September 13, 2016

Patterns of Drug Dispensing in California Workers’ Compensation

Gregory L. Johnson, Ph.D.
Director, Medical Analytics
Acknowledgments
The author thanks Tim Basuino, WCIRB Medical Analytics Specialist for valuable assistance with this study. Others from the WCIRB who made helpful comments and contributions include Bill Mudge, Dave Bellusci, Ward Brooks, Tony Milano and Susan Hensley, Alex Swedlow, Stacy Jones and Steve Hayes from the California Workers’ Compensation Institute (CWCI) made several valuable suggestions. The study also benefitted from helpful comments by Dr. Dwight Robertson of Employers Insurance Group, Dr. Dinesh Govindarao of State Compensation Insurance Fund, Dr. Rupa Das and Dr. Jill Rosenthal of Zenith Insurance Company, Jonathan Nutt of AIG and Glen Pitruzzello, formerly of Hartford Insurance. In addition, Dr. Craig Stern, PharmD., President of ProPharma Consultants, made insightful and detailed suggestions throughout the course of the study.

Executive Summary
This study of $500 million in California workers’ compensation pharmaceutical payments made between July 2012 and December 2015 shows that the share of pharmacy payments directly to dispensing physicians dropped by 20% over the 42-month period. Given that the unit amounts paid to physicians remained at consistent levels during this period, the reduction in providers’ share of overall drug payments was driven by a lower number of prescriptions or utilization.

This decline in payments made to dispensing physicians occurred across all major types of drugs and was especially apparent for opiate analgesics, the most prominent type of workers’ compensation drug. For base substances used for compound drugs, the share paid directly to physician dispensers decreased by approximately 50%.

Despite the overall drop in payment shares, physicians received higher per transaction reimbursements for specific drugs, including some opiate analgesics and stomach discomfort medications. In addition, provider physicians generally dispensed the most expensive drugs within these categories, although lower cost therapeutic equivalents were often available in pharmacies.

These results help explain WCIRB findings showing a 28% reduction in drug spending per claim from the second half of 2012 through the second half of 2015. This trend may be attributed to many factors, including the introduction of Independent Medical Review and the greater attention across the country as to the potential overuse of opiates. This study suggests that the reduction in drug payments to physician dispensers may be another underlying factor in the overall decline in drug costs per claim over the last several years.

Background
Despite a decline since 2013, pharmaceutical costs for California workers’ compensation indemnity claims at six months post injury increased by 217% over a ten-year period from 2005 through 2014. For claims lasting ten years or more, drugs account for 37% of all medical costs, contributing to California’s rank as the state with the longest durations for workers’ compensation claims in the nation.

Although many factors have contributed to the long-term escalation of workers’ compensation drug costs, there are concerns in California as well as in other states about the possible impact of physician drug dispensing. This concern stems from a potential incentive for physicians, some of whom have purchased drugs wholesale, to dispense drugs to injured workers and then charge for those drugs on a retail basis.

A 2006 study by the Commission on Health and Safety and Workers’ Compensation revealed that 50% of all drug payments were made to physicians dispensing repackaged drugs resulting in $223 million in additional costs to workers’ compensation payers. This practice involved prescribing repackaged drugs at higher costs than the same

drugs available at pharmacies. Given that a 2002 Appellate Court Case in San Diego upheld physicians' right to dispense drugs, the California Division of Workers’ Compensation addressed this issue in March 2007 through an administrative regulation which equalized payment levels for repackaged physician-dispensed drugs and drugs dispensed by pharmacies. This change appeared to reduce physician dispensing for some drugs while opening the door for dispensing of compounds not covered by the California Medi-Cal-based pharmacy fee schedule applicable to pharmaceuticals in the California system.

On a national level, the National Council on Compensation Insurance (NCCI) showed that physician dispensing doubled from 2008 to 2011, while drug payments to physicians increased by 150% compared to 23% for pharmacies. Over the past several years, thirteen states passed legislation that either restricted physician dispensing or equalized drug reimbursement levels for all dispensing sites. Three states (New York, Texas and Massachusetts) completely ban physician dispensing. Massachusetts experienced a 42% drop in workers’ compensation drug costs after implementing this prohibition.

Despite these legislative efforts, a national workers’ compensation Pharmacy Benefit Manager (PBM) reported physician dispensing generated payments for specific drugs between 198% and 311% higher than pharmacies. Although California’s pharmacy fee schedule is designed to prevent such price disparities, a California Workers’ Compensation Institute (CWCI) study showed that physician dispensing contributed to a 13% increase in overall medical costs and a 17% increase in indemnity costs. An Illinois study showed that physician drug dispensing contributed to 37% higher medical costs and 24% higher indemnity costs. A recent WCRI review of price-based reforms of physician dispensing in eight states indicated that initial savings generated by these controls were eroded when physicians began dispensing new drug versions.

A 2014 report addressing the question of physician dispensing of compounds described how physician dispensing of these substances generates payments significantly higher than the level of the state workers’ compensation pharmacy fee schedule. In California, the number of prescriptions for compounds declined between 2012 and 2013, but the average paid per script increased by 68% to $774.

In August 2016, RAND Institute issued a report on California’s new workers compensation drug formulary to be implemented July 1, 2017. The authors suggested that the administrative rules governing the formulary may limit physician dispensing by curtailing this practice in provider networks and by capping reimbursements for non-preferred physician dispensed drugs. A subsequent CWCI study showed that the formulary’s preferred drugs cover approximately 22% of California workers compensation drug payments.

The multi-year escalation in California workers’ compensation drug costs appears to be reversing. A December 2015 WCIRB study indicated that overall California workers’ compensation drug costs per claim declined by 22% on a

---

4 Fourth Appellate District Court, Park Medical Pharmacy vs. San Diego Orthopedic Associates, Case Number DO38051, San Diego, California, June 11, 2002.
cumulative basis from the second half of 2012 through the first half of 2015.16 Given that prior research pointed to physician dispensing as a factor in the multi-year year escalation of workers’ compensation drug payments, could changes in dispensing patterns contribute to this recent decline? In order to address this question, this study explores the dynamics of both pharmacy and physician drug dispensing in California workers’ compensation. The goal is to describe the frequency, cost impacts, primary drug types, and regional differences to illuminate this issue for system stakeholders.

**Study Approach**
The WCIRB used the following approach in this analysis of physician dispensed pharmacy costs:

1. The WCIRB analyzed drug payments in its Medical Data Call (MDC) database submitted by 45 insurer groups representing 91% of California workers’ compensation premiums. This database includes approximately 4.6 million unique drug transactions, 2.5 million paid bills, and $500 million in drug payments to 4,500 pharmacies and 2,600 physicians between July 1, 2012 and December 31, 2015. Pharmacy Benefit Manager (PBM) data was included if specific information on the recipients of drug payments, whether pharmacies or physicians was provided. A summary of the data included in this study is displayed in Appendix 1.

2. Drug data were analyzed using a six level drug classification hierarchy ranging from the broadest to most specific drug categories. For analytic purposes, the broadest category (Major Workers’ Compensation Drug Groups) combined several distinct medication types into one category. (An example is “Behavioral Health Drugs” which includes anti-depressants, anti-psychotics and sedative-hypnotics). Appendix 2 shows this classification hierarchy using a commonly prescribed opiate analgesic as an example.

3. To identify compounded drugs, each of the 2.5 million paid drug bills was analyzed to determine which bills contained payments for specific drug codes used for compound base substances. These base drug codes appeared on approximately 177,000 bills and any additional paid codes for standard drugs mixed into the base substances were included within compounding payments. Appendix 3 displays a representative example of a compound bill.

4. A WCIRB mapping tool grouped the 58 California counties into six regions, as described in Appendix 4.

5. To classify the provider data, WCIRB used these definitions: Pharmacies include entities paid for drugs with Provider IDs indicating pharmacies, chains, independents or compounding wholesalers and retailers. Physicians include entities paid for drugs with Provider IDs indicating “physicians” as defined by the California workers’ compensation system. Examples of entities included in these classifications are summarized in Appendix 5.

**Research Questions**
This study addresses the following research questions:

1. **Has the share of total drug payments to physicians** changed during the 42-month study period? If so, does this change help explain the overall decline in drug costs per claim since the second half of 2012?

2. For **specific types of drugs**, how have payment patterns differed between physicians and pharmacies? Have these trends changed over the 42-month study period?

3. What are the patterns of **compound drug dispensing** by physicians and pharmacies? Have the payment patterns for compound drugs changed over the 42-month study period?

4. What are the **regional differences** in compound and non-compound drug dispensing between physicians and pharmacies? How do payments for compound drugs compare to each region’s overall medical payments?

5. Are there differences between physicians and pharmacies in dispensing **brand versus generic medications**? Do these differences help explain the overall decline in drug payments per claim?

---

6. Do physicians and pharmacies exhibit different payment patterns for therapeutically equivalent drugs? If so, how do these differences help explain the overall changes in dispensing patterns?

Findings

Drug Payment Trends: July 2012 through December 2015

Chart 1 displays results from a July 2016 WCIRB analysis\(^{17}\) indicating that California workers’ compensation drug costs per claim have declined by 28% from the second half of 2012 through the second half of 2015. These findings confirm the trend described above in a prior WCIRB study\(^{18}\) and reflect a 30% reduction in drug utilization (pharmaceutical transactions per claim) which more than offset a slight 3% rise in paid unit costs (payments per transaction).

<table>
<thead>
<tr>
<th>Service Period</th>
<th>Paid Per Transaction (Ratio to Prior Half)</th>
<th>Paid Transactions Per Claim (Ratio to Prior Half)</th>
<th>Paid Per Claim (Ratio to Prior Half)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^{st}) Half 2013</td>
<td>+5%</td>
<td>-6%</td>
<td>-2%</td>
</tr>
<tr>
<td>2(^{nd}) Half 2013</td>
<td>+1%</td>
<td>+4%</td>
<td>+4%</td>
</tr>
<tr>
<td>1(^{st}) Half 2014</td>
<td>+5%</td>
<td>-8%</td>
<td>-3%</td>
</tr>
<tr>
<td>2(^{nd}) Half 2014</td>
<td>-2%</td>
<td>-12%</td>
<td>-14%</td>
</tr>
<tr>
<td>1(^{st}) Half 2015</td>
<td>-1%</td>
<td>-5%</td>
<td>-6%</td>
</tr>
<tr>
<td>2(^{nd}) Half 2015</td>
<td>-4%</td>
<td>-8%</td>
<td>-11%</td>
</tr>
<tr>
<td>Cumulative Change: 2(^{nd}) Half 2012 through 2(^{nd}) Half 2015</td>
<td>+3%</td>
<td>-30%</td>
<td>-28%</td>
</tr>
</tbody>
</table>

\(^{17}\) Workers’ Compensation Insurance Rating Bureau of California, “Update on Medical Severity Trends by Component,” WCIRB Actuarial Committee Meeting Agenda, Oakland, California, June 17, 2016.

Payment Trends for Major Drug Types
The overall reduction in drug costs per claim has been driven by different prescribing patterns over the 42-month study period. Chart 2 displays payment shares for all major types of drugs dispensed by both physicians and pharmacies. Opiate analgesics, stomach discomfort drugs and dermatological applications have declined in total payment shares while non-opiate analgesics and behavioral health medications have increased. The decline in opiate analgesics is consistent with a multi-year trend shown in a May 2016 CWCI study.\(^{19}\)

Chart 2 shows that the decline in opiate analgesics accelerated in the second half of 2014. Starting in this period, the total share of spending for opiate analgesics dropped by 3% while the combined shares of non-opiate analgesics and behavioral health drugs increased by a corresponding amount. Since some of these drugs are non-addictive alternatives for pain treatment, this trend may reflect substitutions for opiate analgesics.

---

Patterns of Drug Payments to Physicians and Pharmacies
Chart 3 shows the overall share of payments for all drugs, comparing pharmacies and physicians. During the second half of 2012, payment shares for both sites were roughly equivalent. By the second half of 2015, the drug payment share for pharmacies rose to 67% while the share for physicians dropped to 33%. Since the average unit paid per transaction has remained stable at both sites, the difference primarily reflects a reduction in the volume of drug payments to physicians, an interpretation consistent with the utilization declines shown above in Chart 1.

Chart 3: Patterns of Drug Payments to Physicians and Pharmacies – All Drugs
Second Half 2012 through Second Half 2015
Differences in Payment Patterns for Major Drug Groups
Payment shares to physicians declined for all major drug groups during the study period, as shown in Charts 4 through 10. For opiate analgesics, Chart 4 shows that payment shares to physicians dropped from 46% to 21% during the 42-month period while pharmacies showed a corresponding increase. This change in the pattern of recipients for drug payments contributed to the overall decline in the total share of pharmaceutical costs arising from opiate analgesics. Paid amounts per transaction for both physician and pharmacy dispensed opiate analgesics remained generally consistent during the 42-month study period.

Chart 4: Opiate Analgesic Payment Trends
Second Half 2012 through Second Half 2015
As shown in Chart 5, payments to physicians for non-opiate analgesics such as anti-inflammatories, declined from a 52% share in 2012 to a 43% share in 2015, although this rate has increased somewhat since 2014. Paid amounts per transaction to both physicians and pharmacies have remained stable, although pharmacies consistently received, on average, 25% higher levels of reimbursement for these medications.

Chart 5: Non-Opiate Analgesic Payment Trends
Second Half 2012 through Second Half 2015
Chart 6 displays dispensing trends for dermatological applications such as pain patches and some creams. This data shows that shares of payments to physicians dropped from 62% to 43% and correspondingly increased in pharmacies. For both physicians and pharmacies, paid amounts per transaction in 2015 were similar to 2012 levels, after spikes upward in the first half of 2013.

Chart 6: Dermatological Applications, Payment Trends
Second Half 2012 through Second Half 2015
Stomach discomfort drugs are often prescribed to counter the effects of opiate analgesics. Chart 7 shows how the reduction in physician payments for these medications paralleled the decline in opiate analgesics by dropping from a 72% share in 2012 to a 58% share in 2015. Physicians received higher payments per transaction for stomach discomfort drugs, consistently receiving approximately 30% more per transaction than pharmacies during the entire study period.

**Chart 7: Stomach Discomfort Drug Payment Trends**
*Second Half 2012 through Second Half 2015*

- **Physician Share of Stomach Discomfort Drug Payments**
- **Pharmacy Share of Stomach Discomfort Drug Payments**
- **Physician Paid Per Transaction**
- **Pharmacy Paid Per Transaction**
Behavioral Health drugs include a variety of pharmaceuticals, including antidepressants, anti-anxiety drugs, anticonvulsants, sedative hypnotics, stimulants and psychoactive medications. Some of these drugs are prescribed to treat pain symptoms. Chart 8 shows that physicians have consistently received a minority of payments for these drugs, and further declined from 30% to 20% during the study period. However, on a paid per transaction basis since 2014, physicians are approaching the level of pharmacies at a rate of $110 per paid transaction.

Chart 8: Behavioral Health Drug Payment Trends
Second Half 2012 through Second Half 2015

- **Physician Share of Behavioral Health Drug Payments**
- **Pharmacy Share of Behavioral Health Drug Payments**
- **Physicians Paid Per Transaction**
- **Pharmacy Paid Per Transaction**
Chart 9 displays dispensing trends for skeletal muscle relaxants. These data show a drop in physician payment share from 67% to 50% from 2012 through 2015. On a cost per transaction basis, physicians and pharmacies were roughly comparable by the end of 2015, although physicians recorded a spike upward in the first half of 2014.

Chart 9: Skeletal Muscle Relaxants Payment Trends
Second Half 2012 through Second Half 2015
Chart 10 displays payment trends for compounding base ingredients. These ingredients include bulk chemicals and other substances used as bases for mixing other drugs and represent approximately half of the total cost of compounded drugs.\textsuperscript{20} The share of compound base ingredient payments made directly to physicians has consistently averaged approximately 20% during this period. Payments per transaction to pharmacies for base compound ingredients rose 67% from $225 to $375. By contrast, payments per transaction to physicians for these base ingredients have generally averaged less than $150.

\textbf{Chart 10: Compound Base Ingredient Payment Trends Second Half 2012 through Second Half 2015}

\textbf{Compound Bill Payment Patterns}

The paid transactions for base compounding ingredients described in Chart 10 account for approximately one-half of all payments for compound bills. In order to gain a more complete picture of compounding, the WCIRB studied compounding on a per bill basis. The WCIRB identified approximately 177,000 bills receiving payments for base compounding ingredients, such as bulk chemicals, pharmaceutical adjuvants and some creams. Any additional formulations of more standard drugs on these bills were included as portions of the paid compound bills.\textsuperscript{21}

\textsuperscript{20} This compound billing pattern is described in Walls, A.P., et.al., "Compounding is Confounding Workers’ Compensation," CompPharma, Tampa, Florida, 2014.

\textsuperscript{21} This compound billing pattern is described in Walls, A.P., et.al., "Compounding is Confounding Workers’ Compensation," CompPharma, Tampa, Florida, 2014.
Powders were the most frequently appearing drug formulation mixed into compound base substance. Based on dosage strength, powdered versions of some standard drugs are generally more expensive than tablet or capsule forms of the same drug. As a result, the combined incremental charges and resulting payments for compounds can escalate to levels three to four times higher than non-compound prescriptions.\(^\text{22}\)

Compounds are manufactured by specialty pharmacies and pharmaceutical wholesalers who distribute these substances to pharmacies and providers. Chart 11 depicts the payment shares of the various combinations of drug ingredients found in compound bills in the WCIRB database.

These bills contain inactive bases for compounds (6% share) and active bulk chemical ingredients (28% share) as well as creams and lotions (25% share). The remaining 41% of the share of payments are for various forms of more standard drugs, nearly half of which are powdered forms of non-opiate analgesics. We analyzed whether compounders have gradually developed more commodity products by including fewer and more standardized ingredients in their products over the period between 2012 and 2015. Using a common statistical index of product concentration\(^\text{23}\), the WCIRB did not find greater concentration of ingredients over the study period. It is possible that this commodity packaging process may have begun in years before 2012 when our baseline data was collected.

**Chart 11: Paid Shares for Ingredients used in Compound Substances**

---


Compound Payments to Pharmacies and Physicians

Compound manufacturers distribute their products to pharmacies and physicians for dispensing to patients. As shown in Chart 12, in the second half of 2012, physicians and pharmacies accounted for roughly equal shares of paid billings for the 15% of drug spending resulting from compounds. The share of compound billings paid directly to physicians dropped from 6.6% to 2.3% during this period driving the overall share of compounds from 15% to 10% of all drug payments by the second half of 2015.

Chart 12: Share of Compound Payments to Physicians and Pharmacies

Regional Differences in Compound Payment Patterns

The WCIRB identified three-digit zip code locations for pharmacies and physicians included in the database. This data was grouped into the 62 three-digit zip code areas covering the 58 California counties displayed in Appendix 4. The regional differences in compound and non-compound drug dispensing are shown in Chart 13. This data encompasses both physicians and pharmacies for the entire 42-month study period.

Los Angeles County, the epicenter of compound dispensing, generates 67% of all payments for compounds while accounting for 47% of all California workers’ compensation medical payments. The other five counties in the Los Angeles Basin receive 19% of all compounding payments. Driven by Los Angeles County, the entire Los Angeles Basin accounts for 86% of compounding payments, compared to 64% of all statewide workers’ compensation medical payments.
payments during the 42-month study period. For non-compounded drugs, Chart 13 shows that regional drug payment patterns generally reflected regional differences in overall medical payments. Payments for compound drugs, whether to pharmacies or physicians, is a phenomenon primarily driven by the six county Los Angeles Basin.

Chart 13: Regional Drug Payment Patterns

24 WCIRB medical transaction data through second half of 2015.
When these substances are analyzed according to entities receiving payments, physicians and pharmacies show some regional differences. As depicted in Chart 14, the average payment of $294 per bill to physicians in the six county Los Angeles Basin is approximately 2% higher than the physician payment level for compounds in the other 52 California counties. For pharmacies, differences are greater. Pharmacies in the Los Angeles Basin received $1,020 per bill as compared to approximately $260 in the remainder of the state.

Chart 14: Average Compound Payment per Bill by Region

Comparisons of Generic to Brand Drugs
For all health care payers in the U.S., generic drugs constituted 90% of all pharmaceutical payments in 2015.\textsuperscript{25} By contrast, workers’ compensation generic payments range between 60% to 70% of drug spending.\textsuperscript{26} Do payment patterns for generic and brand drugs differ between physicians and pharmacies in California workers’ compensation?

The WCIRB classified National Drug Codes (NDCs) into generics and brand drugs (including brands with generic equivalents). For frequently prescribed drugs which have become generic in the past two years (such as Celebrex and Cymbalta), we used the generic classification. Compounded substances, which are composed of hybrids of several drugs, were excluded from this section of the study.


A recent WCIRB study showed that on an aggregate basis, the share of all drug payments for generics increased by 6% from 2013 to 2015 while the share spent on brand drugs correspondingly declined although brand drugs were paid an average rate five times higher than generics.27

As shown in Chart 15, the share of generic payments to physicians declined from approximately 60% to 40%, while payments per transaction have remained stable at approximately $70. For pharmacies, payments per generic transaction have increased by approximately 20%, and the paid amount per transaction is approaching the level paid to physicians.

Chart 15: Patterns of Payments for Generic Drugs
Second Half 2012 through Second Half 2015

As shown in Chart 16, the paid share of brand drugs to physicians declined from 40% to 25%, while the approximate average payment per brand drug transaction of $200 in the second half of 2015 is approximately the same level as it was in the second half of 2012. For pharmacies, payments per brand drug transaction increased by approximately 33% to an average of almost $400.

Chart 16: Patterns of Payments for Brand Drugs
Second Half 2012 through Second Half 2015

In summary, payment shares to physicians dropped for both generic and brand drugs. By contrast, the per transaction cost increased by 25% for generic and brand drugs paid to pharmacies, while per-transaction payments to physicians remained stable at 2012 levels. These disparities may occur because pharmacies have first access to the newest, most expensive drugs from wholesalers.28 As pharmacies have merged and become larger entities, the overall drug supply chain has become more concentrated in recent years.29

Comparisons for Therapeutically Equivalent Drugs
Pharmacies and physicians exhibit divergent payment patterns as shown above in Charts 4 through 10. These charts summarize broad Major Workers’ Compensation Drug Groups. Since each of these Major Drug Groups contains thousands of individual pharmaceuticals, the WCIRB reviewed payment differences at a more granular level.

---


**General Therapeutic Equivalents**

This analysis involves comparing the major drug groups by general therapeutic equivalents. To do so, the WCIRB analyzed its data to identify the 15 Generic Product Identifiers (GPIs) with the greatest share of payments during the study period. These 15 GPIs accounted for 41% of all drug payments in the WCIRB’s drug payment database.

Chart 17 displays comparisons between physicians and pharmacies for five major opiate analgesic GPIs. These controlled substances include Oxycontin, Tramadol, Oxycodone Acetaminophen (Percocet), Fentanyl and Hydrocodone combinations such as Vicodin. As shown in Chart 17, physicians received greater payments per transaction than pharmacies for all five categories of Opiate Analgesics. For Tramadol, payments per transaction are 300% higher for physicians than pharmacies, a difference driven by physician selection of the most expensive version of this drug, as shown in Charts 21A and 21B, presented later in this report.

---

30 Based on the WCIRB’s Medispan code load, April 2016.
Chart 18 displays comparisons between physicians and pharmacies for three major stomach discomfort GPIs, including Omeprazole (Prilosec), Pantoprazole (Protonix) and Ondasetron (Zofran). Physicians receive approximately 30% higher paid amounts per transaction than pharmacies for all three categories of stomach discomfort drugs, a finding which is further amplified by a review of specific forms of Prilosec shown in Charts 22A and 22B presented later in this report.

**Chart 18: Paid Per Transaction, Stomach Discomfort Drugs**
Chart 19 displays comparisons between payment patterns to physicians and pharmacies for four major behavioral health GPIs, including Abilify, Cymbalta, Lyrica and Gabapentin. Some of these drugs are used to treat neuropathic pain as well as mental health symptoms. Differences in cost levels for these pharmaceuticals between pharmacies and physicians are modest. Charts 24A and 24B show comparisons for specific versions of Gabapentin. For all other behavioral health drugs, physicians receive somewhat lower reimbursements per transaction than pharmacies. These results may reflect the ability of pharmacies to stock greater supplies of some of these recently released brand drugs.

Chart 19: Paid Per Transaction, Behavioral Health Drugs
The remaining three major GPIs include two non-opioid analgesics, Celebrex and Naproxen (Naprosyn) and one skeletal muscle relaxant, Cyclobenzaprine (Flexeril). Chart 20 shows that payments per transaction for all Flexeril GPIs are similar for both physicians and pharmacies, although physicians are paid more when specific versions are compared. As shown, physicians receive 15% higher payments for Naprosyn and 20% lower payments for Celebrex.

**Chart 20: Paid Per Transaction, Non-Opioid Analgesics and Skeletal Muscle Relaxants**
Specific Therapeutic Equivalents
Since each GPI may contain hundreds of specific drugs, with different dosage forms, strengths and unit amounts, the WCIRB also compared differences between physician dispensers and pharmacies for a number of specific, commonly dispensed drugs. This analysis included specific drugs from GPIs within each of the five major drug types.

Charts 21A and 21B compare paid amounts to physicians and pharmacies for two versions of Ultram, an opiate analgesic in the Tramadol category. These results indicate that payments per transaction for both types of dispensing sites for both drug versions are similar. However, physicians are much more likely to be paid for the more expensive version of the drug (Ultram 150 MG extended release caplets).
Charts 22A and 22B compare payments to physicians and pharmacies for two versions of Prilosec, a type of stomach discomfort drug within the Omeprazole category. These results show that physicians are more likely to be paid for the more expensive version of the drug (20 MG delayed release capsules) and less likely to dispense the lower priced version (40 MG delayed release capsules).
Charts 23A and 23B compare physician and pharmacy patterns for two versions of Flexeril, a type of skeletal muscle relaxant within the Cyclobenzaprine category. These results indicate that physicians are more likely to be paid for the more expensive version of the drug (7.5 MG tablets).
Charts 24A and 24B compare payments to physicians and pharmacies for two versions of Gabapentin, a drug classified as an anticonvulsant often used to treat neuropathic pain, and commonly prescribed as Neurontin. These results indicate that physicians are more likely to dispense the more expensive version of the drug (600 MG tablets) rather than the less expensive 300 MG caplets.

Charts 25A and 25B compare payments to physicians and pharmacies for Naprosyn, a specific version of a non-opiate analgesic, Naproxen. These results show that physicians receive 25% higher payments for the 550 MG tablet version of this drug for which physicians dispense more frequently.
These charts showed consistently higher unit cost payments to physicians across the major drug categories over a 42-month period. Although physicians are dispensing a smaller percentage of pharmaceuticals in California, some physicians have focused on dispensing a handful of specific drugs such as Tramadol, Prilosec, Naprosyn and Flexeril. Moreover, physicians are generally paid for more expensive drugs in specific categories rather than the less expensive therapeutic equivalent drugs available in pharmacies. Additionally, some new, more expensive versions of these drugs have been introduced, are available to physicians, but are not yet covered by the pharmacy fee schedule. A recent Workers Compensation Research Institute study showed how these recently introduced versions of drugs can be significantly more costly than pre-existing versions.31

Conclusions
This study shows that the share of total drug payments received by dispensing physicians dropped by 20% during the period between July 2012 and December 2015. This change reflected reductions in utilization, as measured by pharmaceutical transactions per claim, rather than from a decline in paid unit costs of drugs. Reductions in physician drug payments occurred across all major drug groups and was especially apparent for opiate analgesics, one of the most prominent types of drug in California workers’ compensation. Nevertheless, although direct payments to physicians for drugs has declined over the 42-month study period, approximately 30% of all drug payments continue to be sent directly to physicians as of December 2015, a rate higher than many other states.32

For base ingredients used in compound drugs, payment shares to physicians have dropped by 50% since 2012, although paid amounts per compound ingredient transaction remained stable over the 42-month period. For other types of pharmaceuticals, such as stomach discomfort drugs, physicians consistently generate higher reimbursements per transaction than pharmacies.


29 | Patterns of Drug Dispensing in California Workers’ Compensation
When considering therapeutic equivalents of some of the most frequently prescribed drugs, physicians generally receive higher payments per transaction. This difference is magnified by the tendency for physicians to be paid for some of the most expensive drugs in specific drug categories.

Several factors have contributed to the decline of drug payments per California workers’ compensation claim since 2012, a change driven by a reduced number or prescriptions per claim rather than lower unit costs. The widespread attention to opiate use in workers’ compensation may have affected prescribing behavior. Overall changes in the wholesale drug supply chain may have affected physicians, including a 2013 Federal law requiring FDA inspections of compound drug wholesalers.\(^33\) In addition, some Managed Provider Networks (MPNs) have contractually disallowed physician dispensing. Since July 2013, drug prescribing in California workers’ compensation has been subject to a greater level of scrutiny since the introduction of Independent Medical Review (IMR). The CWCI has shown that approximately half of all 2015 IMR decisions concern prescription drugs and uphold 90% of prior utilization review denials.\(^34\)

The decline in physician dispensing shown in this study may also be a contributing factor in the overall drop of drug costs per claim since the second half of 2012. It is likely that the various factors described above are interdependent. For example, the heightened peer oversight and visibility brought about by utilization review programs, combined with IMR, may have curbed, in part, the willingness of some physicians to engage in the dispensing of drugs from their offices.


## Appendix 1: Summary of Data Included in This Study

<table>
<thead>
<tr>
<th>Drug Payment Data Sources</th>
<th>% of Total Drug Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Included Data:</strong></td>
<td></td>
</tr>
<tr>
<td>Insurer and PBM data with detailed identifying data on pharmacies and physician dispensers</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Excluded Data:</strong></td>
<td></td>
</tr>
<tr>
<td>PBM data without detailed identifying information on pharmacies and/or physicians</td>
<td>23%*</td>
</tr>
<tr>
<td>Other drug dispensers: (Non-California pharmacies and physicians, hospitals, HMOs, mail order suppliers and miscellaneous providers)</td>
<td>18%</td>
</tr>
<tr>
<td>Drug payments without identifying NDC or physician/pharmacy ID codes</td>
<td>9%</td>
</tr>
</tbody>
</table>

* Based on WCIRB research and discussions with PBM executives, the patterns of WCIRB drug data included in this study are representative of drug data in the overall California workers’ compensation market.
# Appendix 2: Most Frequent GPI Drug Categories in This Study

## Illustrative Example for Appendix 2

<table>
<thead>
<tr>
<th>CODE TYPE</th>
<th>CODE #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR WC DRUG CATEGORY</td>
<td>1</td>
<td>Opiate Analgesics</td>
</tr>
<tr>
<td>THERAPEUTIC GROUP (TG)</td>
<td>65</td>
<td>Analgesic Opiate</td>
</tr>
<tr>
<td>THERAPEUTIC CLASS (TC)</td>
<td>6510</td>
<td>Opiate Agonist</td>
</tr>
<tr>
<td>GPI-GENERIC DRUG EQUIVALENT</td>
<td>65100095</td>
<td>Tramadol</td>
</tr>
<tr>
<td>GPI-SPECIFIC DRUG EQUIVALENT</td>
<td>65100095107075</td>
<td>300 MG Tramadol Tablets</td>
</tr>
<tr>
<td>NDC CODE</td>
<td>504580650730</td>
<td>ULTRAM 300 MG Tablets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Total Drug Paid</td>
<td>22%</td>
<td>17%</td>
<td>13%</td>
<td>13%</td>
<td>11%</td>
<td>9%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Therapeutic Groups</td>
<td>65</td>
<td>64, 66, 68</td>
<td>90</td>
<td>49,50</td>
<td>58-62, 72</td>
<td>22, 23, 74, 75</td>
<td>90, 96, 98</td>
<td>Various</td>
</tr>
</tbody>
</table>

**Illustrative Example:** Tramadol (Ultram) is an example of an Opiate Agonist within the Major WC Drug Categories. This demonstrates the typical structure and content of the table. The researchers did not include data on drug quantity (e.g., pills per prescription).

**NOTE:** This study analyzed the drug code types shown above, as well as data on drug strengths, dosages and formulations. The researchers did not include data on drug quantity (e.g., pills per prescription).
Appendix 3: Example of a Compound Drug Prescription*

NOTE: The vast majority of these individual Ingredients have been separately approved by the U.S. Food & Drug Administration (FDA). However, the unique combinations of active and non-active ingredients dispensed as compound medications generally have not been FDA approved.

* From “Compounding is Confounding Workers’ Compensation,” CompPharma, 2014.
Appendix 4: Categorization of Six California Regions

<table>
<thead>
<tr>
<th></th>
<th>LOS ANGELES COUNTY</th>
<th>REMAINDER OF LA BASIN</th>
<th>SAN DIEGO COUNTY</th>
<th>CENTRAL CALIFORNIA</th>
<th>BAY AREA</th>
<th>ALL OTHER REGIONS</th>
<th>STATE-WIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td># OF COUNTIES</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>12</td>
<td>8</td>
<td>31</td>
<td>58</td>
</tr>
<tr>
<td>COUNTY NAMES</td>
<td>Los Angeles</td>
<td>San Bernardino, Orange, Ventura, Riverside, Imperial</td>
<td>San Diego</td>
<td>Santa Barbara, Inyo, Kern, Fresno, Mono, San Luis Obispo, Tulare, Madera, Kings, Santa Cruz San Benito, Monterey</td>
<td>San Francisco, Alameda, Marin, San Mateo, Santa Clara, Contra Costa, Sonoma, Napa</td>
<td>All Others</td>
<td>ALL</td>
</tr>
<tr>
<td># OF 3 DIGIT ZIP CODES</td>
<td>20</td>
<td>9</td>
<td>3</td>
<td>11</td>
<td>11</td>
<td>8</td>
<td>62</td>
</tr>
</tbody>
</table>
## Appendix 5: Summary of Pharmacies and Physician Dispensers Included in This Study

<table>
<thead>
<tr>
<th>DISPENSER TYPE &amp; LOCATION</th>
<th>LA COUNTY</th>
<th>OTHER LA BASIN</th>
<th>SAN DIEGO</th>
<th>CENTRAL CALIFORNIA</th>
<th>BAY AREA</th>
<th>ALL OTHER REGIONS</th>
<th>STATEWIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacies*</td>
<td>1,223</td>
<td>890</td>
<td>320</td>
<td>802</td>
<td>730</td>
<td>552</td>
<td>4,517</td>
</tr>
<tr>
<td>Physicians **</td>
<td>912</td>
<td>510</td>
<td>190</td>
<td>443</td>
<td>353</td>
<td>223</td>
<td>2,631</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,135</td>
<td>1,400</td>
<td>510</td>
<td>1,245</td>
<td>1,083</td>
<td>775</td>
<td>7,148</td>
</tr>
</tbody>
</table>

* Pharmacies are defined as entities receiving payments for drugs during the study period including chain pharmacies, independent pharmacies, compounding pharmacies and drug wholesalers.

** Physicians are defined as any entity classified as a physician in the California workers’ compensation system who received payments for drugs during the study period. This designation included individual MDs, group practices, clinics, acupuncturists, osteopaths and chiropractors.