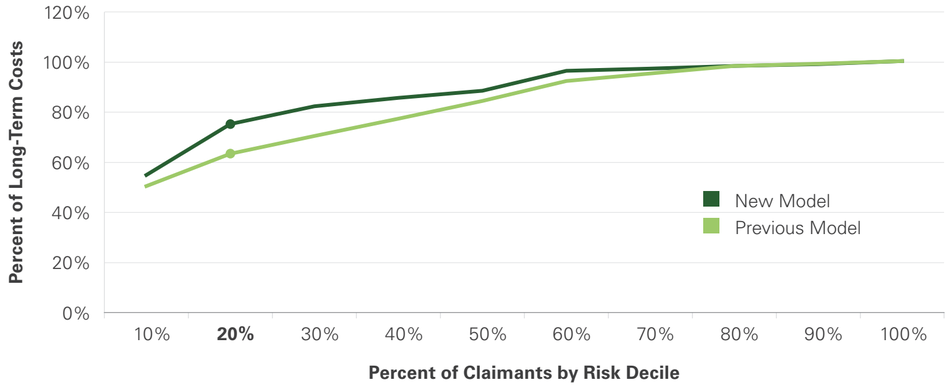
## EARLY INTERVENTION

Setting out to make measurable what previously was not, four years ago we began calculating an individual risk score to measure the potential of a claim becoming a high-cost pharmacy claim. Our clinical services team of pharmacists and nurses used risk scores to prioritize claim intervention efforts following a needs-based triage approach that combined the numbers from the algorithms with the experience of the clinician.

These beginnings evolved into a predictive analytics program predicated on statistical models and the workers' compensation industry's largest set of pharmacy data. Data includes specific pharmacy transactional information, basic claim demographics, and incorporates nationally available medical and population database metrics. We measure and weigh these data in statistical models built on decades of experience to show which predictors most strongly correlate to long-term pharmacy cost. It is these generated predictions that allow our clinicians to apply the right clinical resources to the right claims earlier in the claim life cycle.

*Figure 11*

**PREDICTIVE ACCURACY**




When the triage of the claim deems an intervention is necessary, the clinician may select from a suite of clinical tools deliberately designed to address claims of varying complexity. Examples include physician outreach, letter of medical necessity, medication review, and peer-to-peer outreach. Urine drug testing and monitoring is also an option, as allowed by jurisdiction.

*We compute **Expected Pharmacy Cost** for an individual injured worker as follows:*

***Stage 1 Severity Score**: The Stage 1 Severity Score uses a logistic regression model that measures data associated with the injured worker's severity. Once we generate a Stage 1 Severity Score, we calculate Stage 2 Cost Prediction.*

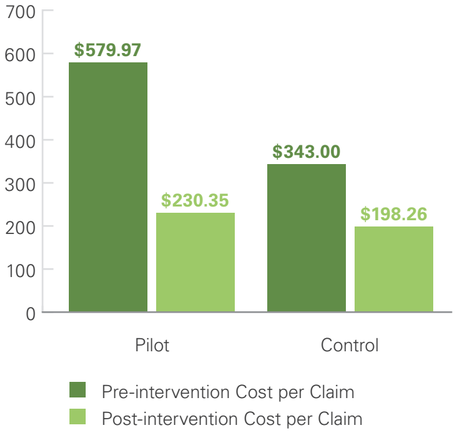
***Stage 2 Cost Prediction**: To arrive at the cost prediction, we use much of the same predictors though weighing some differently. We also incorporate pharmacy cost measurements, such as the use of brand medications instead of generics, or the quantities and types of therapeutic classes that the injured worker is using.*

*The outputs of the two stages are then combined.*

**Why go to all this effort?** The overall goal of the early intervention program (and really our total program offering) is to optimize the injured worker's medication therapy regimen as early as possible in the claim because we know that it is always more difficult to change behavior after the fact. In 2014, our clients continued to experience a high return on investment (ROI) for predictive analytics, including when tested against a control group. Figure 12 shows one example of a favorable impact. The significance of the difference of the pilot group versus the control is 89.8%.

*Figure 12*

**POSITIVE IMPACT OF EARLY INTERVENTION**



## Pharmacy Use as Claims Age

As a claim ages and the time from the initial injury increases, the average costs per claim increase. One of the factors contributing to this is the higher utilization of brand medications. Others include the use of opioid analgesics and the failure of first-line medication therapies. A first-line medication therapy should be used to begin therapy as long as there are not injured worker-specific comorbid or other conditions that would restrict or limit their use. Consider this in the context of a complicated chronic pain claim.

What we commonly see is the medication therapy expanding beyond the use of short-acting opioid analgesics. Short-acting opioid analgesics are typically available as a generic, which helps keep overall claim costs low in the early weeks and months of the claim. As the claim progresses, and the pain does not resolve, the opioid analgesics utilized escalate into long-acting or extended-release formulations, which are routinely associated with higher per transaction costs.

In 2014, the majority of claims in our book of business continued to fall into claim age bands (or years from date of injury) 1, 2, and 10+. Generally, we also continued to see fewer claims progressing into subsequent age bands 3-9. In essence, fewer claims, once started on pharmacy services, are escalating.

*Figure 13*

**CLAIM AGE BANDS AS A PERCENTAGE OF SPEND**

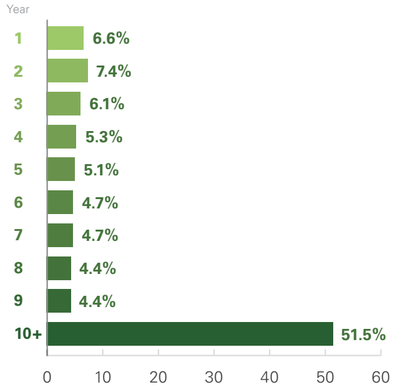
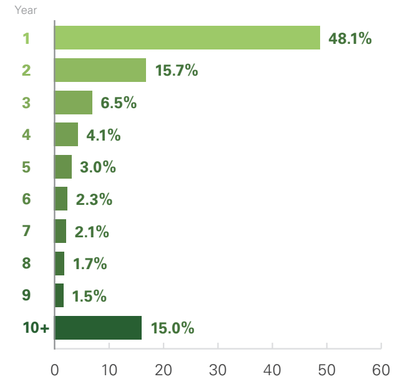



*Figure 14*

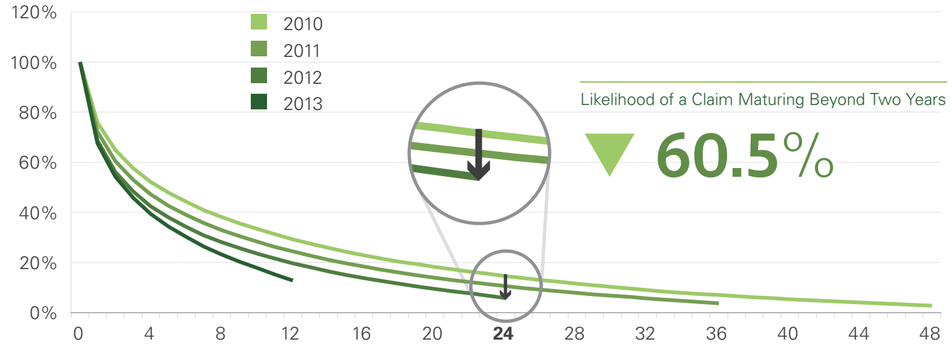
**CLAIM AGE BANDS AS A PERCENTAGE OF CLAIMS**




Based on how we structure and manage our program and the dynamics of our client base, this is as we would expect. Further evidence that our collaboration with payers is positively influencing claim outcomes is illustrated below. The likelihood of a pharmacy claim maturing beyond two years has decreased by 60.5%. Our work with clients continues to help gain more control over pharmacy-related claim expense early in the claim life cycle.

*Figure 15*

**CLAIM DURATION OF PHARMACY USE**




In years prior, post the launch of our predictive analytics program, we reported on the decreasing claim duration of pharmacy use associated with a subset of clients. The metric now represents our entire book of business.

# INDUSTRY INFLUENCES

# INDUSTRY INFLUENCES

Workers' compensation claim management requires navigation of a complex landscape. A myriad of influences exist that either support or challenge our ability to optimize medication therapy regimens as we manage pharmacy cost and utilization. This section discusses some of the prevailing industry influences in the context of pharmacy benefit management.

## AGING POPULATION

While aging is not by itself considered to be a medical disorder or disease, clinical research suggests that chronological age may play an important role in the types of workplace injuries observed and the progression of such injuries to more chronic conditions. The natural aging process is one reason. Body functions begin to decrease as early as the third decade of life. Advanced age is typically associated with a higher incidence of pain (e.g., age-related body deterioration), prolonged recovery and more prevalent psychiatric factors, such as depression, anxiety, and insomnia. Beyond age itself, comorbidities such as those discussed in this report can be problematic to an aging workforce. Older patients usually require more time to heal from an injury. In addition, older workers are more prone to common comorbidities such as hypertension and diabetes (Centers for Disease Control and Prevention, 2015).

Average life expectancy in the US rose to 78.8 years in 2012, according to a report on mortality published by the Centers for Disease Control and Prevention (CDC) (Xu, Kochanek, Murphy, & Arias, 2014). So, with an older workforce, age and age-related comorbidities will become increasingly more common. As this occurs, claim cost and duration may rise.

## INFLUENCE ON MEDICATION THERAPY

Attention to the potential effects that certain medications can have on the elderly population is essential to minimize the risks of adverse medication reactions. As people age, their metabolism of medications change and alterations in medication absorption occur. The associated increase in body fat results in more storage (and less elimination) of the fat-soluble products found in medications. These changes result in an increased sensitivity and greater side effect potential to medications (particularly opioid analgesics, hypnotics, benzodiazepines, and some antidepressants) in older people. Therefore, it is essential to factor advanced age into any decision where a new medication will be added to the injured worker's treatment plan.

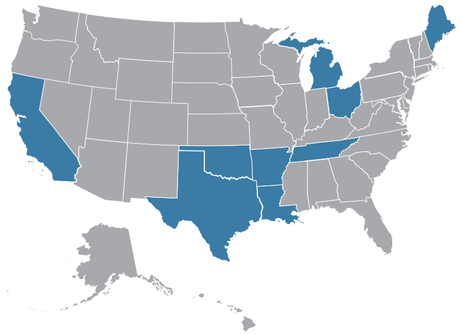
## CLOSED FORMULARIES

A formulary is an approved medication list often based on clinical review of evidence-based medicine and both nationally and regionally approved medical guidelines. Helios has used proprietary formularies to help manage the utilization of medications for specific injuries or a category of injuries for decades. Their application at the point-of-sale along with drug utilization review criteria and other program business rules is the first line of defense against claims leakage and prescription misuse and abuse.

Interest in the use of state-level workers' compensation-specific closed formularies has grown.

- In March 2014, the **Texas** Division of Workers' Compensation released a study on the impact of the closed formulary. The cost to the system for non-formulary or "N" drugs had fallen by 82%. The total number of prescriptions for "N" drugs was reduced by 74%, and 66% fewer injured workers were receiving "N" drugs (Texas Department of Insurance, 2014). Subsequent reports were similarly favorable. These accomplishments are the result of several factors. First, the Division invested a lot of time talking with and listening to stakeholders. Secondly, they instituted a strong data reporting system early on. Finally, the Division identified high prescribers and engaged them in an aggressive outreach program. This effort is one of the reasons for their success and is recognition of a basic but often ignored reality in the opioid debate—one of the best and most effective ways to encourage safe and appropriate utilization of opioid analgesics is through education.

  Success acknowledged, analysis of our data shows that some adjustments to the closed formulary may be needed to address "Y" drugs that appear to be unrelated to the workplace injury, yet are being permitted under the formulary rules. Additionally the data indicates that compounded medications that contain all "Y" drug ingredients may not be receiving sufficient review prior to approval. These are areas where we can help. This is because our formularies and a closed formulary are not mutually exclusive. In fact, when they work together, they provide an effective checks and balance system, starting at the prescribing level and continuing on through the dispensing, and ultimate use of, the prescribed medication.



- The **Ohio** Bureau of Workers' Compensation announced their system has experienced a $20 million savings in drug costs since 2011, with $17.8 million of that savings attributed to controlling the dispensing of opioid analgesics.
- **Oklahoma** formally adopted their closed formulary, effective February 1, 2014. In doing so they allowed the application of medication plans and formularies by PBMs to screen for unrelated medications, and second, they required prior authorization for all compounded medications regardless of the ingredients.
- **Louisiana** sent proposed legislation to interim study.
- **Arkansas**, **California**, **Maine**, **Michigan**, and **Tennessee** are also considering adopting formularies.

## COMORBID CONDITIONS

Comorbid conditions or comorbidities are medical disorders and diseases that can either accompany or affect the primary condition or injury. Common comorbidities include obesity, depression, insomnia, high blood pressure, heart disease, arthritis, high cholesterol, tobacco use, alcohol abuse, and diabetes mellitus. While the presence of comorbid conditions influences the treatment of workers' compensation injuries, the comorbidity itself may or may not be compensable. For example, a worker may have preexisting diabetes when he fractures his ankle from a slip and fall injury while at work. Consequently, his underlying diabetes may complicate or delay the healing process, but treatment for diabetes would likely not be compensable. On the other hand, if the work-related injury results in the development of a new disorder or comorbid condition, it may be compensable. An injured worker, for instance, who has sustained a low back injury and suffers from chronic pain, is at increased risk for developing depression. Furthermore, decreased energy levels and lack of restorative sleep that may accompany chronic pain might place the injured worker at an increased risk for weight gain and obesity. In some jurisdictions, the addition of antidepressants and prescription sleep aids can become part of the workers' compensation claim.

Whether comorbid conditions are pre-existing or work-related, their presence can adversely influence claim outcomes. In a 2012 research study, the National Council of Compensation Insurance (NCCI) looked at the impact of comorbidities on workers' compensation claims. According to this study, the percentage of workers' compensation claims with a comorbid diagnosis, such as diabetes, hypertension, and obesity, increased from 2.4% to 6.6% between the years 2000 and 2009 (Laws & Colon, 2012). One of the causes for the observed increase is the overall progression of illness rates among the general population. According to the data from the CDC, between 2000 and 2009:

- Hypertension rates increased from 25.6% to 28.7%
- Diabetes cases increased from 4.4% to 6.7%
- Obesity rates rose from 20.1% to 27.2% (Centers for Disease Control, 2014)

While the aforementioned certainly play a role in workers' compensation, such increases do not account for the tripled growth in the number of claims with a comorbid diagnosis. The NCCI study speculates that the additional growth is the result of increased provider awareness.

More providers are noting the presence of comorbid conditions and are adding the diagnoses to the medical file. This is a positive trend because it allows for safer, more efficacious, and holistic care management. An accurate comorbidity diagnosis can give the provider, the injured worker, and the payer more realistic expectations for return-to-work and recovery. The key is to ensure that the therapy regimen, pharmacologic and non-pharmacologic, proactively manages and accurately treats the underlying condition or conditions.

### Obesity

The impact of obesity on the workplace is profound, with $8 billion in obesity-related healthcare, 39 million lost workdays, and 239 million restricted-activity days (Wolf & Colditz, 1998). A Duke University study looked specifically at obesity's role in workers' compensation claims and found that medical costs were seven times higher among employees who were outside of the recommended Body Mass Index (BMI) (Ostbye, Dement, & Krause, 2007). It also showed that the costs and the amount of lost workdays increased linearly with an increase in BMI.

A follow-up study in 2009 by NCCI showed that workers' compensation claims involving obese injured workers are nearly three times more expensive than claims involving non-obese injured workers at the 12-month mark, but climb to a factor of 4.5 at the three-year mark, and 5.3 at the five-year mark (Laws & Schmid, 2009).

Millions of Americans are obese; however, obesity is most prevalent among middle-aged adults, ages 40-59 years old. Obesity is associated with increased pain and musculoskeletal problems, especially in the lower back, knees, and hips. It can also lead to additional complications or conditions that can increase a person's risk of serious illness and death, such as diabetes, stroke, heart disease, high blood pressure, high cholesterol, and gallbladder disorders.

**Influence on Medication Therapy**

The resultant increase in musculoskeletal pain intensity and duration caused by obesity places the injured worker at a higher risk for chronic pain, thereby increasing both the amount of pain medications required and the length of the claim. Additionally, the multiple comorbid conditions that frequently accompany obesity, such as high blood pressure and heart disease, can limit the safe use of non-opioid pain relievers, such as nonsteroidal anti-inflammatories (NSAIDs).


## Diabetes Mellitus

Diabetes mellitus is the condition in which the body does not properly maintain normal concentrations of sugar in the bloodstream, resulting in hyperglycemia or high blood sugar. Diabetes occurs when the body either does not make enough insulin (type 1 diabetes) or does not use its own insulin as well as it should (type 2 diabetes). According to the American Diabetes Association, 29.1 million people have diabetes mellitus—that is about one out of every 11 people. Further complicating the impact of diabetes on a claim, one out of every four people does not know they have diabetes (American Diabetes Association, 2014).

People with diabetes have a higher risk of serious health complications, such as blindness, kidney failure, heart disease, stroke, and amputation of the toes, feet, and legs. Diabetes can lengthen recovery time for burns, wounds, and fractures, and diabetic nerve pain (neuropathy) can prolong recovery time.

**Influence on Medication Therapy**

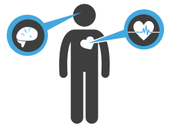
The elevated blood sugar levels in diabetes necessitate a more cautious selection of medication therapy in the treatment of injuries. For instance, steroids are often prescribed following an acute injury to reduce inflammation. The diabetic population is particularly vulnerable to profound elevations in blood sugar while taking steroids. In most circumstances, steroid courses are short in duration for the treatment of inflammation-related pain. However, people with inhalation-related lung injuries, such as chronic obstructive pulmonary disease (COPD), may be placed on a more prolonged course of steroids. Other non-steroid medications that may raise blood sugar levels in some diabetics and are often seen in workers' compensation claims include duloxetine (an antidepressant commonly prescribed for nerve pain) and olanzapine (an antipsychotic medication sometimes taken for severe depression).


## Hypertension

Hypertension or high blood pressure is the condition where the arteries are under constantly high pressure to pump blood through the body. When left untreated, high blood pressure can affect multiple organs throughout the body and can result in serious health problems, including stroke, heart attack, and kidney failure. Nearly one in three adults in the United States suffer from hypertension and only about half have their blood pressure under control as there are usually minimal to no physical symptoms of the condition (Centers for Disease Control, 2015). Up to 75% of adults with diabetes also have hypertension, and those with hypertension alone often show evidence of insulin resistance (Long & Dagogo-Jack, 2011). According to the CDC, about seven of every ten people who have a heart attack have high blood pressure, and eight out of every ten who have a stroke have high blood pressure.

**Influence on Medication Therapy**

Several therapeutic classes commonly seen in workers' compensation claims can worsen high blood pressure, particularly pain relievers and antidepressants. The pain medications of most concern include those from the anti-inflammatory class. The antidepressants carrying higher risks for worsening blood pressure levels include venlafaxine and bupropion.



## Cardiovascular Disease and Stroke

Cardiovascular disease is the leading global cause of death, accounting for 17.3 million deaths per year, a number that is expected to grow to more than 23.6 million by 2030 (American Heart Association, 2015). It is the number one cause of death in the United States, killing over 375,000 people a year—striking someone in the U.S. about once every 43 seconds. An estimated 735,000 people in the U.S. have a heart attack each year.

A stroke occurs when one or more of the blood vessels that carry oxygen and nutrients to the brain is either blocked or ruptured; because of the brain not receiving the oxygen it needs, brain cells die. Stroke is the number five cause of death and the leading cause of adult disability in the United States. About 795,000 Americans each year suffer from a new or recurrent stroke. That means, on average, a stroke occurs every 40 seconds. Direct and indirect costs of cardiovascular disease and stroke total more than $320.1 billion each year. That includes health expenditures and lost productivity (American Heart Association, 2015).

**Influence on Medication Therapy**

Injured workers with a history of heart disease or stroke must be cautious about using the same medications that can worsen hypertension and diabetes control, both of which are risk factors for heart disease and stroke. As noted earlier, the careful monitoring of blood pressure and blood sugar levels is warranted.

## Arthritis

Arthritis is one of the leading causes of disability in the U.S., with more than 50 million Americans suffering from the disease (Arthritis Foundation, 2015). Workers who develop the disease report some sort of work limitation. The Arthritis Foundation states that arthritis is a more frequent cause of activity limitations than heart disease, cancer, or diabetes.

Osteoarthritis is the most common form of arthritis and is associated with a breakdown of cartilage and narrowing of the joint space. It can develop in just about any joint of the body but most commonly affects the hips, knees, spine, shoulders, and hands. The pain experienced when placing weight on an arthritic joint can lengthen an injured worker's recovery time and decrease his or her overall activity levels, resulting in a more sedentary lifestyle and a higher risk for obesity, depression, and heart disease.

About 1% of Americans have rheumatoid arthritis. It is an autoimmune disease, meaning the body's immune system attacks its own tissues. After triggering the immune system, immune cells migrate from the blood into the joints and joint-lining tissue, called synovium. There, the immune cells make inflammatory substances that cause irritation, wearing down of cartilage, and causing swelling and inflammation of the joint lining. Rheumatoid arthritis is two to three times more common in women than men (Arthritis Foundation, 2015).

**Influence on Medication Therapy**

The medications used for the treatment of arthritis focus on the prevention of further joint space damage and pain relief. In both osteoarthritis and rheumatoid arthritis, the inflammatory component of the condition is usually treated with an anti-inflammatory medication. In the management of rheumatoid arthritis, as opposed to osteoarthritis, pharmacologic intervention to address the autoimmune component of the disease has become the standard of care. In this case, specialty medications called disease-modifying antirheumatic medications (DMARDs) are being used to suppress the body's abnormal immune response. Non-opioid analgesics and anti-inflammatories are the preferred treatment for arthritis-related pain. Finally, those injured workers who are already receiving medication therapy for their underlying arthritis are at risk of over-utilization if they receive additional medication in the same class for the treatment of their work-related injury.

## Depression

Nearly one in five adults age 18 and over suffer from a diagnosable mental disorder in a given year, including major depressive disorder, chronic mild depression, and anxiety disorders are among these (Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, 2014). For injured workers, the cumulative effects of stress, the decrease in daily activities, concerns over money, feelings of worthlessness or hopelessness, and even side effects from certain medications can result in feelings of depression. This in turn can prolong and increase the effects of pain—a cycle that can have a profound impact on a claim through increased medication usage and/or extended claim duration. Approximately 50% of patients with chronic pain have some degree of depression, and chronic pain patients are four times more likely to experience anxiety or depression than those not affected by chronic pain (Centers for Disease Control and Prevention, 2015).

**Influence on Medication Therapy**

When counseling and other psychological interventions are unsuccessful in relieving feelings of depression, adding pharmacologic management may be indicated. A variety of antidepressants with distinct mechanisms of action are available for the treatment of depression, allowing the physician to try different medications if success is not achieved with initial attempts. In situations where pain is also ongoing, the use of antidepressants with pain relieving properties is an option. Serotonin norepinephrine reuptake inhibitors (SNRIs) may be quite effective at treating depression, while providing additional pain relief. As with any medication however, the potential side effects and drug-drug interactions when used alongside other medications must be thoroughly evaluated.

## Insomnia

Insomnia is defined as "difficulty falling asleep, staying asleep or non-restorative sleep, occurring at least three times per week for at least a month." About 30% of adults have symptoms of insomnia, with 10% having it severe enough to cause disruption to their day. A high rate of insomnia is seen in middle-aged and older adults, with women more likely to develop insomnia than men. Those with a medical or psychiatric illness, including depression, are at risk for insomnia. Medications, including but not limited to some antidepressants and corticosteroids, can also cause insomnia as a side effect (American Academy of Sleep Medicine, 2015).

Since sleep is a restorative process for the human body, a lack of sleep can cause cyclical issues for an injured person where a lack of sleep increases pain and pain increases insomnia. Sleeplessness can also influence other comorbid conditions, such as obesity, anxiety or depression, and high blood pressure. This makes proper treatment of both pain and insomnia essential to recovery.

**Influence on Medication Therapy**

The pharmacologic treatment of insomnia requires careful evaluation of all medications an injured worker is taking, both prescription and nonprescription, due to the significant risks of drug-drug interactions. Any combination of sedating medication classes, such as hypnotics, opioid analgesics, muscle relaxants, and benzodiazepines, can substantially increase the risk of respiratory depression and death. For this reason, insomnia is best treated with proper training in effective sleep hygiene techniques and other nonpharmacological measures to help restore normal sleep patterns. If hypnotics or sedatives are prescribed, they should only be taken with caution and for the shortest amount of time necessary.

## Substance Use

Alcohol abuse and tobacco use are also considered comorbid conditions. Although tobacco use has declined substantially in the United States, it remains the second-leading cause of total deaths and disability (American Heart Association, 2015). Furthermore, it is well documented that tobacco use can result in medical conditions that impair respiratory function and physical activity, including COPD. Businesses pay an average of $2,189 in workers' compensation costs for smokers, compared with $176 for nonsmokers (Musich, Napier, & Edington, 2001). Tobacco use has also been found to prolong recovery from low back injuries.

With respect to alcohol, numerous studies suggest a significant relationship between work-related stress and the development of drinking problems. Alcohol consumption can cause complications with medications, bring on symptoms of depression, and impair one's ability to do physical activities needed to recover from an injury.

**Influence on Medication Therapy**

Because smoking can raise blood pressure, there can be a combined effect further contributing to an increased risk of stroke and heart disease when people who smoke also use medications, such as NSAIDs, which can raise blood pressure. Smoking cessation can therefore be an essential component to the recovery from an injury and pivotal to the future wellness of a worker. While compensability and work-relatedness are valid concerns in workers' compensation, the successful resolution of a claim with a more positive outlook on employee health may guide employers and payers to seek smoking cessation programs and medication options.

While some health benefits of alcohol consumption in moderation have been described, the potential interactions between alcohol and medications present an ongoing challenge to safety. For instance, not only can alcohol increase the effects of some anticoagulants (also known as blood thinners), making a bleeding complication more likely, it can also substantially amplify the sedative effects of opioids, benzodiazepines, hypnotics, and other sedating medications.

## MEDICAL MARIJUANA

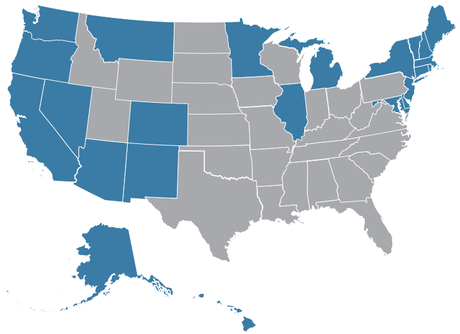
The U.S. Drug Enforcement Administration (DEA) considers medications and other substances having potential for misuse or abuse as controlled substances. Under the Controlled Substances Act (CSA) of 1970, controlled substances are divided into five schedules based on whether they have a currently accepted medical use in treatment in the United States, their relative abuse potential, and likelihood of causing dependence when abused. A substance classified as Schedule I has no currently accepted medical use in the United States and a high potential for abuse. Some examples include heroin, lysergic acid diethylamide (LSD), and 3, 4-methylenedioxymethamphetamine ("Ecstasy"). Marijuana is also as classified as a Schedule I substance (U.S. Department of Justice Drug Enforcement Agency, 2013).

Although the FDA has never approved the use of medical marijuana, physicians are recommending marijuana in a variety of delivery methods to treat conditions such as human immunodeficiency virus (HIV)-induced cachexia, cancer-related nausea/vomiting, anorexia, glaucoma, epilepsy, multiple sclerosis, and inflammatory bowel disease. Increasingly, physicians are also recommending marijuana to treat severe chronic pain although treatment guidelines such as ODG, ACOEM, AMA, and American Society of Addiction Medicine (ASAM) either do not recommend or caution the use of medical marijuana.

Employers face a variety of challenges because of the changing legislative and regulatory landscape. A heightened level of concern exists when an injured worker returns to a safety-sensitive occupation, such as driving or construction, while subject to the potential adverse cognitive and psychological effects of marijuana. Quantification of the amount of marijuana consumed by the injured worker is not available through urine drug testing, thereby limiting the ability to determine if he or she has consumed the recommended amount, or is in fact acutely intoxicated.

Understanding the potential impact to Drug Free Workplace policies as well as other safety and risk management protocols and programs is difficult at best. Adding to this complexity is precedent set in the state of New Mexico. In 2014, in the case of *Gregory Vialpando v Ben's Automotive Services and Redwood Fire & Casualty*, a court of appeals in New Mexico ordered the employer to reimburse the injured worker for the cost of medical marijuana, ruling that the treatment was reasonable and medically necessary care consistent with the states "compassionate use" legislation. The courts also cited compassionate care laws as a basis for their decision (Vialpando v. Ben's Automotive Services and Redwood Fire & Casualty, 2014). A California court is questioning whether the Schedule I status for medical marijuana violates the equal protection clause of the 14th amendment. Additionally, the DEA has formally asked the FDA to re-evaluate the Schedule I status of marijuana to determine if such a strict status is still justified and realistic (Ferner, 2014).

These are all signs of changing times and an evolving landscape that payers must be prepared to navigate. Based on the Schedule I classification and the available medical evidence, medical marijuana remains excluded from our formularies.



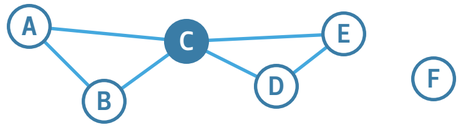
***23 states and Washington D.C. have legalized the use of marijuana for medicinal and/or recreational purposes.***

## PRESCRIBER DEMOGRAPHICS

Prescriber demographics are recognized factors influencing the outcome of a claim. We know that two injured workers with equal pharmacy behavior and similar injures may have different predicted outcomes based on the specialty of the prescriber writing their prescriptions. However, what about other prescriber demographics—how do they influence the potential for a claim to become a high-cost pharmacy claim? Given our access to the industry's largest pharmacy data set and statistical knowledge needed to understand how to analyze and interpret what the data is telling us, we knew there had to be more.

*Figure 16*

**PRESCRIBER CONNECTIONS**




We have begun using "network analysis" to identify connections among prescribers to predict pharmacy costs. This is a technique used in many other places. For example, pharmaceutical companies use network analysis to identify influential physicians in order to target them with customized marketing campaigns (Thomas, 2013). With our data, we are able to identify connections among prescribers. For example, two prescribers writing prescriptions for the same injured worker can be "connected." If they are not writing prescriptions for the same injured worker, they are not connected.

Figure 16 demonstrates this; prescribers A, B, and C have patients in common. Prescribers C, D and E also have patients in common, while F has no patients in common. Prescriber C is the most highly connected prescriber; prescriber F is the least connected prescriber.

This advanced analysis is one of the reasons we can generate the accurate pharmacy cost predictions into the future as we demonstrated in the earlier sections (see Early Intervention section, page 34).

## SPECIALTY MEDICATIONS

Treating complex medical conditions such as rheumatoid arthritis (RA), Hepatitis C, HIV, some cancers, and certain blood clotting disorders (among others) that are more commonly encountered in group health is often complex. Medications used to treat these disorders and diseases are often referred to as specialty medications because of their limited use, high cost, and complicated regimens.

As in years past, the number of claimants receiving a typical specialty medication is small. In 2014, specialty medications represented 0.2% of total prescriptions dispensed. In terms of spend however, the cost of specialty medications increased rather substantially, rising 26.5%. This cost increase was influenced by the introduction of new medications for the treatment of Hepatitis C, the increased use of medications for HIV prophylaxis and treatment, and AWP inflation.

Cost per Prescription of Specialty Medications

▲ 26.5%

While the definitions of specialty medications can be different from payer to payer, utilizing formularies and other clinical resources such as those we provide to help validate the appropriateness of their use to treat the work-place injury is a best practice payers can employ. In addition, the use of case managers can be beneficial as injured workers often benefit from medication education and adherence monitoring when specialty medications are prescribed. Shown below are some of the more frequently encountered specialty medications, along with the associated average price per prescription. While the average price per prescription is significant, it is important for payers to keep in mind that the use of a specialty medication in the treatment of work-related conditions often results in a better outcome, clinically as well as financially.

*Figure 17*

**SPECIALTY MEDICATIONS USED IN WORKERS' COMPENSATION**

| Indicated Use• | Medication | Average Price per Prescription |
|---|---|---|
| Human Immunodeficiency Virus (HIV) | Truvada® | $796.53 |
| Human Immunodeficiency Virus (HIV) | Combivir® | $448.23 |
| Hepatitis B/C | Pegasys® | $3,126.06 |
| Hepatitis C | Sovaldi® | $28,937.11 |
| Blood Clot Prevention and Treatment | Lovenox® | $634.97 |

*Duration of therapy varies
Expanded data set available in the Appendix

## TREATMENT GUIDELINES

The Official Disability Guidelines (ODG) and American College of Occupational & Environmental Medicine (ACOEM) are both national standards referenced by nearly half of the states, with several additional states moving toward adopting their own state-based guidelines. Although there are differences in the scope of injuries covered, there are prevailing themes regarding the appropriate use of opioid analgesics in the treatment of the injured worker, including: screening, opioid selection, therapy duration, response documentation, allowed prescribers, daily dosage, and ongoing monitoring.

- **Screening.** Prior to prescribing opioid analgesics, prescribers may first be asked to determine if there is a risk due to psychological factors (i.e., anxiety, depression, history of substance abuse) that may predispose the injured person to misuse or abuse. They may also have to document start-of-care urine drug testing to establish baseline information.

- **Opioid Selection.** Opioid analgesics may only be recommended when other non-opioid analgesics, such as anti-inflammatory medications, have not been effective.

- **Therapy Duration.** Guidelines may establish estimated durations or recommend that treatment goals be established at initiation of therapy. These pre-set goals assist in making decisions around medication changes, or discontinuation, if there is no improvement in pain and function over the course of treatment.

- **Response Documentation.** The prescriber should document the injured person's response to the medication therapy and progress toward recovery of function and return to work.

- **Number of Prescribers.** Guidelines generally recommend that only one prescriber manage all therapy involving opioid analgesics. Some guidelines may state that the prescriber of opioid analgesics be a pain management specialist if high doses of opioid analgesics are being utilized.

- **Dosage.** Therapy exceeding a daily MED above certain set limits is offered by several guidelines. Three widely cited are ACOEM at 50 MED, California's guideline at 80 MED, and the ODG at 100 MED. While all guidelines are just that, guidelines, the healthcare professional working with the injured worker should always excercise care when prescribing opioid analgesics. It is also important to make sure that the injured worker and their caregivers understand the risks and benefits of opioid therapy.

- **Monitoring.** Just as with other medication therapy, diagnostic tests can be helpful in treating the injured workers experiencing pain. With opioid therapy, drug tests are often recommended. These tests should generally be performed prior to the initiation of opioid therapy and randomly two to four times annually to assess medication adherence.

Extensive analysis of evidence-based medicine and both nationally and regionally approved medical guidelines have been the foundation of our programs and clinical recommendations for years. Our programs are valuable in ensuring compliance with drug lists and blocks, encouraging the use of generic medications, and otherwise assisting in the effort to assure the prescribed medication therapy is safe, appropriate, and cost-effective.

In 2014, the industry experienced growing momentum in the use of treatment guidelines as a tool to manage the prescribing of opioid therapy. Efforts enforcing compliance with treatment guidelines also increased.

- **Arizona** continued to consider pain treatment guidelines.

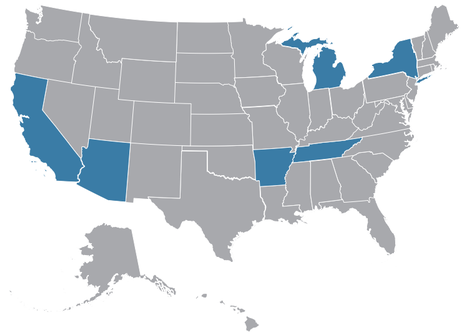
- **Arkansas** proposed a rule change to adopt ODG that is under review by the Governor's Office.

- **California** recently updated the state's Opioid Treatment Guidelines.

- **Michigan** released a proposed rule addressing opioid utilization.

- **New York** continued to refine their treatment guidelines.

- **Tennessee** started to study options.



***We expect interest in state-specific treatment guidelines will continue. Helios will remain as a resource for the states throughout the coming year.***

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

Therapeutic class is a method of categorizating medications based on how they affect the body. This year, the top ten therapeutic classes account for 85.3% of total spend. While nine of the ten are a repeat from previous years, there was a new class appearing for the first time—Bulk Medications and Chemicals. This class, which represents some of the ingredients used in compounded medications, entered the top ten at number seven. A move of four spots from the previous year, this signifies the dramatic increase in the use of topical compounds in our industry over the last year. Close monitoring and management of this class of medications should be a key priority by stakeholders in our industry.

The top ten therapeutic classes follow with information about how the medications within each of the classes are typically utilized in the treatment of workers' compensation injuries. Also included is discussion on the top 25 medications in terms of spend and number of prescriptions.

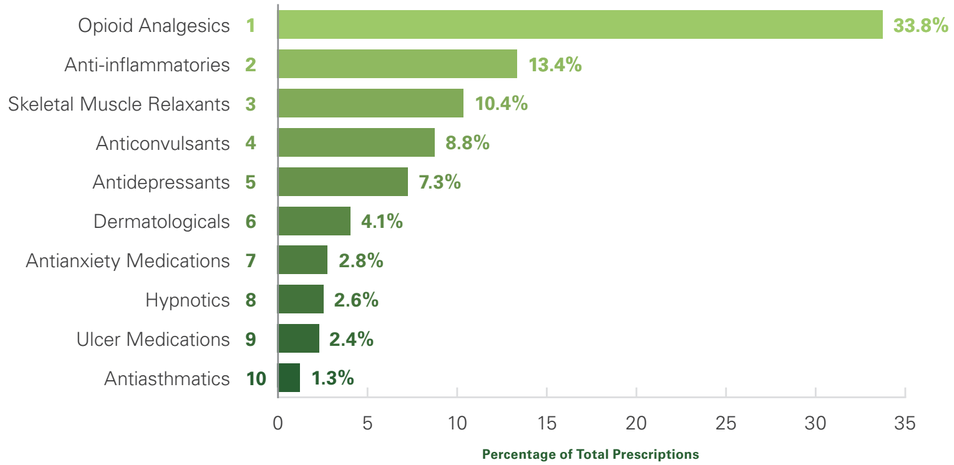
*Figure 18*

**TOP 10 THERAPEUTIC CLASSES RANKED BY TOTAL SPEND**

| Therapeutic Class | Percent of Total Spend | 2014 Rank | 2013 Rank |
|---|---|---|---|
| Opioid Analgesics | 30.9% | 1 | 1 |
| Anticonvulsants | 11.7% | 2 | 2 |
| Anti-inflammatories | 10.7% | 3 | 3 |
| Antidepressants | 7.4% | 4 | 4 |
| Dermatologicals | 7.3% | 5 | 5 |
| Skeletal Muscle Relaxants | 6.1% | 6 | 6 |
| Bulk Medications and Chemicals | 3.6% | 7 | 11 |
| Ulcer Medications | 2.8% | 8 | 7 |
| Hypnotics | 2.5% | 9 | 8 |
| Antipsychotics | 2.3% | 10 | 10 |
| **Sum of Top 10 Classes** | **85.3%** | | |

*Figure 19*

**TOP 10 THERAPEUTIC CLASSES RANKED BY NUMBER OF PRESCRIPTIONS**




When we mention treatment guidelines in this section, we are generally referring to national standards; The Official Disability Guidelines (ODG) and American College of Occupational & Environmental Medicine (ACOEM), unless otherwise noted.

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

## OPIOID ANALGESICS

Medications in this therapeutic class are commonly used to treat pain in the acute (<90 days) and chronic (≥90 days) injury periods and are generally known as opioids.

Used in the management of moderate to severe pain following trauma, surgery, or nerve damage, opioid analgesics are considered first-line therapy in patients experiencing pain not adequately relieved by non-opioid analgesics, such as acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs). Opioid analgesics are classified according to the duration of their effects, either short-acting or long-acting.

*A **short-acting opioid** is a medication dosage form in which the total amount of the medication is released into the body upon administration.*

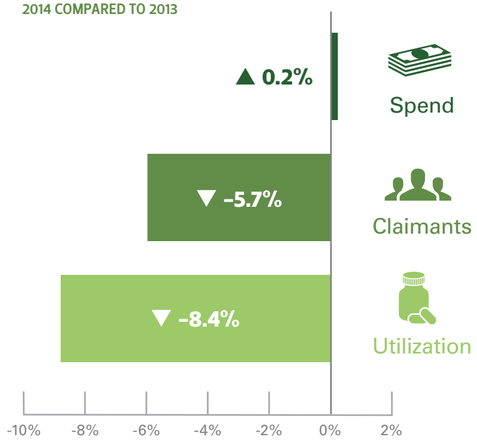
***Long-acting opioids** are medications formulated specifically for an extended or prolonged release into the body upon administration. This is generally related to the physical properties of the dosage form itself.*

***Chronic pain** is pain that persists longer than normally expected after a given injury, accident, or surgical procedure. While there are several definitions for chronic pain, Helios defines chronic pain as persisting longer than 90 days from initial injury.*

Short-acting opioid analgesics are useful in the management of both acute pain and breakthrough pain, which is an acute pain exacerbation that occurs despite the presence of a long-acting analgesic. A short-acting opioid analgesic may only bring pain relief for a few hours. Conversely, a long-acting opioid analgesic is designed to be released slowly over many hours or, in the case of patches, which can be used for a set number of days. When treating chronic and severe pain, guidelines generally recommend using a combination of long-acting and short-acting analgesics to ensure that pain is adequately controlled and the injured worker's functional status is improved.

*Figure 20*

**COST AND UTILIZATION TRENDS FOR OPIOID ANALGESICS**
**2014 COMPARED TO 2013**




### Spend

Our spend on claims rose 0.2% even though the number of injured workers utilizing opioid analgesics was down almost 6% and utilization was down by 8.4%.

One reason spend increased despite the large reduction in overall utilization of opioid analgesics was the significant increases in AWP for several commonly used opioid analgesics.

The average billed per prescription of oxycodone-acetaminophen jumped 60.6% and hydrocodone-acetaminophen had a 10.2% increase. This reflected the steadily increasing AWP throughout 2014.

### Utilization

Looking specifically at utilization of certain opioid products, we find there were only slight changes in the use of one particular opioid analgesic over another, with three exceptions.

- Tramadol (Ultram®) had a 6.3% increase in utilization, which may reflect some of the early trends we saw wherein there was a shift in response to the rescheduling of hydrocodone containing products to Schedule II in October 2014.
- Tapentadol (Nucynta®) was another medication with a significant shift. In 2014, utilization of the short-acting formulation dropped 20%.
- The release of a generic formulation (non-crush resistant) for Opana® ER has had an interesting impact. In 2013, the generic dispensing rate for Opana® ER was 24.6%. In 2014, the generic dispensing rate decreased to 19.1%. Since the two products are considered generically equivalent, unless the prescriber writes for Dispense as Written (DAW1), the generic (non-crush resistant) will be dispensed.

  The 4.5-point change in dispensing rate may indicate that prescribers are insisting on, or otherwise adapting towards, use of abuse-deterrent products.
- Also influencing utilization is the growing momentum to not only use, but also enforce utilization of treatment guidelines, specifically opioid therapy. The ODG and ACOEM are both national standards referenced in many of the state workers' compensation rules or regulations. Several states have or are moving toward adoption of their own treatment guidelines. Most recently, the California Division of Workers' Compensation proposed additional state-based guidelines for the treatment of chronic pain, founded in ODG.

***In 2014, the overall percentage of injured workers across our book of business using opioid analgesics in the treatment of their pain decreased from 61.8% to 60.2%.***

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

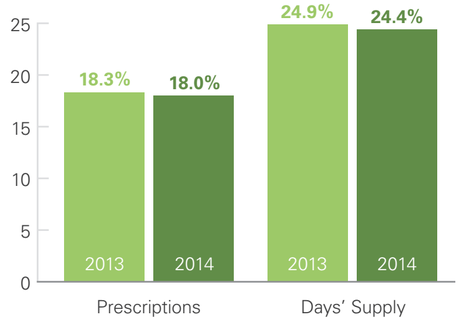
Since 2009, there have been six long-acting opioid analgesics added to the market:

- Embeda® (morphine-naltrexone ER) released in Q4 2009, but was taken off the market in 2011 due to safety concerns regarding the sustained release formulation. The product re-launched in Q4 2014.
- Exalgo® (hydromorphone ER) released in Q3 2010
- Butrans® (buprenorphine patch) released in Q2 2011
- Nucynta® ER (tapentadol ER) released in Q4 2011
- Zohydro® ER (hydrocodone ER) released in Q2 2014
- Xartemis® XR (oxycodone-acetaminophen XR) released in Q2 2014

Interestingly, this has had almost no impact on the utilization of long-acting opioid analgesics. Some would postulate that with new agents on the market, the overall use of long-acting opioid analgesics would increase. However, we find that overall usage of long-acting opioid products remains steady, seemingly demonstrative of a shift in market share from one product to another within the opioid analgesic therapeutic class versus an increase in the utilization of the opioid analgesic class.

*Figure 21*

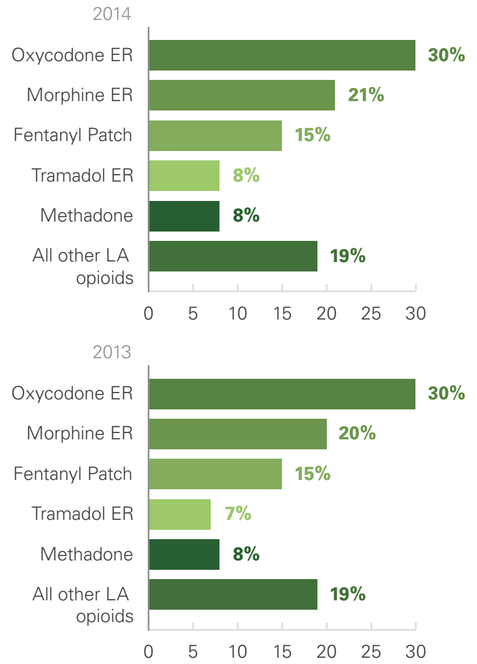
**LONG-ACTING OPIOID ANALGESICS AS A PERCENTAGE OF TOTAL OPIOID ANALGESIC USE**




Additionally, the overall impact of the newer long-acting opioids still represents <20% of total opioid utilization in both 2013 and 2014. The majority of long-acting opioid utilization continues to be with products that have been on the market for more than ten years.

*Figure 22*

**COMMONLY USED LONG-ACTING (LA) OPIOID ANALGESICS**




## Outlook 2015

We anticipate long-acting opioid analgesics will continue to decrease in overall use, despite the availability of new products, because of our efforts working in concert with clients and other industry stakeholders. The availability of crush-resistant or abuse-deterrent formulations will increase and will likely be drivers of total spend, but these products will not increase the overall use of long-acting opioid analgesics. Related, the average MED will continue to decline, driven by our clinical oversight and backed by treatment guidelines at the state and industry levels.

There are no generic medication entries anticipated in 2015 in the opioid analgesic therapeutic class.

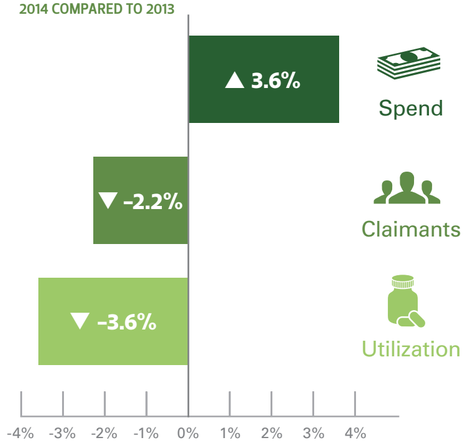
## ANTICONVULSANTS

Anticonvulsant medications are typically used in the management of seizure disorders. However, in workers' compensation, they are also used routinely in the management of neuropathic pain. Since neuropathic pain does not typically respond as well to traditional analgesics (both opioid analgesic and non-opioid analgesic medications), anticonvulsant therapy is often a first-line approach for this type of pain. Movement from one medication to another within this category is common. If one anticonvulsant does not work, another may be tried to see if relief is obtained within this therapeutic class.

Treatment guidelines consider anticonvulsants as a first-line option for the treatment of neuropathic pain, even though the use would be considered "off-label" from the FDA approved indication.

*Figure 23*

**COST AND UTILIZATION TREND FOR ANTICONVULSANTS**
**2014 COMPARED TO 2013**




***Neuropathic pain**: Chronic pain resulting from injury to the nervous system. The injury can be to the central nervous system (brain and spinal cord) or the peripheral nervous system (nerves outside the brain and spinal cord).*

The three anticonvulsants that account for the majority of the spend and utilization in workers' compensation are pregabalin (Lyrica®), gabapentin (Neurontin®), and topiramate (Topamax®).

*Figure 24*

**ANTICONVULSANTS BY TOTAL SPEND 2014**

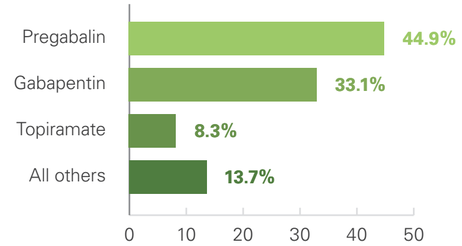
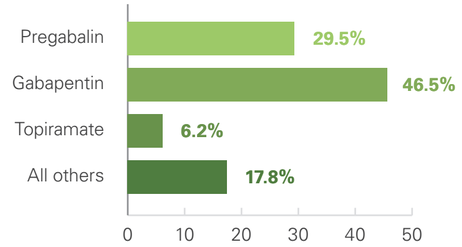



*Figure 25*

**ANTICONVULSANTS BY DAYS' SUPPLY 2014**




### Spend

Although the anticonvulsant therapeutic class accounts for 11.7% of total spend, it represents only 8.8% of total prescriptions, ranking behind both the anti-inflammatory and the skeletal muscle relaxant categories.

### Utilization

There was a 4.5% increase in the total days' supply of gabapentin, with a 1.7% drop in Lyrica®, indicating a continued shift towards gabapentin as first-line therapy for neuropathic pain. A sustained-release version of gabapentin (Gralise®), which is not classified as an anticonvulsant, had a 12.3% increase in utilization, further reflecting the increased use of gabapentin instead of Lyrica®. Meanwhile, clonazepam (Klonopin®), a benzodiazepine, had a 14.2% decrease in total patients receiving therapy, reflecting the continued reduction in the long-term use of benzodiazepines in the treatment of the injured worker.

We consider these changes favorable because gabapentin has a 62% lower average cost per days' supply (gabapentin is $4.09 whereas Lyrica® is $10.84). It has been shown that the extended use of benzodiazepines can increase the risk of psychological and physical dependence and addiction. Additionally, benzodiazepines are not recommended for long-term use because efficacy is unproven. They are considered as non-formulary medications in treatment guidelines.

### Outlook 2015

Absent any changes in current market conditions or other supply and demand forces, it is anticipated that Lyrica® will continue to influence overall spend in this class. While it is not the most commonly prescribed medication in this class, its cost drives nearly half of the total anticonvulsants spend. A generic alternative is not expected before 2018 and no other generic medications are expected to enter the market in 2015 in this therapeutic class.

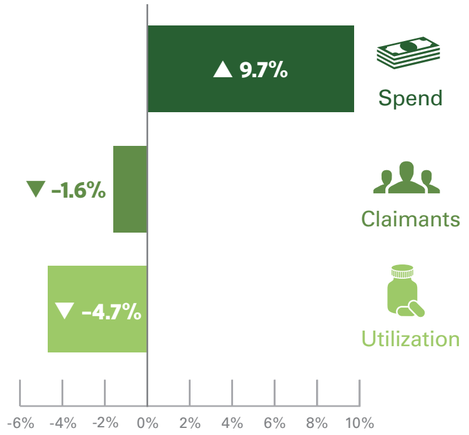
## ANTI-INFLAMMATORIES

Nonsteroidal anti-inflammatory medications (NSAIDs) are some of the most commonly used medications in workers' compensation for the treatment of mild to moderate pain, especially when an inflammatory process is part of the injury. Considered a first-line therapy, medications in this class are not only available over-the-counter, but are also available in prescription strength as a single entity or in combination with opioid analgesics or ulcer medications.

Medications in this class exhibit various therapeutic differences, producing varied responses in individuals. As such, a prescriber has many options to choose. This being said, there are three anti-inflammatory medications that are not generally considered as a first-line therapy recommendation: diclofenac because of potential cardiovascular and hepatic side effects, and the combination products Duexis® (ibuprofen-famotidine) and Vimovo® (naproxen-esomeprazole), which combine an anti-inflammatory with an anti-ulcer medication. These medications are recommended only after a trial of single-agent formulations has failed.

*Figure 26*

**COST AND UTILIZATION TREND FOR ANTI-INFLAMMATORIES**
**2014 COMPARED TO 2013**




### Spend

The notable increase in spend was heavily influenced by AWP inflation for two medications: Duexis®, with a 101% increase and Celebrex® (celecoxib), with a 21% increase.

*Generic ibuprofen products, which are the top anti-inflammatory medication when looking at transaction volume, increased an average of 79% in AWP. This dramatic increase in AWP resulted in an average 35.3% increase in the individual cost per prescription.*

### Utilization

Celebrex® showed an overall decrease of 4.4% in total days' supply and 6.4% fewer injured workers received this NSAID therapy. Meanwhile, days' supply of other traditional NSAIDs, such as meloxicam and naproxen, increased. Looking back to previous years, this continues a trend where more traditional, generic NSAIDs are being prescribed with greater frequency. We view this as a favorable trend because it seemingly indicates NSAIDs are being used as first-line pain management therapy instead of opioid analgesics.

Although only used by a small percentage of total injured workers (1.1%), Duexis® was used by 33.4% more injured workers in 2014. Utilization of diclofenac continued to decrease as well, down 7%.

### Outlook 2015

In response to the release of celecoxib, the generic equivalent for Celebrex®, the overall spend for anti-inflammatory therapeutic class should decrease in 2015.

While we need to keep a close eye on compounded medications, we expect the trend of using oral NSAIDs for the initial treatment of pain and inflammation will continue. Given the overall low cost per injured worker of these medications and avoidance of opioid analgesics, this is a positive trend.

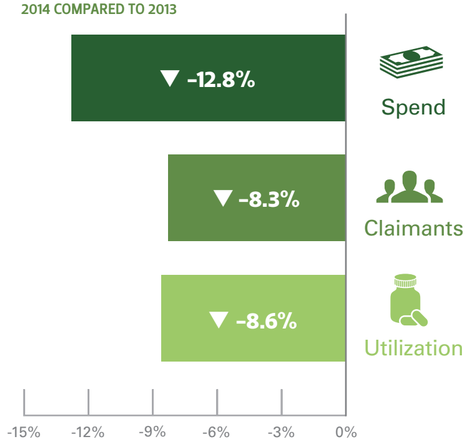
## ANTIDEPRESSANTS

Depression can be a common comorbid condition in injured workers with chronic pain and may require both cognitive behavioral therapy as well as medication management to treat or regulate the symptoms. Specifically related to workers' compensation, many antidepressant medications are also useful in the management of neuropathic pain. Since neuropathic pain may not be relieved by traditional analgesics, i.e., non-opioid and opioid analgesics, certain antidepressants may be helpful.

Although there are many antidepressant agents currently available, only a few have the evidence to support their use in the management of neuropathic pain. If one particular agent does not provide pain relief after an adequate trial, the treating prescriber can, and often will, prescribe another antidepressant from a different class.

*Figure 27*

**COST AND UTILIZATION TREND FOR ANTIDEPRESSANTS**
**2014 COMPARED TO 2013**




### Spend

Spend associated with antidepressants decreased by nearly 13% in 2014, influenced by the generic release of Cymbalta® (duloxetine) in December 2013. Additionally, medications in this class experienced little, if any, change in AWP.

### Utilization

Guideline recommendations suggest using duloxetine and tricyclic antidepressants in the treatment of neuropathic pain. As noted in figure 28, the change in days' supply reflected positively in the increase of overall use of these medications compared to other antidepressants not recommended for the treatment of pain.

*Treatment guidelines recommend duloxetine (Cymbalta®), venlafaxine (Effexor®), and the tricyclic antidepressants such as amitryptiline for the treatment of chronic pain and depression. However, other classes of antidepressants that include fluoxetine (Prozac®), bupropion (Wellbutrin®), and escitalopram (Lexapro®) are only recommended for the treatment of depression.*

*Figure 28*

**CHANGE IN DAYS' SUPPLY FOR ANTIDEPRESSANTS**

| With dual pain/depression recommendation | Change in Days' Supply |
|---|---|
| Nortriptyline (Pamelor®) | 8.8% |
| Doxepin (Sinequan®) | 2.5% |
| Amitriptyline (Elavil®) | 1.8% |
| Duloxetine (Cymbalta®) | 1.5% |

| Recommended only for depression | Change in Days' Supply |
|---|---|
| Fluoxetine (Prozac®) | -3.5% |
| Escitalopram (Lexapro®) | -5.4% |
| Citalopram (Celexa®) | -6.6% |
| Desvenlafaxine (Pristiq®) | -8.4% |
| Paroxetine (Paxil®) | -9.8% |

### Outlook 2015

Treatment guidelines continue to assess data behind antidepressants for the treatment of pain, but no significant changes to the guidelines have occurred in recent years. We will continue to monitor for developments and changes in this arena. Additionally, because of the ongoing push to reduce opioid utilization for long-term chronic pain, monitoring the use of antidepressants in the overall management of the injured worker's therapy regimen remains a priority.

In terms of spend, with nearly all top antidepressants available as generic formulations, it is likely that the overall spend of this therapeutic class compared to others will drop in the coming year, despite overall utilization remaining relatively constant.

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

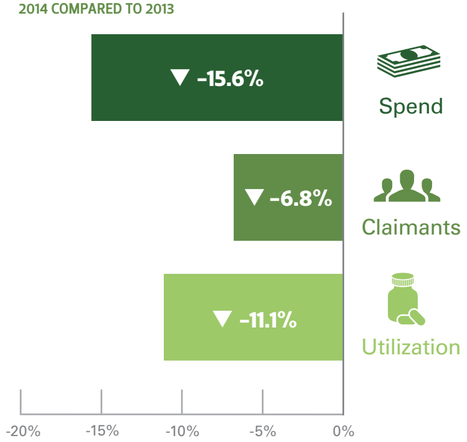
## DERMATOLOGICALS

The dermatological therapeutic class includes medications that are applied externally to the skin for the treatment of infection, inflammation, and pain relief. The most common use of these medications in workers' compensation is for the treatment of pain with topical NSAIDs and Lidoderm® patches. However, this class does not include compounded medications as a whole, only commercially available products.

According to treatment guidelines, most ingredients in commercially available products, such as topical lidocaine, menthol, and certain NSAIDs, are "not recommended" as first-line therapy.

*Figure 29*

**COST AND UTILIZATION TREND FOR DERMATOLOGICALS**
**2014 COMPARED TO 2013**

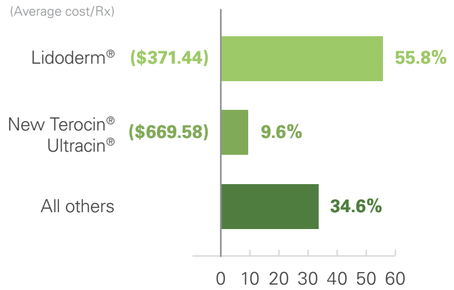



### Spend

Within dermatologicals, there was a slight shift in utilization of some products, such as New Terocin® and Capzasin®. Even with the increase in the use of these more expensive medications, spend for dermatologicals dropped 15.6%, driven by the availability of generic Lidoderm® patch which launched in September 2013. As seen below, directly promoted medications made up a larger share of the dermatological spend due to their extremely high cost.

*Figure 30*

**PERCENTAGE SPEND FOR DIRECTLY PROMOTED DERMATOLOGICALS**




### Utilization

The largest decrease in utilization was seen with diclofenac patches (Flector®). Their use in the treatment of acute sprains and strains is classified in the anti-inflammatories therapeutic class. Diclofenac patches (Flector®) had a 12.3% decrease in the number of injured workers receiving them. This change in prescribing appears to be the result of treatment guidelines not including them as first-line therapy. Lidoderm® patches (lidocaine) also had a 12.3% decrease in utilization, which appears to be driven by a switch towards multi-ingredient medications, either commercially available or compounded.

*Figure 31*

**UTILIZATION OF MULTI-INGREDIENT MEDICATIONS**

| Medication | Change in Utilization | Change in Days' Supply |
|---|---|---|
| Capsaicin-menthol-methylsalicylate (New Terocin®, Ultracin®,) | 5.6% | 143.6% |
| Capsaicin-menthol (Capzacin®) | 52.2% | 266.1% |
| Lidocaine-menthol (Lenzagel®, Terocin®) | 436.5% | 1,260.8% |

### Outlook 2015

We anticipate that new dermatological medications and ingredient combinations will enter the market in 2015 and beyond. The move toward state-based formularies relying on treatment guidelines may assist in reducing or eliminating this trend.

## SKELETAL MUSCLE RELAXANTS

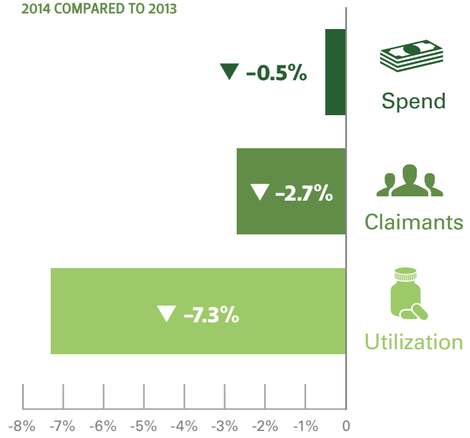
Medications in this therapeutic class are typically used for the treatment of muscle spasms, muscle stiffness, and/or pain that frequently accompanies industrial injuries such as sprains and strains. Although these medications may provide some relief, evidence has yet to show prolonged efficacy with their chronic use.

Treatment guidelines recommend the use of skeletal muscle relaxants during the acute phase of an injury and for the shortest time possible. Some medications are "not recommended" for first-line therapy due to side effects; for example, orphenadrine and carisoprodol are not first-line therapies because of their potential for abuse and addiction. Accordingly, utilization of these medications should be assessed regularly to determine continued efficacy and need.

*Figure 32*

**COST AND UTILIZATION TREND FOR SKELETAL MUSCLE RELAXANTS**

**2014 COMPARED TO 2013**




### Spend

There was only a very slight decrease in the overall spend associated with skeletal muscle relaxants, despite lower utilization. This is the result of significant generic AWP inflation.

### Utilization

Carisoprodol, which is "not recommended" in many nationally recognized workers' compensation treatment guidelines, dropped 21.6%, influencing the overall utilization and spend for the class. Otherwise, the utilization of medications in this class was relatively stable.

*The decreased utilization of carisoprodol is a favorable trend that we will continue to positively influence through our work with clients using multiple intervention pathways.*

### Outlook 2015

There has been little movement in the availability of new skeletal muscle relaxants. Moreover, with the move of many states to institute their own formularies, the decreased utilization of these medications may continue.

## BULK MEDICATIONS AND CHEMICALS

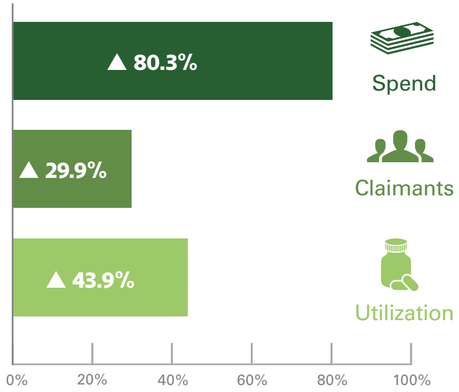
Medications in this therapeutic class generally include the ingredients used in the preparation of custom topical formulations of both single and multi-ingredient compounded medications. While a handful of states have specific compound reimbursement guidelines, not as many address their use in legislation or regulation. In treatment guidelines, compounded medications are "not recommended" as first-line therapy. Commercially available, FDA-approved medications should be given an adequate trial first.

Although some ingredients fall under other therapeutic classes, the presence of this therapeutic class in the top ten is significant.

*Figure 33*

**COST AND UTILIZATION TREND FOR BULK MEDICATIONS AND CHEMICALS**

**2014 COMPARED TO 2013**




### Spend

Within the Bulk Medications and Chemicals therapeutic class as well as others, there were some unprecedented changes in spending associated with the major ingredients used in compounded medications in workers' compensation.

The most significant changes were in products that have no specific therapeutic advantage when prepared in a topical compound formulation over other commercially available medications within the same therapeutic class. For example, gabapentin taken orally as a capsule or tablet, both commercially available, may offer better benefit than using it topically. The Bulk Medications and Chemicals class also had its share of AWP increases in 2014. Increases ranged from 4% to 118% per gram of product (most bulk medications and chemicals are sold by the gram or kilogram and thus their pricing is calculated on the lowest unit of use).

### Utilization

Similar to spend, utilization of medications in the Bulk Medications and Chemicals class increased with two exceptions; ketoprofen and cyclobenzaprine decreased 21% and 28%, respectively. Alternatively, the significant increases in fluticasone (up 859%) and meloxicam (up 481%) is concerning. Shown below are the ten most frequently used ingredients and the associated change in utilization.

*Figure 34*

**TOP 10 INGREDIENTS USED IN COMPOUNDED MEDICATIONS**

| Ingredient | Therapeutic Class | Change in Spend | Change in Utilization |
|---|---|---|---|
| Ketamine | Anesthetic | 42.8% | 38% |
| Gabapentin | Anticonvulsant | 46.4% | 20% |
| Flurbiprofen | NSAID | 110.9% | 74% |
| Fluticasone | Steroid | 1,038.5% | 859% |
| Ketoprofen | NSAID | -32.1% | -21% |
| Diclofenac | NSAID | 186.9% | 229% |
| Baclofen | Muscle Relaxant | 92.7% | 51% |
| Meloxicam | NSAID | 1,304.4% | 481% |
| Cyclobenzaprine | Muscle Relaxant | -28.3% | -28% |
| Tramadol | Analgesic | 136.6% | 17% |

### Outlook 2015

We anticipate utilization of multi-ingredient compounded medications will continue to expand throughout 2015. Further clinical study is warranted to greater substantiate the medical benefits of the topical application of the various combinations of ingredients that are being prescribed today. Questions remain as to both the risk-benefit and cost-benefit of using multi-ingredient compounded medications over traditional oral therapies.

Another emerging trend involving this class and the Dermatologicals class is the appearance of "compounding kits" being marketed directly to physicians. These kits provide prescribing physicians with pre-weighed active and inactive ingredients used for compounding medications into topical or other dosage formulations. The indications for compound kits may vary depending on the ingredients contained in the kit, but may include topical analgesia and muscle relaxant therapy. An example of a compounding kit includes Ketoprofen-Lidocaine HCl Cream 10-2% (Vopac®). With an AWP per kit of $600 to $2,500, there is potentially a significant financial impact to payers as manufacturers market these specialty compounds.

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

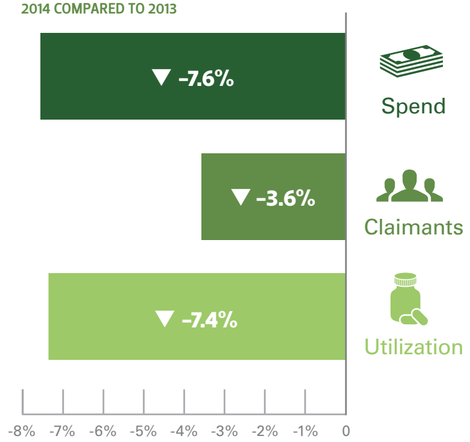
## ULCER MEDICATIONS

Treatment guidelines suggest that at-risk injured workers utilizing NSAIDs might benefit from a prophylactic agent to reduce the chances of developing gastrointestinal-related adverse effects (i.e., reflux, nausea, abdominal pain, gastritis, ulcers, ulcer perforation, and gastrointestinal bleeding).

The proton pump inhibitor (PPI) is the most commonly used ulcer medication in workers' compensation. However, not all are FDA-indicated for the prophylactic treatment of NSAID-induced gastrointestinal events. Esomeprazole (Nexium®) and lansoprazole (Prevacid®) share this indication.

*Figure 35*

**COST AND UTILIZATION TREND FOR ULCER MEDICATIONS**
**2014 COMPARED TO 2013**




### Spend

The 7.6% decrease in total spend was a function primarily of decreased utilization, and is seemingly associated with the overall decrease in anti-inflammatory utilization.

### Utilization

The 7.4% decrease in utilization of ulcer medications is also likely associated with the overall decrease in NSAID utilization.

### Outlook 2015

The generic availability of Nexium® in 2015 offers potential cost savings for payers in this therapeutic class.

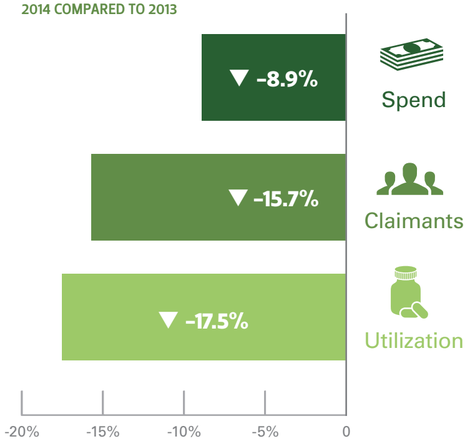
## HYPNOTICS

Injured workers experiencing chronic pain may have difficulty sleeping. Sedative-hypnotic agents may therefore be prescribed on an as-needed basis to facilitate sleep.

The long-term use of hypnotics has been associated with the development of tolerance to the sleep-inducing effects, dependence, and subsequent misuse. As such, sedatives are recommended for short-term use only, generally three weeks maximum in the first two months from the initiation of therapy. Long-term use is not recommended, especially when there is concurrent therapy with opioid analgesics. Guidelines also suggest the concurrent use of non-pharmacologic therapies, such as sleep hygiene, for optimal efficacy.

*Figure 36*

**COST AND UTILIZATION TREND FOR HYPNOTICS**
**2014 COMPARED TO 2013**




### Spend

More than 91% of spend associated with hypnotics is driven by two medications, zolpidem (Ambien®) and eszopiclone (Lunesta®). Although the generic formulation of eszopiclone is available, the brand name formulation had a 36% increase in the AWP in 2014.

A high number of prescribers continue to write prescriptions for the brand name formulation. As a result, there was an overall 23.3% increase in the cost of an eszopiclone prescription. Despite this, overall spend decreased 8.9%

### Utilization

Similar to spend, zolpidem (Ambien®) and eszopiclone (Lunesta®) account for 83.5% of days' supply. The therapeutic class as a whole had a decrease in utilization of 17.5%, without significant decreases in the two most commonly prescribed medications.

### Outlook 2015

There has been little movement in the availability of new sedatives and the utilization data does not suggest any changes of the current medications in their place of therapy. Furthermore, the only significant product still available without a generic equivalent is ramelteon (Rozerem®), which only accounts for 1.6% of all sedatives days' supply. The generic formulation of this product is not expected until 2019 at the earliest.

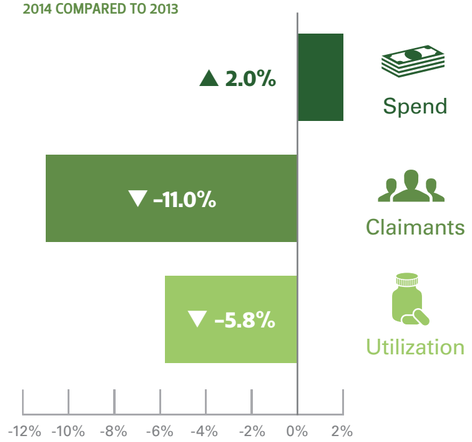
## ANTIPSYCHOTICS

Antipsychotics are used most commonly in the management of psychiatric conditions, such as schizophrenia and bipolar disorder. However, they may also help manage depression with or without psychotic symptoms, which can be present following industrial injuries. Small clinical studies have shown some efficacy of these medications, particularly the atypical antipsychotics, in the management of anxiety and insomnia, but those have been mostly in the context of other psychiatric issues and not within the treatment of chronic pain. Atypical antipsychotics are preferred over typical antipsychotics due to a more favorable side effect profile. Antipsychotics are generally not recommended for the initial treatment of the injured worker, as there is little to no evidence justifying their first-line use in the treatment of depression due to an industrial injury.

*Figure 37*

**COST AND UTILIZATION TREND FOR ANTIPSYCHOTICS**

**2014 COMPARED TO 2013**




### Spend

Antipsychotics accounted for 2.3% of total drug spend in 2014, but only 0.7% of the total transactions. This disparity is driven by the high cost of these medications, which elevates their per prescription cost to $533. This cost is heavily influenced by Abilify® (aripiprazole), which is currently only available as a brand name medication. Accounting for 50% of spend in antipsychotics and at an average cost of $1,017 per prescription, Abilify® is the lead medication in this therapeutic class.

***Abilify® had an 18% increase in AWP in 2014.***

### Utilization

Utilization of antipsychotics decreased by 5.8%, mitigating a portion of the increase in spend for the class. We consider the reduced utilization favorable, indicative of less off-label use and a preference to other medications for the treatment of depression associated with the workplace injury.

### Outlook 2015

We expect to see the generic formulation of Abilify® (aripiprazole) sometime in 2015. Depending on the number of manufacturers entering the market, we may see some cost relief for this medication toward the end of the coming year. The move toward state-based formularies relying on the ODG may continue to decrease the use of "not recommended" medications, such as Abilify® and other antipsychotics.

# TOP MEDICATIONS AND THERAPEUTIC CLASSES

## The Top 25 Medications

**As a percentage of total spend**, the top 25 medications represent 58% of all managed medications. There was little change in the list when compared to last year. There was, however, significant individual medication movement in the ranks. Figure 38 shows all but three of the top 25 experienced movement of some degree. The only three medications remaining the same were OxyContin®, Duragesic® patch, and Mobic®.

Medications that moved dramatically this year include Percocet®, moving up four spots from seven to three, and MS Contin®, up from the 24th spot to 17. Another opioid analgesic, Roxicodone® moved up to spot nine from the 16th position. Each of these changes were largely driven by AWP versus utilization.

Generic Lidoderm®, lidocaine patch, released into the market, which influenced this medication's overall ranking as a percentage of spend. Unfortunately there is not much difference in the AWP for the brand and generic options for this medication. In 2014, the AWP per patch of the brand name was $9.46 and the generic was $9.36. This is much smaller than the average 5 to 10% difference typically seen with the initial release of a generic medication.

Gabapentin powder debuted in the top 25 at the 20th position. Meanwhile, ketamine powder landed at 13 up from 19 last year. Both of these medications are commonly used in compounded medications. These movements are more than noteworthy. Traditionally considered second or third line therapy due to lack of efficacy studies and numerous safety concerns, compounded medications have emerged in the last 12 months as a significant cost driver in workers' compensation claims.

*Figure 38*

### TOP 25 MEDICATIONS RANKED BY TOTAL SPEND

| Brand Name | Percent of Total Spend | 2014 Rank | 2013 Rank |
|---|---|---|---|
| OXYCONTIN® Tablet | 6.8% | 1 | 1 |
| LYRICA® Capsule | 5.7% | 2 | 4 |
| PERCOCET® Tablet | 5.0% | 3 | 7 |
| CELEBREX® Capsule | 4.4% | 4 | 5 |
| CYMBALTA® Capsule | 4.4% | 5 | 3 |
| LIDODERM® Patch | 4.0% | 6 | 2 |
| VICODIN®, NORCO® Tablet | 3.7% | 7 | 6 |
| DURAGESIC® Patch | 2.4% | 8 | 8 |
| ROXICODONE® Tablet | 2.0% | 9 | 16 |
| NEURONTIN® Tablet | 1.9% | 10 | 9 |
| NEURONTIN® Capsule | 1.7% | 11 | 10 |
| MOBIC® Tablet | 1.4% | 12 | 12 |
| KETAMINE Powder* | 1.4% | 13 | 19 |
| OPANA® ER Tablet | 1.3% | 14 | 11 |
| ULTRAM® Tablet | 1.3% | 15 | 14 |
| SKELAXIN® Tablet | 1.2% | 16 | 13 |
| MS CONTIN® Tablet | 1.2% | 17 | 24 |
| FLECTOR® Patch | 1.2% | 18 | 15 |
| ABILIFY® Tablet | 1.2% | 19 | 18 |
| GABAPENTIN Powder* | 1.1% | 20 | 32 |
| FLEXERIL® Tablet | 1.0% | 21 | 17 |
| NEXIUM® Capsule | 1.0% | 22 | 21 |
| LUNESTA® Tablet | 0.9% | 23 | 25 |
| TOPAMAX® Tablet | 0.9% | 24 | 23 |
| AMBIEN® Tablet | 0.9% | 25 | 20 |

*Ingredient used in topical compounded medications
Expanded data set available in the Appendix

Representing 63% of all managed medications, a review of the **Top 25 Medications, as a percentage of total prescriptions**, showed little change in the medications appearing on the list. Moreover, while there was modest movement in their respective rankings compared to 2013, only Prilosec® (omeprazole) and Xanax® (alprazolam) moved more than two positions.

Hydrocodone-acetaminophen (Vicodin®, Norco®) remained the number one dispensed medication despite being rescheduled to a Schedule II substance toward the end of 2014. The use of this medication among prescribers is not limited to workers' compensation. This medication is also commonly prescribed to treat pain associated with non-workers' compensation-related conditions.

We are watching the downward movement of the benzodiazepine, Xanax® (alprazolam), from 20 to 25. Since injured workers' medication treatment regimens quite often contain several central nervous system depressants, a reduction in the use of benzodiazepines could lead to improvements in outcomes.

*Figure 39*

### TOP 25 MEDICATIONS RANKED BY NUMBER OF PRESCRIPTIONS

| Brand Name | Percent of Total Rx | 2014 Rank | 2013 Rank |
|---|---|---|---|
| VICODIN®, NORCO® Tablet | 13.7% | 1 | 1 |
| PERCOCET® Tablet | 4.5% | 2 | 2 |
| ULTRAM® Tablet | 4.3% | 3 | 3 |
| FLEXERIL® Tablet | 4.0% | 4 | 4 |
| MOTRIN®, ADVIL® Tablet | 3.7% | 5 | 5 |
| NEURONTIN® Capsule | 2.9% | 6 | 6 |
| LYRICA® Capsule | 2.6% | 7 | 7 |
| ROXICODONE® Tablet | 2.5% | 8 | 10 |
| CYMBALTA® Capsule | 2.3% | 9 | 8 |
| CELEBREX® Capsule | 2.3% | 10 | 9 |
| MOBIC® Tablet | 2.2% | 11 | 11 |
| NAPROSYN® Tablet | 1.9% | 12 | 14 |
| OXYCONTIN® Tablet | 1.9% | 13 | 12 |
| LIDODERM® Patch | 1.6% | 14 | 13 |
| ZANAFLEX® Tablet | 1.6% | 15 | 16 |
| NEURONTIN® Tablet | 1.4% | 16 | 18 |
| SOMA® Tablet | 1.4% | 17 | 15 |
| AMBIEN® Tablet | 1.3% | 18 | 17 |
| VALIUM® Tablet | 1.1% | 19 | 19 |
| ROBAXIN® Tablet | 1.0% | 20 | 22 |
| PRILOSEC® Capsule | 1.0% | 21 | 24 |
| Amitriptyline Tablet† | 1.0% | 22 | 21 |
| MS CONTIN® Tablet | 0.9% | 23 | 25 |
| DURAGESIC® Patch | 0.9% | 24 | 23 |
| XANAX® Tablet | 0.9% | 25 | 20 |

†Brand name medication unavailable.
Expanded data set available in the Appendix

# LOOKING AHEAD

# LOOKING AHEAD

As demonstrated by this report, our brighter solutions led to better outcomes. Working diligently, we captured as many prescriptions into our pharmacy network as possible so we could deliver more savings, greater efficiencies, and keener insight to our clients. Our global utilization management program synchronized data and statistics with clinical expertise throughout the care continuum. This yielded better decisions earlier in the claim so that injured workers could receive the safest, most efficacious, and cost effective care. Our tireless advocacy in government affairs facilitated artful compromise, and helped guide the way to positive regulatory and legislative change. As a result, we largely mitigated the impact of AWP and continued a multi-year trend of reductions in the utilization of opioid analgesics.

Looking ahead to 2015, we are hopeful that the upward climb of AWP inflation will cease; as this document goes to press, we are already starting to see AWP inflation that is more moderate for several of the medications highlighted in this report. We anticipate utilization of opioid analgesics and MED will continue to decline in response to the industry's multi-prong effort to thwart misuse and abuse. Closed formularies, treatment guidelines, PDMPs, urine drug testing and monitoring, personalized medicine, and multi-disciplinary care are all strategies that will remain in use. We will be closely monitoring the impact of rescheduling HCPs on cost and utilization. Regarding compounded medications and physician dispensing, we believe both will continue to challenge the industry as stakeholders contemplate their cost, safety, benefit, and risk in the treatment of pain. Meanwhile, debating the merit of legalizing medical marijuana will persist.

As for Helios, our passion for this business is as strong as ever. We continue to collaborate with our clients while innovating our programs to ease adminstrative burden and optimize therapy for the injured worker. Additionally, as consideration is given towards regulatory and legislative change, we are encouraging policymakers and stakeholders throughout the system to be mindful of the valuable role of a pharmacy benefit manager in managing medication cost and utilization. Helios has long-advocated for solutions that ensure injured workers receive the right medication at the right time. Our solutions are intentionally built to accomplish this because we know that by doing so, we achieve a better outcome, for everyone.

# APPENDIX

# APPENDIX

*Figure 1A*

## TOP 25 MEDICATIONS RANKED AS A PERCENTAGE OF TOTAL SPEND, INCLUDING AWP CHANGES

| 2014 Rank | 2013 Rank | Total Spend | Common Brand Name | Generic Name | Therapeutic Class | Brand and Generic AWP | Brand Only AWP |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 6.8% | OXYCONTIN® Tablet | oxycodone ER | Opioid Analgesics | 3.7% | 3.7% |
| 2 | 4 | 5.7% | LYRICA® Capsule | pregabalin | Anticonvulsants | 20.5% | 20.5% |
| 3 | 7 | 5% | PERCOCET® Tablet | oxycodone-acetaminophen | Opioid Analgesics | 74.2% | 26.6% |
| 4 | 5 | 4.4% | CELEBREX® Capsule | celecoxib | Anti-inflammatories | 20.7% | 20.7% |
| 5 | 3 | 4.4% | CYMBALTA® Capsule | duloxetine | Antidepressants | 0.9% | 3.6% |
| 6 | 2 | 4% | LIDODERM® Patch | lidocaine | Dermatologicals | 2.7% | 1.6% |
| 7 | 6 | 3.7% | VICODIN®, NORCO® Tablet | hydrocodone-acetaminophen | Opioid Analgesics | 14.2% | 45% |
| 8 | 8 | 2.4% | DURAGESIC® Patch | fentanyl | Opioid Analgesics | 2.8% | 2.3% |
| 9 | 16 | 2% | ROXICODONE® Tablet | oxycodone | Opioid Analgesics | 73.6% | 133.2% |
| 10 | 9 | 1.9% | NEURONTIN® Tablet | gabapentin | Anticonvulsants | 0.3% | 13.1% |
| 11 | 10 | 1.7% | NEURONTIN® Capsule | gabapentin | Anticonvulsants | 3.8% | 28% |
| 12 | 12 | 1.4% | MOBIC® Tablet | meloxicam | Anti-inflammatories | 0.3% | 10.1% |
| 13 | 19 | 1.4% | KETAMINE Powder* | ketamine | Anesthetics | 5.9% | 5.8% |
| 14 | 11 | 1.3% | OPANA® ER Tablet | oxymorphone ER | Opioid Analgesics | 3.1% | 3.1% |
| 15 | 14 | 1.3% | ULTRAM® Tablet | tramadol | Opioid Analgesics | 0.3% | 14.4% |
| 16 | 13 | 1.2% | SKELAXIN® Tablet | metaxalone | Muscle Relaxants | 4.2% | 3.6% |
| 17 | 24 | 1.2% | MS CONTIN® Tablet | morphine sulfate ER | Opioid Analgesics | 50.5% | 13% |
| 18 | 15 | 1.2% | FLECTOR® Patch | diclofenac | Dermatologicals | 6.9% | 6.9% |
| 19 | 18 | 1.2% | ABILIFY® Tablet | aripiprazole | Antipsychotics | 18.3% | 18.3% |
| 20 | 32 | 1.1% | GABAPENTIN Powder* | gabapentin | Anticonvulsants | 14.4% | 14.1% |
| 21 | 17 | 1% | FLEXERIL® Tablet | cyclobenzaprine | Muscle Relaxants | 3.4% | 1.8% |
| 22 | 21 | 1% | NEXIUM® Capsule | esomeprazole | Ulcer Medications | 15.4% | 15.4% |
| 23 | 25 | 0.9% | LUNESTA® Tablet | eszopiclone | Sedative-hypnotics | 34.4% | 36.2% |
| 24 | 23 | 0.9% | TOPAMAX® Tablet | topiramate | Anticonvulsants | 1.7% | 9.1% |
| 25 | 20 | 0.9% | AMBIEN® Tablet | zolpidem | Sedative-hypnotics | 2.7% | 31.5% |

* Ingredient used in topical compounded medications
Red indicates a reduction

*Figure 2A*

## TOP 25 MEDICATIONS RANKED AS A PERCENTAGE OF TOTAL NUMBER OF PRESCRIPTIONS, INCLUDING AWP CHANGES

| 2014 Rank | 2013 Rank | Total Rx | Common Brand Name | Generic Name | Therapeutic Class | Brand and Generic AWP | Brand Only AWP |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 13.7% | VICODIN®, NORCO® Tablet | hydrocodone-acetaminophen | Opioid Analgesics | 14.2% | 45% |
| 2 | 2 | 4.5% | PERCOCET® Tablet | oxycodone-acetaminophen | Opioid Analgesics | 74.2% | 26.6% |
| 3 | 3 | 4.3% | ULTRAM® Tablet | tramadol | Opioid Analgesics | 0.3% | 14.4% |
| 4 | 4 | 4% | FLEXERIL® Tablet | cyclobenzaprine | Muscle Relaxants | 3.4% | 1.8% |
| 5 | 5 | 3.7% | MOTRIN®, ADVIL® Tablet | ibuprofen | Anti-inflammatories | 79.3% | 11.6% |
| 6 | 6 | 2.9% | NEURONTIN® Capsule | gabapentin | Anticonvulsants | 3.8% | 28% |
| 7 | 7 | 2.6% | LYRICA® Capsule | pregabalin | Anticonvulsants | 20.5% | 20.5% |
| 8 | 10 | 2.5% | ROXICODONE® Tablet | oxycodone | Opioid Analgesics | 73.6% | 133.2% |
| 9 | 8 | 2.3% | CYMBALTA ® Capsule | duloxetine | Antidepressants | 0.9% | 3.6% |
| 10 | 9 | 2.3% | CELEBREX® Capsule | celecoxib | Anti-inflammatories | 20.7% | 20.7% |
| 11 | 11 | 2.2% | MOBIC® Tablet | meloxicam | Anti-inflammatories | 0.3% | 10.1% |
| 12 | 14 | 1.9% | NAPROSYN® Tablet | naproxen | Anti-inflammatories | 0.1% | 9.3% |
| 13 | 12 | 1.9% | OXYCONTIN® Tablet | oxycodone ER | Opioid Analgesics | 3.7% | 3.7% |
| 14 | 13 | 1.6% | LIDODERM® Patch | lidocaine | Dermatologicals | 2.7% | 1.6% |
| 15 | 16 | 1.6% | ZANAFLEX® Tablet | tizanidine | Muscle Relaxants | 4.8% | 3.3% |
| 16 | 18 | 1.4% | NEURONTIN® Tablet | gabapentin | Anticonvulsants | 0.3% | 13.1% |
| 17 | 15 | 1.4% | SOMA® Tablet | carisoprodol | Muscle Relaxants | 2.5% | 5.2% |
| 18 | 17 | 1.3% | AMBIEN® Tablet | zolpidem | Sedative-hypnotics | 2.7% | 31.5% |
| 19 | 19 | 1.1% | VALIUM® Tablet | diazepam | Anxiolytics | 6.3% | 8.7% |
| 20 | 22 | 1% | ROBAXIN® Tablet | methocarbamol | Muscle Relaxants | 20.3% | 4.2% |
| 21 | 24 | 1% | PRILOSEC® Capsule | omeprazole | Ulcer Medications | 1.2% | 9.1% |
| 22 | 21 | 1% | Amitriptyline Tablet† | amitriptyline | Antidepressants | 19.7% | 27.7% |
| 23 | 25 | 0.9% | MS CONTIN® Tablet | morphine sulfate ER | Opioid Analgesics | 50.5% | 13% |
| 24 | 23 | 0.9% | DURAGESIC® Patch | fentanyl | Opioid Analgesics | 2.8% | 2.3% |
| 25 | 20 | 0.9% | XANAX® Tablet | alprazolam | Anxiolytics | 2.1% | 13.5% |

† No common brand medication is available
Red indicates a reduction

# APPENDIX

*Figure 3A*

## TOP 25 MEDICATIONS RANKED BY DAILY SPEND

| 2014 Rank | Common Brand Name | Generic Name | Therapeutic Class | 2014 Daily Spend |
|---|---|---|---|---|
| 1 | FENTORA® Tablet | fentanyl buccal | Opioid Analgesics | $ 283.75 |
| 2 | FLURBIPROFEN Powder* | flurbiprofen | Anti-inflammatories | $ 92.05 |
| 3 | KETAMINE Powder* | ketamine | Anesthetics | $ 77.21 |
| 4 | GABAPENTIN Powder* | gabapentin | Anticonvulsants | $ 76.95 |
| 5 | PERCOCET® Tablet | oxycodone-acetaminophen | Opioid Analgesics | $ 42.59 |
| 6 | EXALGO® Tablet | hydromorphone ER | Opioid Analgesics | $ 40.03 |
| 7 | DURAGESIC® Patch | fentanyl | Opioid Analgesics | $ 37.40 |
| 8 | ABILIFY® Tablet | aripiprazole | Antipsychotics | $ 33.39 |
| 9 | AMRIX® Capsule | cyclobenzaprine ER | Muscle Relaxants | $ 29.77 |
| 10 | DUEXIS® Tablet | ibuprofen-famotidine | Anti-inflammatories/ Antiulcer Medications | $ 28.18 |
| 11 | OPANA® ER Tablet | oxymorphone ER | Opioid Analgesics | $ 24.17 |
| 12 | OXYCONTIN® Tablet | oxycodone ER | Opioid Analgesics | $ 22.65 |
| 13 | LIDODERM® Patch | lidocaine | Dermatologicals | $ 15.93 |
| 14 | FLECTOR® Patch | diclofenac | Dermatologicals | $ 15.59 |
| 15 | NUCYNTA® ER Tablet | tapentadol ER | Opioid Analgesics | $ 14.35 |
| 16 | SKELAXIN® Tablet | metaxalone | Muscle Relaxants | $ 13.73 |
| 17 | NUCYNTA® Tablet | tapentadol | Opioid Analgesics | $ 12.88 |
| 18 | LUNESTA® Tablet | eszopiclone | Sedative-hypnotics | $ 12.84 |
| 19 | BUTRANS® Patch | buprenorphine ER | Opioid Analgesics | $ 12.81 |
| 20 | LYRICA® Capsule | pregabalin | Anticonvulsants | $ 12.19 |
| 21 | ADVAIR® Diskus | fluticasone-salmeterol | Respiratory Agents | $ 12.18 |
| 22 | CYMBALTA® Capsule | duloxetine | Antidepressants | $ 11.28 |
| 23 | NEXIUM® Capsule | esomeprazole | Ulcer Medications | $ 11.07 |
| 24 | CELEBREX® Capsule | celecoxib | Anti-inflammatories | $ 10.08 |
| 25 | VOLTAREN® Gel | diclofenac | Dermatologicals | $ 4.38 |

* Ingredient used in topical compounded medications

*Figure 4A*

## TOP 25 GENERIC MEDICATIONS RANKED AS A PERCENTAGE OF GENERIC SPEND, INCLUDING GENERIC EFFICIENCY

| 2014 Rank | 2013 Rank | Total Generic Spend | Common Brand Name | Generic Name | Therapeutic Class | Total Generic Rx | Generic Efficiency |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 8.8% | PERCOCET® Tablet | oxycodone-acetaminophen | Opioid Analgesics | 5.5% | 95.5% |
| 2 | 1 | 8% | VICODIN® Tablet | hydrocodone-acetaminophen | Opioid Analgesics | 17.1% | 98% |
| 3 | 8 | 4.3% | ROXICODONE® Tablet | oxycodone | Opioid Analgesics | 3.1% | 98.8% |
| 4 | 3 | 4.2% | NEURONTIN® Tablet | gabapentin | Anticonvulsants | 1.8% | 97.3% |
| 5 | 5 | 3.8% | NEURONTIN® Capsule | gabapentin | Anticonvulsants | 3.6% | 98.4% |
| 6 | * | 3.6% | CYMBALTA® Capsule | duloxetine | Antidepressants | 1.2% | 41.9% |
| 7 | 68 | 3.6% | LIDODERM® Patch | lidocaine | Dermatologicals | 0.9% | 44.7% |
| 8 | 4 | 3.4% | DURAGESIC® Patch | fentanyl | Opioid Analgesics | 0.9% | 83.1% |
| 9 | 6 | 3.3% | MOBIC® Tablet | meloxicam | Anti-inflammatories | 2.7% | 98.8% |
| 10 | 7 | 2.8% | ULTRAM® Tablet | tramadol | Opioid Analgesics | 5.4% | 98.9% |
| 11 | 13 | 2.5% | MS CONTIN® Tablet | morphine sulfate ER | Opioid Analgesics | 1.1% | 96.8% |
| 12 | 9 | 2.3% | FLEXERIL ® Tablet | cyclobenzaprine | Muscle Relaxants | 5.1% | 99.9% |
| 13 | 11 | 1.9% | ZANAFLEX® Tablet | tizanidine | Muscle Relaxants | 2% | 99.2% |
| 14 | 10 | 1.8% | PRILOSEC® Capsule | omeprazole | Ulcer Medications | 1.2% | 98.2% |
| 15 | 15 | 1.7% | TOPAMAX® Tablet | topiramate | Anticonvulsants | 0.6% | 92.9% |
| 16 | 12 | 1.6% | AMBIEN® Tablet | zolpidem | Sedative-hypnotics | 1.6% | 94.5% |
| 17 | 14 | 1.4% | SKELAXIN® Tablet | metaxalone | Muscle Relaxants | 0.5% | 54.7% |
| 18 | 16 | 1.3% | PROVIGIL® Tablet | modafinil | Stimulants | 0.1% | 83.8% |
| 19 | 32 | 1.3% | baclofen Tablet† | baclofen | Muscle Relaxants | 1.1% | 100% |
| 20 | 26 | 1.2% | ADVIL® Tablet | ibuprofen | Anti-inflammatories | 4.6% | 100% |
| 21 | 20 | 1.2% | ZOFRAN® Tablet | ondansetron | Anti-emetics | 0.2% | 98.5% |
| 22 | 18 | 1% | NAPROSYN® Tablet | naproxen | Anti-inflammatories | 2.4% | 99.8% |
| 23 | 17 | 1% | KADIAN® Capsule | morphine sulfate ER | Opioid Analgesics | 0.2% | 72.5% |
| 24 | 23 | 0.9% | SEROQUEL® Tablet | quetiapine | Anti-psychotics | 0.3% | 94.1% |
| 25 | 22 | 0.9% | ULTRAM® ER Tablet | tramadol ER | Opioid Analgesics | 0.5% | 94% |

* Generic medication not available
† No common brand medication is available

*Figure 5A*

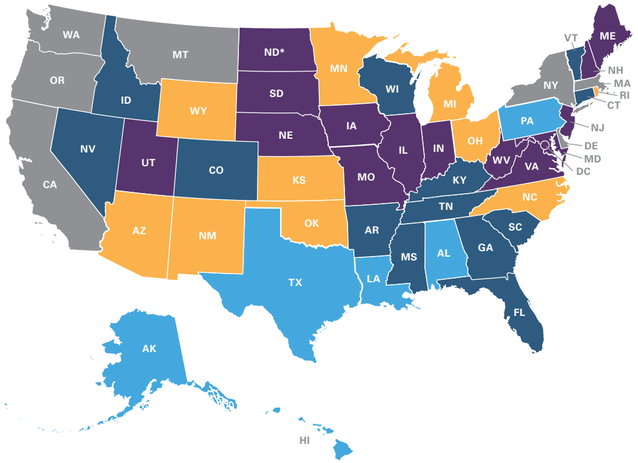
## SPECIALTY MEDICATIONS RANKED BY INDICATED USE

| Specialty Medication | Brand Name | Indicated Use | Average Price per Prescription |
|---|---|---|---|
| Emtricitabine-Tenofovir | Truvada® | Human Immunodeficiency Virus (HIV) | $ 796.53 |
| Lamivudine-Zidovudine | Combivir® | Human Immunodeficiency Virus (HIV) | $ 448.23 |
| Peginterferon alfa-2a | Pegasys® | Hepatitis B/C | $ 3,126.06 |
| Sofosbuvir | Sovaldi® | Hepatitis C | $ 28,937.11 |
| Enoxaparin | Lovenox® | Blood Clot Prevention and Treatment | $ 634.97 |

* Duration of Therapy Varies

*Figure 6A*

## PHARMACY STATE FEE SCHEDULES




**Tier 1**: FS < AWP - 15 for either Brand and/or Generic

**Tier 2**: FS between AWP and AWP - 15

**Tier 3**: FS = AWP

**Tier 4**: FS > AWP

**Tier 5**: No Fee Schedule

**AWP** = Average Wholesale Price

**MAR** = Maximum Allowable Reimbursement

**FS** = Pharmacy Fee Schedule

Note – Tiers set according to MAR indicated by State Fee Schedule (not all states have fee schedule)

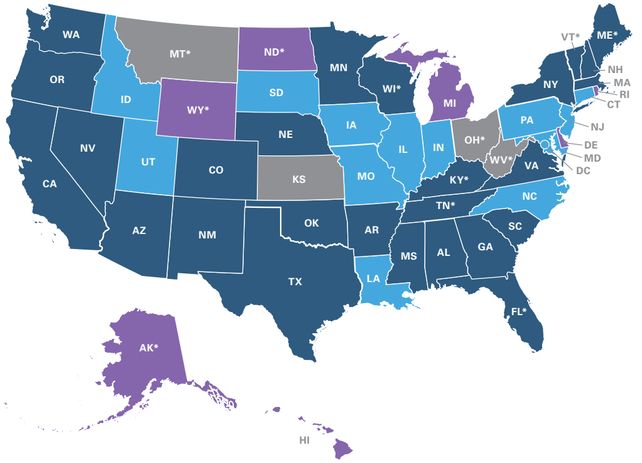
* Uses Fee Schedule not based on AWP

Data – Reflects published State Fee Schedule for pharmacies – Not dispensing practitioners

Current as of Jan 2015

*Figure 7A*

## WORKERS' COMPENSATION JURISDICTIONAL GENERIC MEDICATION MANDATES




Substitution mandated

Substitution mandated except where written statement of medical necessity, prior authorization or other requirement provided/met

Substitution mandated except where prescriber notates DAW, DNS or similar

Substitution not specifically mandated for workers' compensation

**DAW** = Dispense as Written

**DNS** = Do Not Substitute

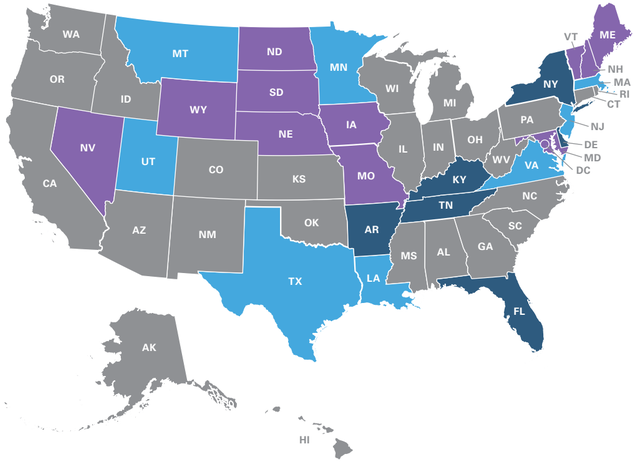
* Indicates injured worker can pay difference between brand and generic when brand dispensed without proper authorization required

Data – Reflects published state statutes/regulations on Generic Dispensing

Current as of Jan 2015

*Figure 8A*

## RESTRICTIONS ON PHYSICIAN DISPENSING/REPACKAGING




Workers' compensation statutes/regulations limit physician dispensing and/or repackaging (Restrictions on dispensing, billing and/or reimbursement)

No clear legal or workers' compensation limits on physician dispensing and/or repackaging

Legal restrictions (Practice Act) in addition to workers' compensation controls

Legal restrictions on physician dispensing (Medical/Pharmacy Practice Act restrictions)

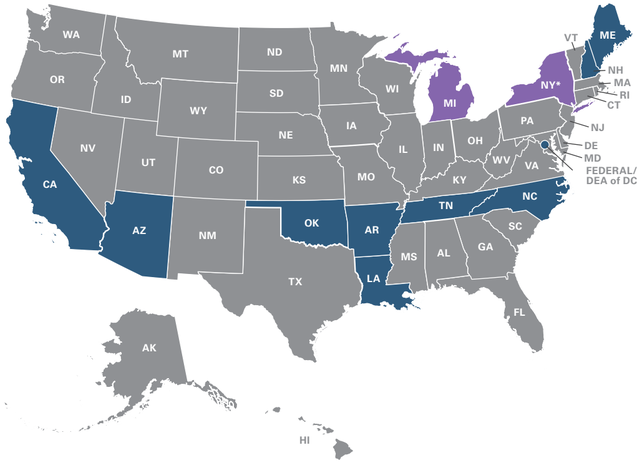
Note – States such as AR, DE, FL, KY, NY and TN have overlapping workers' compensation and state Practice Act controls

Data – Reflects published state statutes/regulations/case law on Physician Dispensing/ Repackaging

Current as of Jan 2015

*Figure 9A*

## WORKERS' COMPENSATION OPIOID UTILIZATION POLICY CHANGES



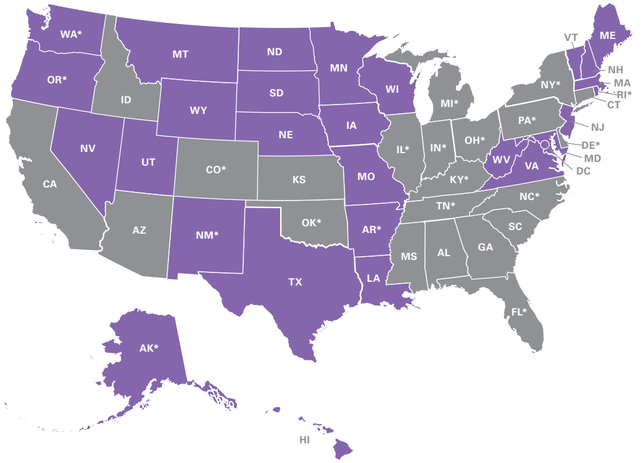

- No Recent/Current Policy Developments
- Recent Adoption/Change of Policies
- Developing/Discussing Policy Changes

Reflects changes in statutes/regulations impacting utilization of opioids for workers' compensation claims – Also reflects published/documented ongoing development of policy changes

Current as of Jan 2015

*Figure 10A*

## USE OF ORIGINAL NDC FOR REPACKAGED DRUGS




- Mandates use of original NDC for billing and/or reimbursement
- No mandate for use of original NDC for billing/reimbursement

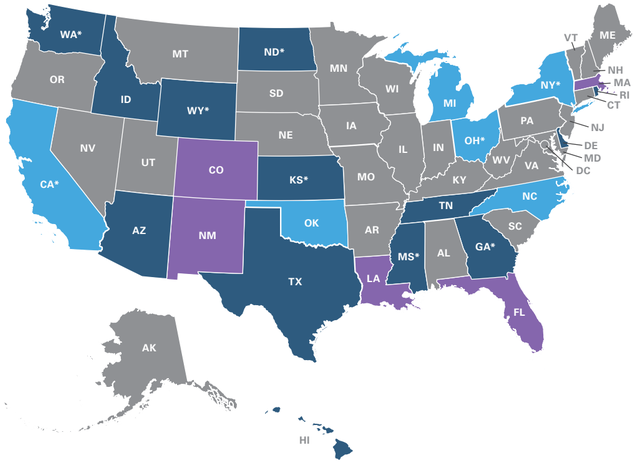
* Additional regulatory/statutory factors and qualifications may apply

Data – Reflects published statutes/ regulations/case law on usage of Underlying NDC for repackaged drugs

Current as of Jan 2015

*Figure 11A*

## WORKERS' COMPENSATION COMPOUNDED MEDICATION PROVISIONS




- Not addressed by specific WC Regulations/Fee Schedules
- Unique state compound reimbursement/billing qualifiers and/or provisions
- Individual ingredient(s) NDC required on compound bills
- Language explicitly permits denial of reimbursement for individual ingredients lacking an NDC

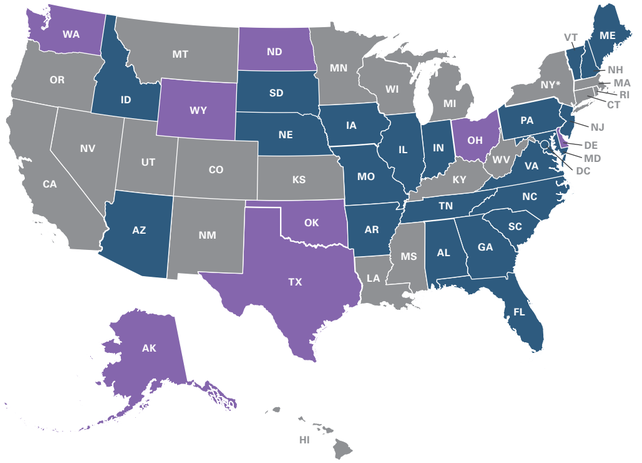
* Additional state regulatory/statutory language regarding billing and reimbursement for compounds (including doctor dispensed compounds)

Data – Reflects published statutes/ regulations/fee schedules related to workers' compensation compounded drug billing/reimbursement

Current as of Jan 2015

*Figure 12A*

## WORKERS' COMPENSATION MEDICATION FORMULARIES & GUIDELINES




- WC Treatment Guidelines
- WC Treatment Guidelines as well as State Specific WC Formulary
- None

Reflects most current published jurisdictional workers' compensation treatment guidelines or formularies (prescription drug utilization specific)

Current as of Jan 2015

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Helios brings the focus of workers' compensation and auto no-fault Pharmacy Benefit Management, Ancillary, and Settlement Solutions back to where it belongs—the injured person. This comes with a passion and intensity on delivering value beyond just the transactional savings for which we excel. To learn how our creative and innovative tools, expertise, and industry leadership can help your business shine, visit www.HeliosComp.com or call 800.777.3574.

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