NCCI Holdings, Inc.

NCCI RESEARCH BRIEF

December 2009

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Narcotics in Workers Compensation

Introduction

Narcotics account for nearly one quarter of all workers compensation (WC) prescription drug (Rx) costs. Few members of the medical community would object to the use of narcotics to treat severe, chronic, cancer-related pain. However, the medical community seems divided over the suitability of narcotics to treat other forms of pain, such as those resulting from the majority of WC injuries.

Despite the serious risks associated with narcotics usage, some physicians prescribe narcotics for minor injuries, such as sprained ankles. This practice, according to the director of the FDA's new drug center, can be dangerous [1]. However, the *Journal of Pain* [2] says there is a "growing consensus that [narcotic] therapy is appropriate for chronic noncancer pain."

Currently, the FDA is in the process of establishing a federal program to ensure the safe, appropriate use of narcotics. *The New York Times* [1] discusses this future FDA program designed to control "the prescribing, dispensing and distribution of extended-release [narcotics]." One aim of the future program would be to ensure that only physicians who are properly trained in the safe use of narcotics can prescribe them. (See Appendix B for more information.)

Several recent articles and studies point to increased scrutiny of narcotics use. One article [3] notes that, in at least one state, diagnoses of "chronic pain" or "failed back syndrome," "virtually guarantee that the claim involves overprescription [of narcotics] because these are the diagnoses used to justify the use of narcotics." Another [4] states that overuse of narcotics has "shown adverse effects on the overall well-being and treatment of injured parties."

This study examines the use and prescribing patterns of this controversial category of drugs in WC.

Key Findings

- Narcotics account for nearly one quarter of all WC Rx costs
- The narcotics share of drug costs increases as claims age
- Narcotics costs per claim vary by state with apparent regional differences
- Narcotics are used mostly for back injuries in WC
- Narcotics use early in the life of claims is increasing
- Narcotics use can persist for many years
- Heavy narcotics use for WC injuries is related to substance-abuse treatments

Background

Narcotics, sometimes known as opioids or opiates, have been used in medicine for centuries [5]. The US Drug Enforcement Administration (USDEA) observes that [6], "in a legal context, narcotic refers to opium, opium derivatives, and their semi-synthetic substitutes." The USDEA goes on to note that [5] "narcotics are used therapeutically to treat pain, suppress cough, alleviate diarrhea, and induce anesthesia." However, the US Food and Drug Administration remarks on possible adverse effects of narcotics use [7], "The most serious of the known adverse events associated with opioid pain relievers are respiratory depression, central nervous system depression, addiction, and death. Adverse events are associated with improper dosing, indication, and patient selection, as well as abuse and addiction."

Study Data

The data used in this study was consolidated from a sample of claims data provided by select carriers for injuries that occurred from 1994 to 2007, and services provided from 1996 to 2007, evaluated as of July 1, 2008. The "prescription drugs" included in the data are all drugs identified with a National Drug Code (NDC) or with a carrier-specialized drug code. Therefore, not all WC drug costs are included in this study (e.g., we are not able to include drug costs that were bundled with other services and included in codes such as Hospital Revenue Codes, Healthcare Common Procedure Code System [HCPCS], or Current Procedural Terminology [CPT]).

Narcotics Definition

For the purposes of this study, a drug is considered to be a narcotic if its brand name or an active ingredient is listed in the International Narcotics Control Boards' List of Narcotic Drugs Under International Control, "The Yellow List" [8]. Note that this list does not include certain drugs that some other researchers include in their definition of narcotics, such as tramadol.

Discussion of Findings

Extent of Narcotics in WC

Exhibit 1 shows that narcotics account for nearly one-quarter of all WC Rx costs. And while this nontrivial share has been relatively constant since service year 2000, service year 2005 saw a slight aberration. The timing of this temporary increase coincides with the voluntary removal of Vioxx® and Bextra® and the release of expanded risk information for Celebrex®. The proximity of this aberration with these events suggests that WC doctors might have been, at least temporarily, prescribing narcotics as alternatives to these COX-2 inhibitors.

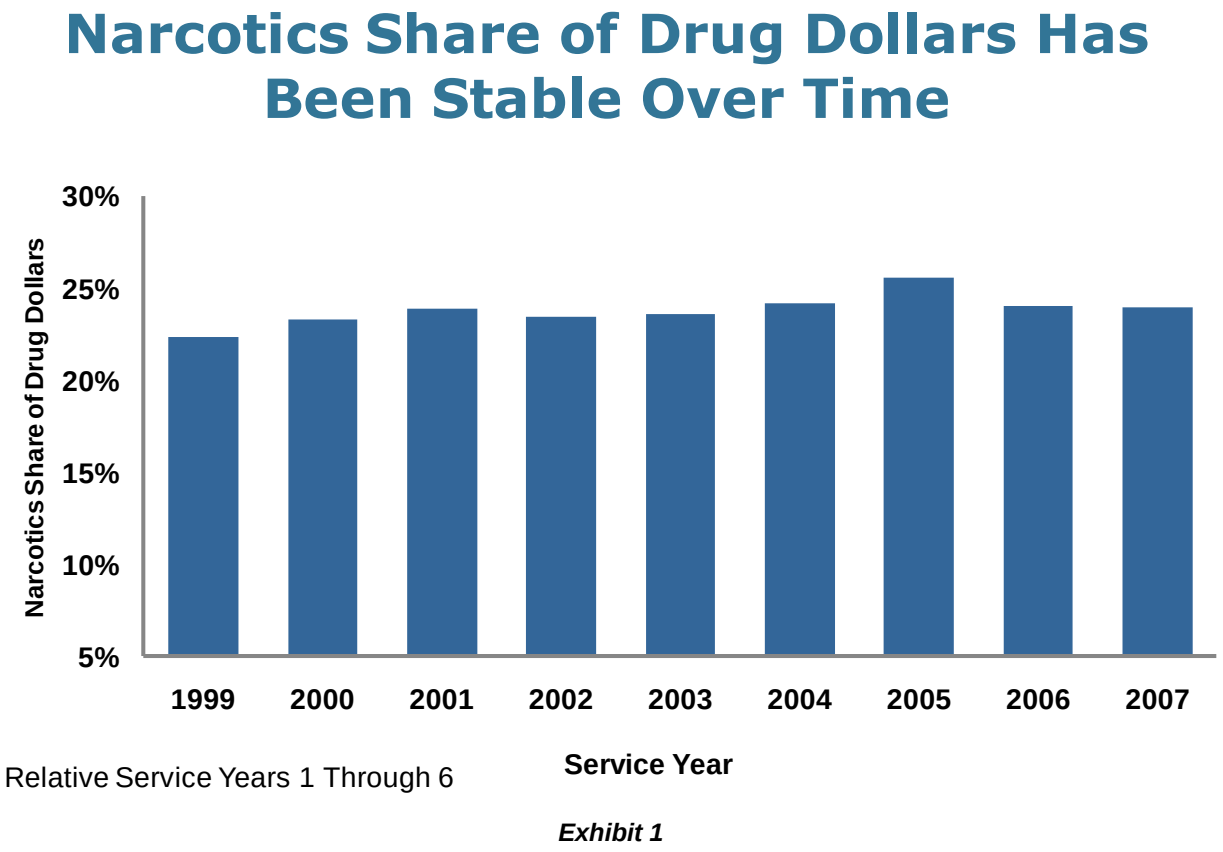
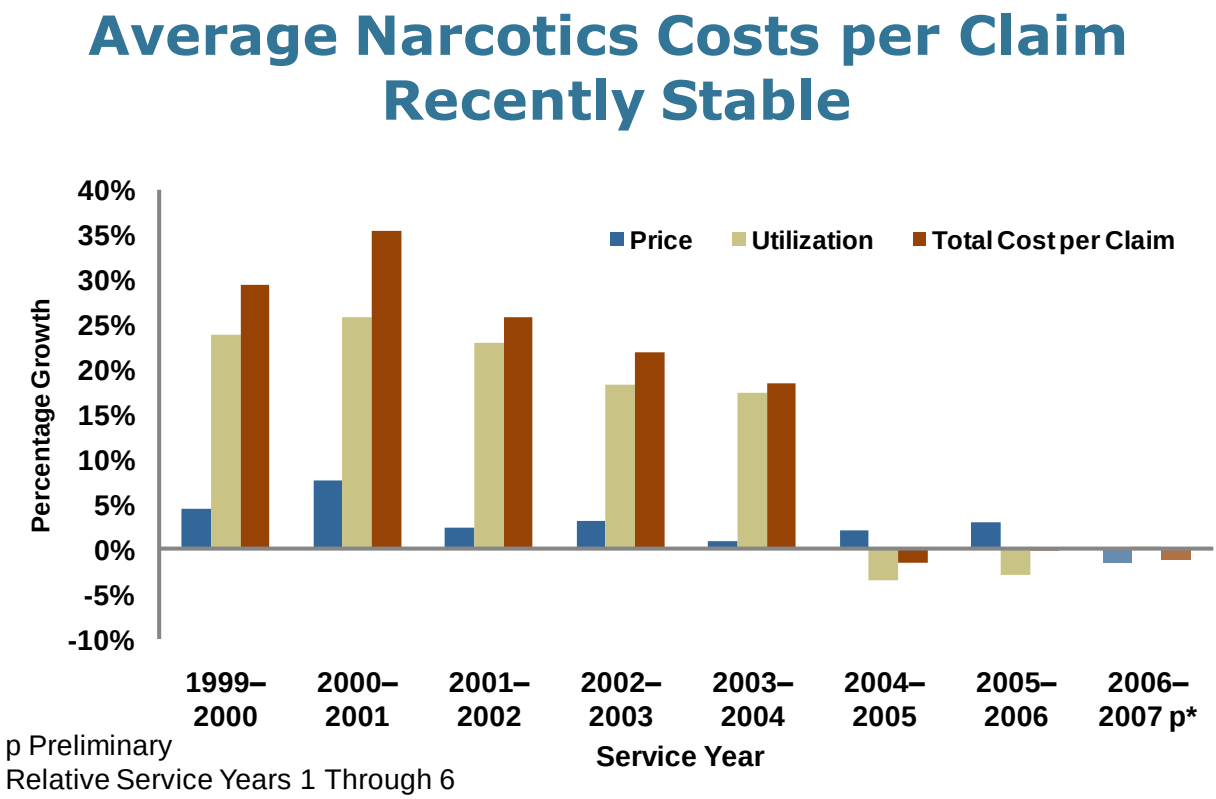


Exhibit 1

Exhibit 2 separates the year-to-year changes in narcotics costs per medical claim into price and utilization components. Utilization includes all impacts other than price, such as changes in the number of prescriptions and in the mix of drugs prescribed. In the past, utilization proved to be the more significant component in driving overall cost changes.

Prior studies separated changes in total Rx costs per medical claim into price and utilization components. The pattern for all Rx drug costs is similar to the pattern seen for narcotics only in Exhibit 2, with high increases in the older years driven mostly by utilization increases.



* Preliminary: The most recent service year is subject to material data reporting lag, resulting in possible increases in both utilization and total cost changes at subsequent maturities.

Exhibit 2

Narcotics Prescribing Patterns

While Exhibit 1 shows no trend in the narcotics share of total Rx by service year, Exhibit 3 shows a significant upward trend by relative service year.[a] The narcotics share of Rx increases steadily with maturity until about the eighth relative service year when it levels off.

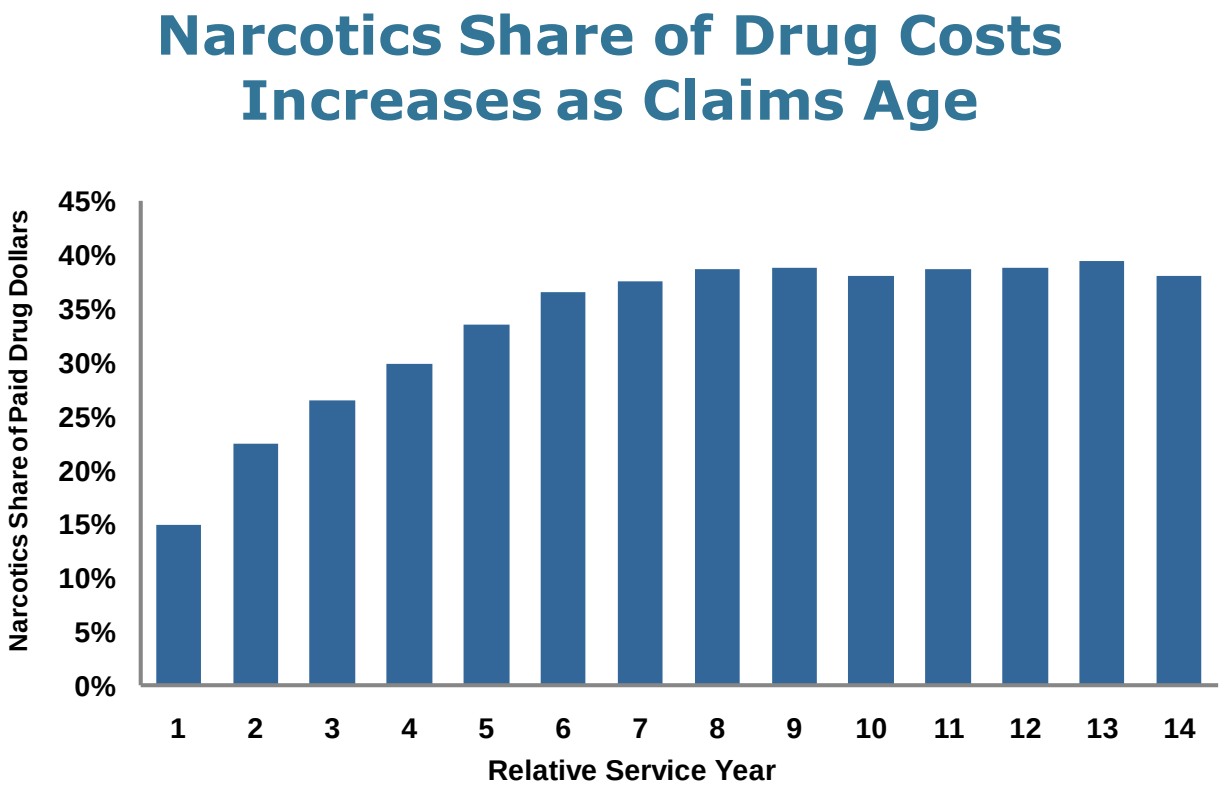


Exhibit 3

Interestingly enough, the relative quantity of narcotics prescriptions, shown in Exhibit 4, does not explain the increase in relative costs seen in Exhibit 3. In fact, apart from the jump between the first and second relative service years, the number of narcotics prescriptions relative to the number of total Rx prescriptions remains very persistent and even shows a pattern of slightly declining shares as the Relative Service Year increases.

Narcotics Share of Drug Prescriptions Is Persistent as Claims Age

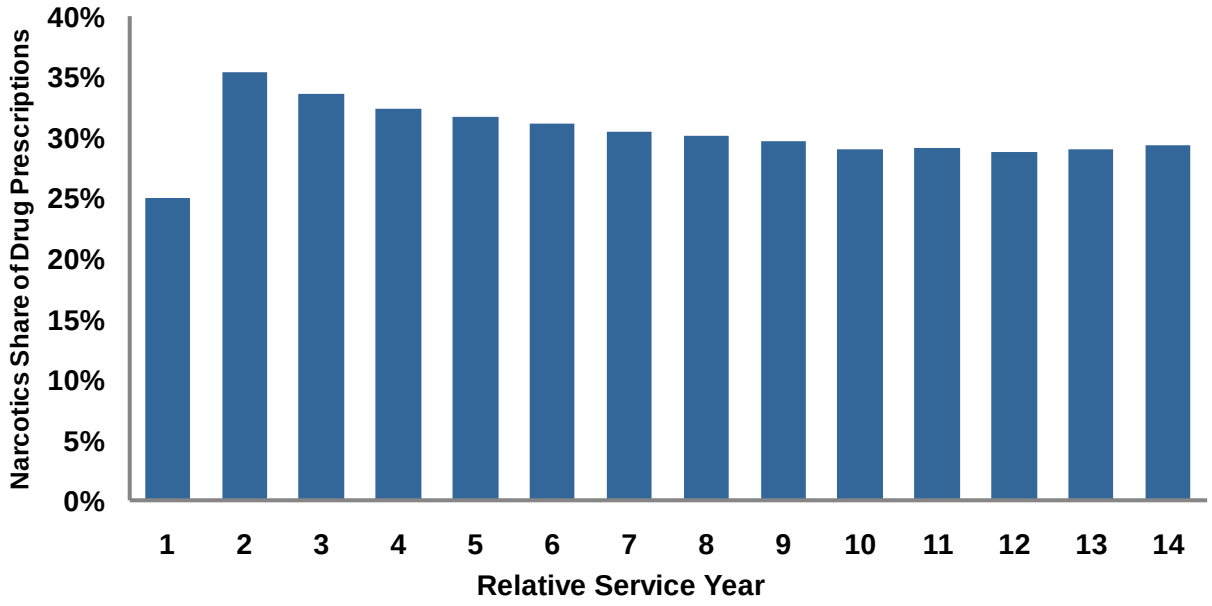


Exhibit 4

If quantity does not drive the increase in the relative cost of narcotics, that leaves only the average cost per prescription as an explanation. Exhibit 5 shows that the average narcotics prescription costs increases significantly through about the 9th relative service year and then remains level through the 12th. This is due to the use of higher-cost narcotics as claims age.

Average Narcotics Prescription Cost Increases as Claims Age

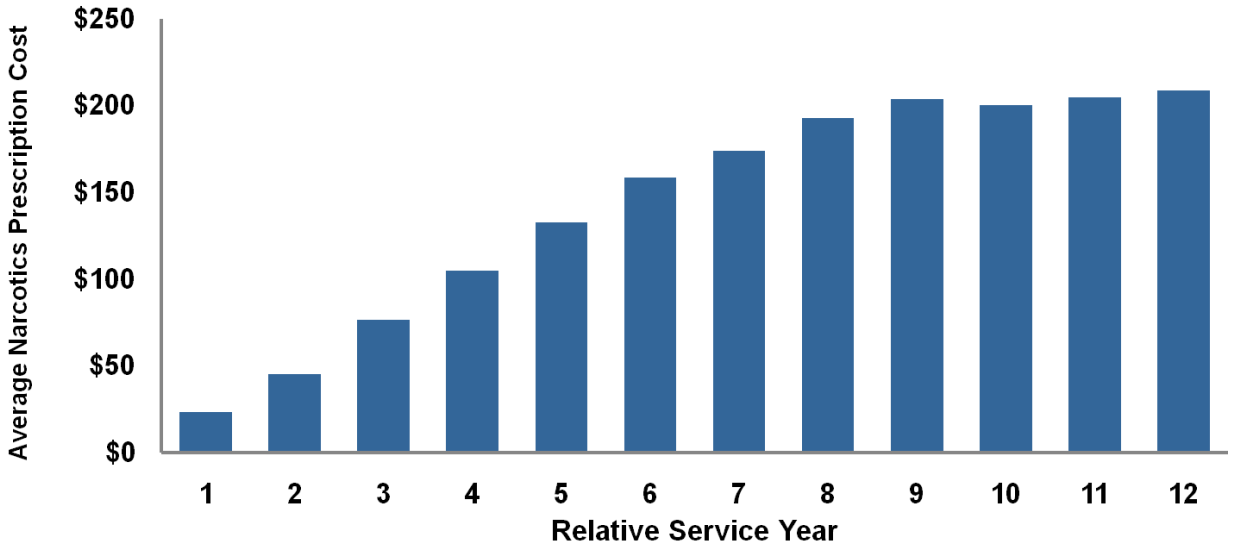


Exhibit 5

Exhibit 6 shows the distribution of three narcotics prescription cost categories by relative service year:

- Low cost—drugs for which the average paid dollars per prescription are less than $25
- Medium cost—drugs for which the average paid dollars per prescription are between $25 and $75
- High cost—drugs for which the average paid dollars per prescription are greater than $75

High-cost prescriptions grow from a relatively small portion (9%) of narcotics prescriptions in the first relative service year to 45% of all narcotic prescriptions in the twelfth Relative Service Year. Exhibits 9, 10, and 11 give examples of drugs in each of these categories.

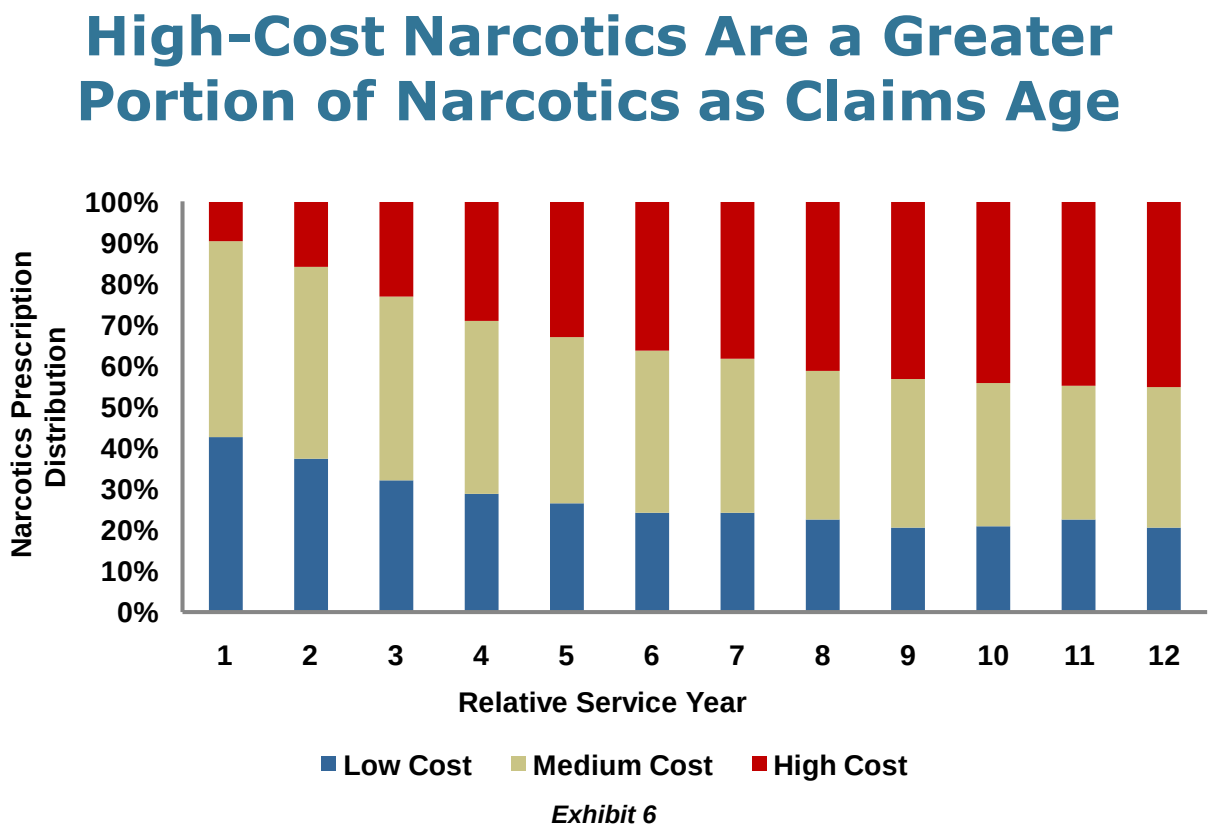


Exhibit 6

Distribution of Narcotics by Active Ingredient

Exhibit 7 shows a breakdown of Service Year 2007 narcotics dollars paid for drugs by active ingredient. The active ingredient oxycodone (which includes the popular painkiller OxyContin®) represents the largest share of narcotics costs at 37.4%, followed by hydrocodone at 23.0%, and fentanyl (which includes one of the most expensive drugs—Duragesic®) at 11.8%.

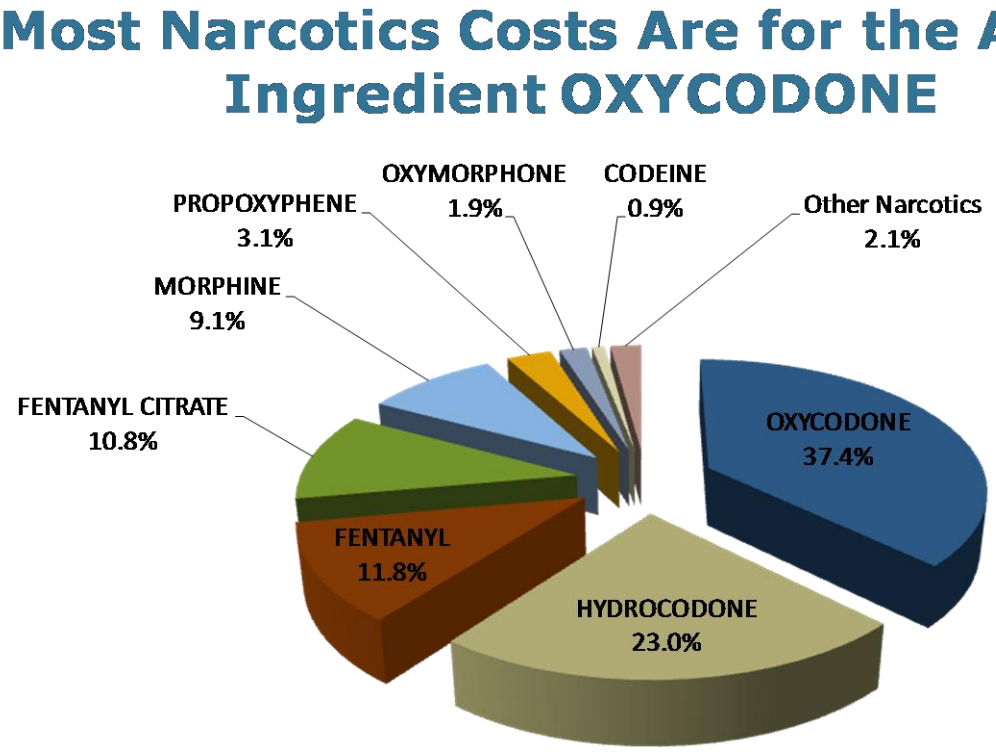


Exhibit 7

Exhibit 8 shows a breakdown of Service Year 2007 narcotics prescriptions filled for drugs by active ingredient. Comparing Exhibits 7 and 8 provides for a rough drug cost index. For instance, while narcotics with the active ingredient hydrocodone make up less than a quarter of narcotics costs, they comprise 57.6% of all narcotics prescriptions, implying that prices for these drugs are less than half the average price of all narcotics. While narcotics with the active ingredient fentanyl account for more than 11% of narcotics dollars paid, they account for less than 3% of narcotics prescriptions, implying that the average price for these drugs is nearly four times the average for all narcotics.

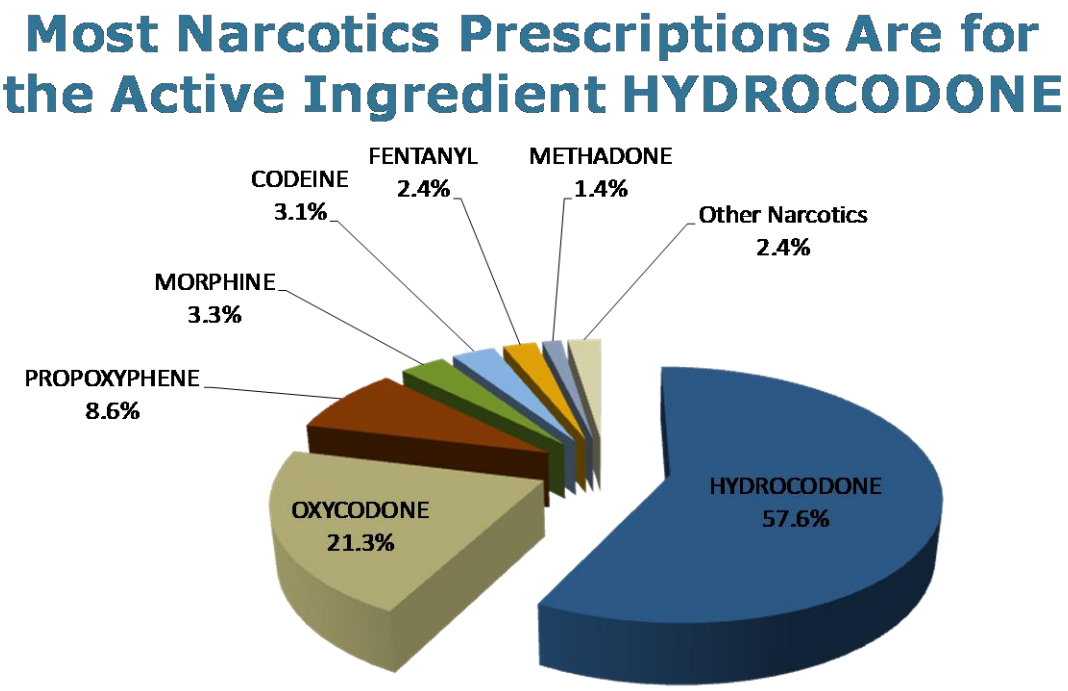


Exhibit 8

Exhibits 9, 10, and 11 show some drugs whose active ingredient is either oxycodone, hydrocodone, fentanyl, or fentanyl citrate. Most of the prescriptions written for drugs with the active ingredient oxycodone are in the high- and medium-cost categories, while the majority of drugs written with the active ingredient hydrocodone are in the low-cost category. Virtually all drugs with the active ingredient fentanyl or fentanyl citrate are in the high-cost category. (See Appendix A for a list of the top 50.)

Top Paid Narcotics in 2007 With OXYCODONE as Active Ingredient

Drug Name	Rx Cost Category*	% Paid	% Rx	Paid Rank	Rx Rank
OXYCODONE HCL	High	12.2%	5.7%	2	4
OXYCONTIN®	High	11.9%	1.8%	3	6
OXYCODONE W/ACETAMINOPHEN	High/Medium	7.0%	10.6%	5	2
PERCOCET®	High	3.5%	0.9%	10	11
ENDOCET®	Medium	2.4%	1.8%	12	7
ROXICODONE®	High	0.2%	0.1%	31	38
ROXICET®	Low	0.1%	0.2%	39	22
MAGNACET®	High	0.1%	0.0%	43	55
COMBUNOX®	High	0.1%	0.0%	47	46
ETH-OXYDOSE®	High	0.1%	0.0%	49	56
All Others		0.1%	0.1%		
Subtotal		**37.4%**	**21.3%**		

* Low < $25, Medium $25–$75, High > $75

Exhibit 9

Top Paid Narcotics in 2007 With HYDROCODONE as Active Ingredient

Drug Name	Rx Cost Category*	% Paid	% Rx	Paid Rank	Rx Rank
HYDROCODONE/ACETAMINOPHEN	Low/Medium	19.9%	55.2%	1	1
HYDROCODONE BIT-IBUPROFEN	Medium	0.6%	0.8%	18	15
NORCO®	High	0.6%	0.3%	19	20
THERACODOPHEN-650®	High	0.5%	0.2%	20	27
LORTAB®	Medium	0.4%	0.4%	23	18
VICODIN ES®	Medium	0.2%	0.3%	28	21
VICODIN®	Medium	0.1%	0.2%	32	24
HYDROCODONE BITARTRATE	High	0.1%	0.0%	35	43
LORCET 10/650®	High	0.1%	0.0%	37	44
XODOL 10/300®	High	0.1%	0.0%	40	45
THERACODOPHEN-LOW-90®	High	0.1%	0.0%	41	54
VICODIN HP®	High	0.1%	0.0%	45	50
VICOPROFEN®	High	0.1%	0.0%	48	51
All Others		0.1%	0.1%		
Subtotal		**23.0%**	**57.6%**		

* Low < $25, Medium $25–$75, High > $75

Exhibit 10

Paid Narcotics in 2007 With FENTANYL as Active Ingredient

Drug Name	Rx Cost Category*	% Paid	% Rx	Paid Rank	Rx Rank
FENTANYL	High	7.1%	1.7%	4	8
DURAGESIC®	High	4.7%	0.7%	7	16
FENTANYL		**11.8%**	**2.4%**		
ACTIQ®	High	4.9%	0.1%	6	36
FENTANYL CITRATE	High	4.2%	0.2%	8	26
FENTORA®	High	1.7%	0.1%	15	37
All Others		0.0%	0.0%		
FENTANYL CITRATE		**10.8%**	**0.3%**		

* Low < $25, Medium $25–$75, High > $75

Exhibit 11

Narcotics Costs Comparisons Between States

The map in Exhibit 12 displays average WC narcotics costs per medical claim by state and shows that average cost levels tend to vary regionally. Midwestern states tend to be lower-cost states and coastal states tend to be higher cost. Average narcotics cost is defined as between $15 and $30 per medical claim, above average is greater than or equal to $30, and below average is less than or equal to $15.

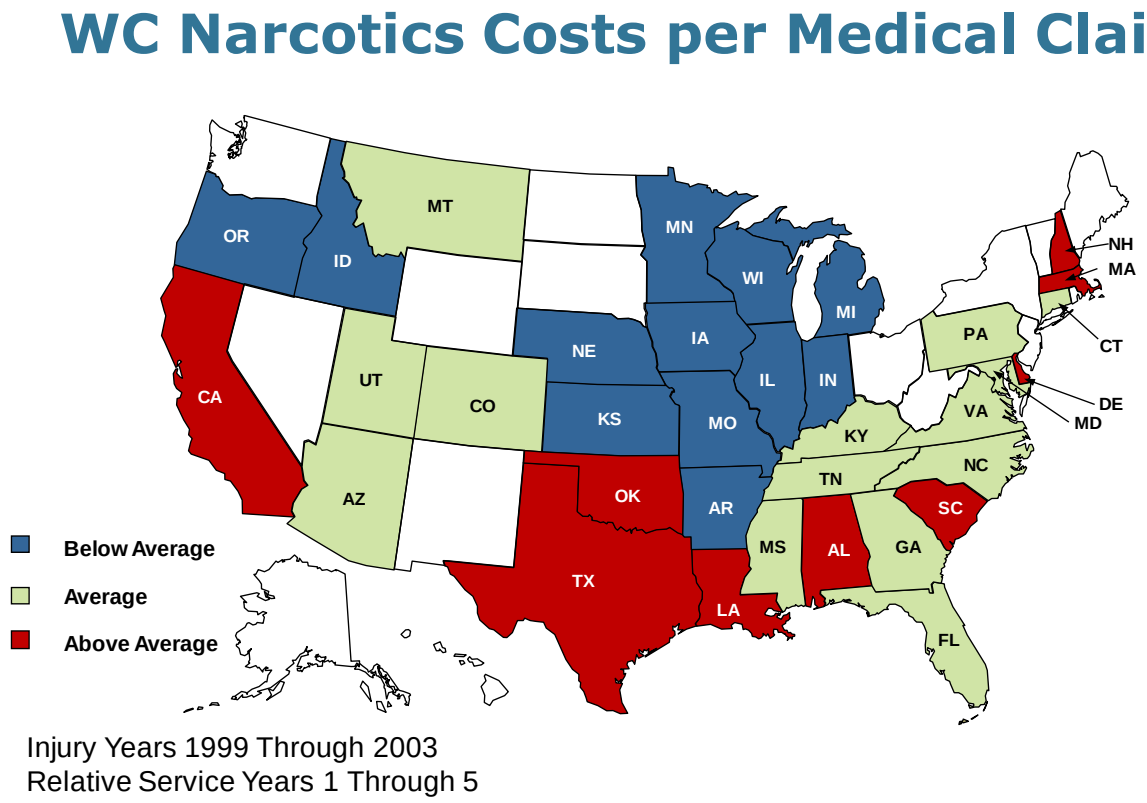
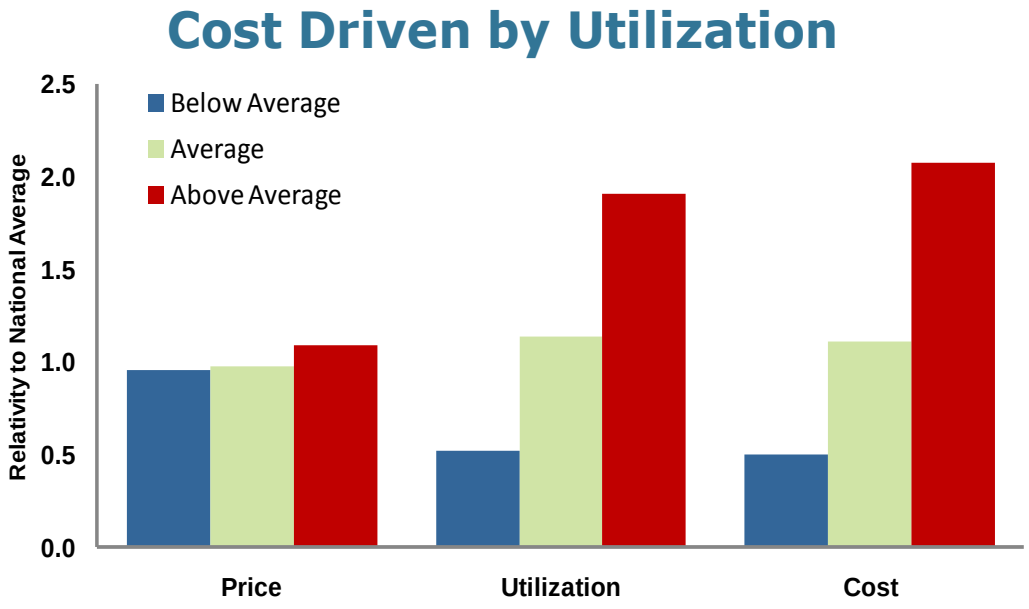


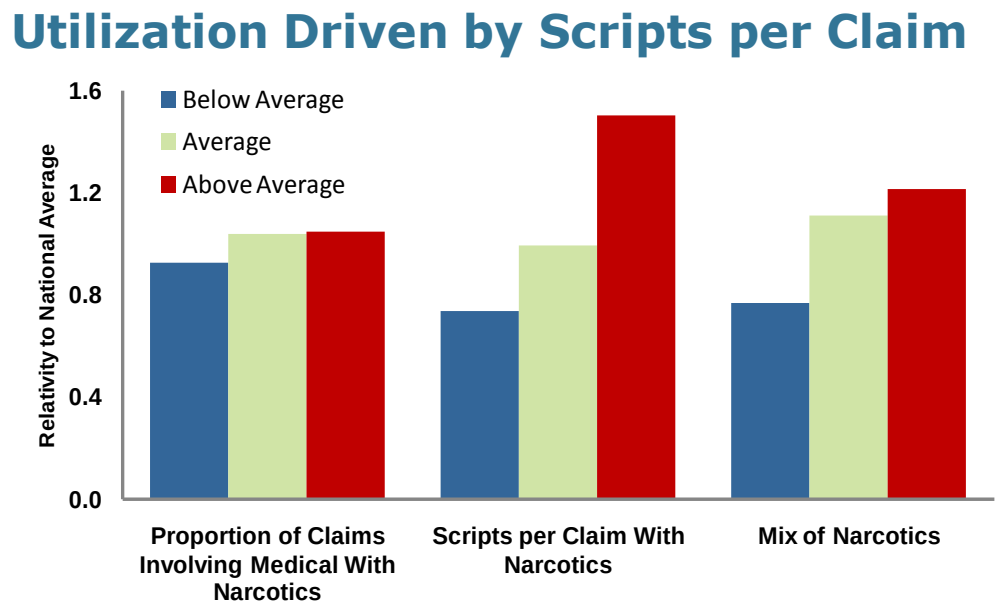
Exhibit 12

Exhibit 13 breaks up the state differences in Exhibit 12 into price and utilization components. Clearly utilization, not price, explains the majority of the cost differences between states. Exhibit 14 breaks the utilization component of Exhibit 13 into subcomponents. The number of scripts for claims involving narcotics significantly contributes to the cost differences between states. Claims in higher-cost states also use more expensive drugs. And while claims in lower-cost states involve narcotics less often than other states, this is only a minor contributing factor.



Injury Years 1999 Through 2003
Relative Service Years 1 Through 5

Exhibit 13



Injury Years 1999 Through 2003
Relative Service Years 1 Through 5

Exhibit 14

Narcotics Use in WC

Exhibit 15 shows the top primary diagnoses, in terms of narcotics dollars paid and narcotics prescriptions written for Service Year 2007. The top four primary diagnosis codes make up more than 57% of dollars paid and 45% of prescriptions. These four diagnosis codes fall into the class, "Diseases of the Musculoskeletal System and Connective Tissue." According to Swedlow et al. [9], for this class of injuries the American College of Occupational and Environmental Medicine (ACOEM) guidelines sanction opioid therapy:

- For acute pain "only when there is significant objective evidence of injury" or when other drugs are contraindicated or have proven ineffective.
- For short-term use in chronic pain "to facilitate physical activation" "during the initial active physical rehabilitation" if the patient exhibits "(fear avoidant) chronic pain behavior." It also stipulates that use for this purpose should be "in infrequent instances" and that other therapy options should first be exhausted.
- For continued use only "in rare situations when a patient derives clear functional benefit from opioid use" and stipulates that such use should be accompanied by "careful management."

More than 44% of dollars paid and 32% of prescriptions written for narcotics are for claims involving back injuries. A California Workers Compensation Institute (CWCI) study in June 2008 [8] found that doctors prescribed opioids in 25% of all back injury cases without spinal cord involvement in California workers compensation. These back injuries are typically sprains and strains.

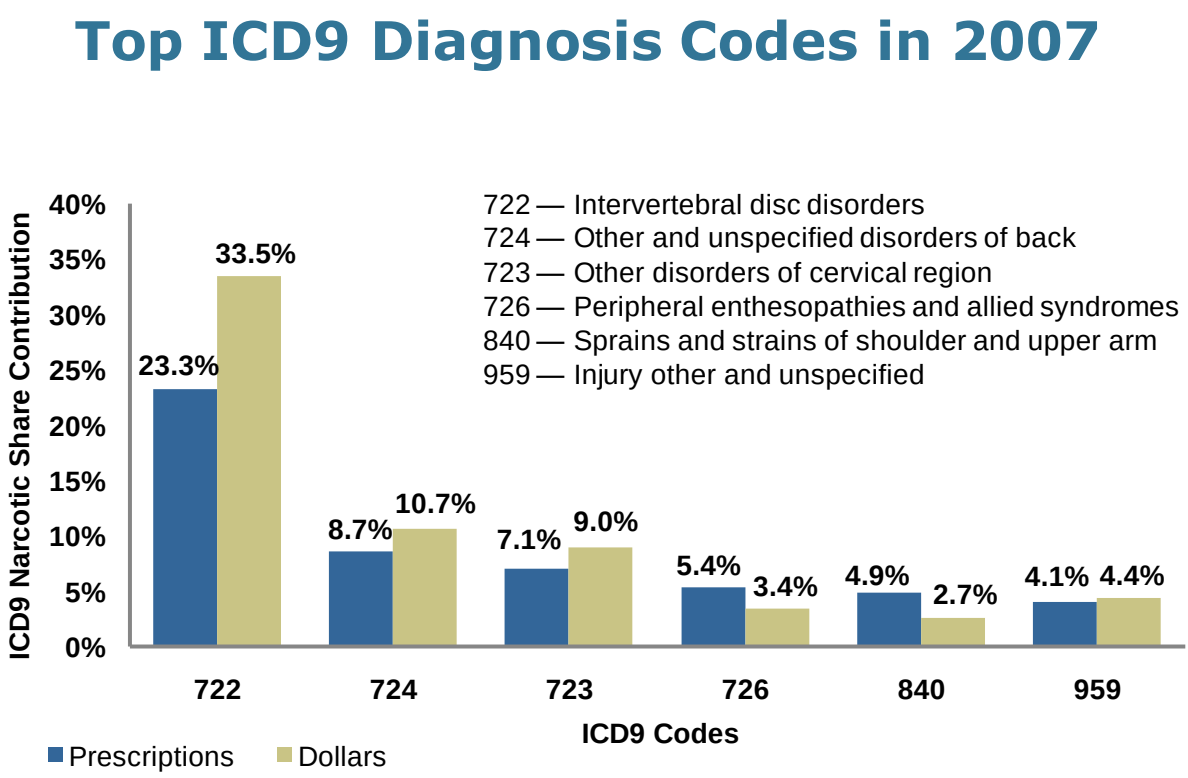


Exhibit 15

Exhibit 16 shows the percentage of medical claims that receive narcotics between 12 and 36 months after the injury and within 36 months of the injury by injury year.[b] The increase in the percentage of claims receiving narcotics within 36 months of injury points to increased utilization of narcotics in WC. The stability in the percentage of claims receiving narcotics between 12 and 36 months after injury suggests that the increased utilization is primarily in short-duration narcotic therapy rather than chronic narcotic therapy.

Early Narcotics Use Is Increasing

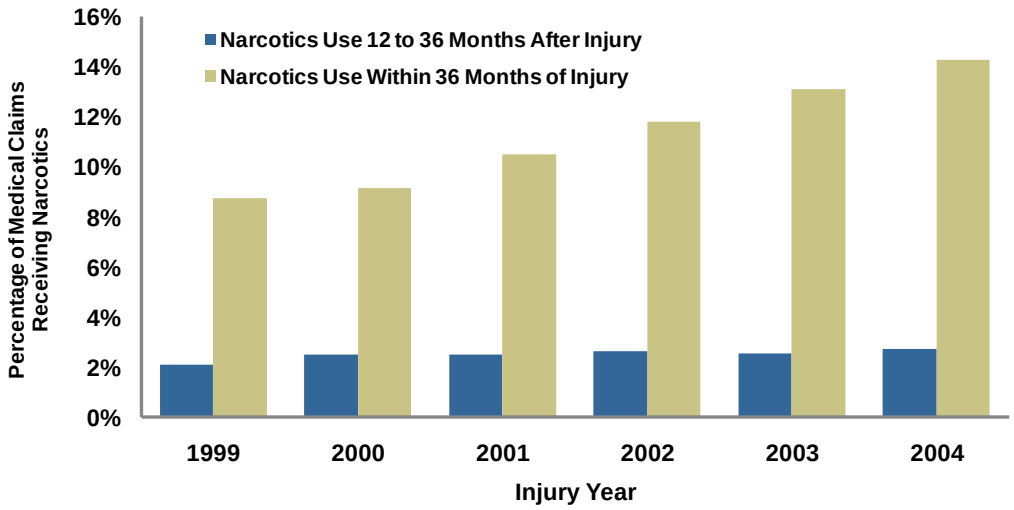


Exhibit 16

Exhibit 17 shows continuous narcotics usage for claimants receiving narcotics in the second 12-month period following their injury date. It appears that although these claimants continue to receive narcotics for many years, the persistence of narcotics use is not as severe as expected. For example, less than half of those receiving narcotics in the second year after injury are prescribed narcotics in the third year after injury. Roughly, 5% of those receiving narcotics in the second year after injury are receiving them in the tenth year after injury.

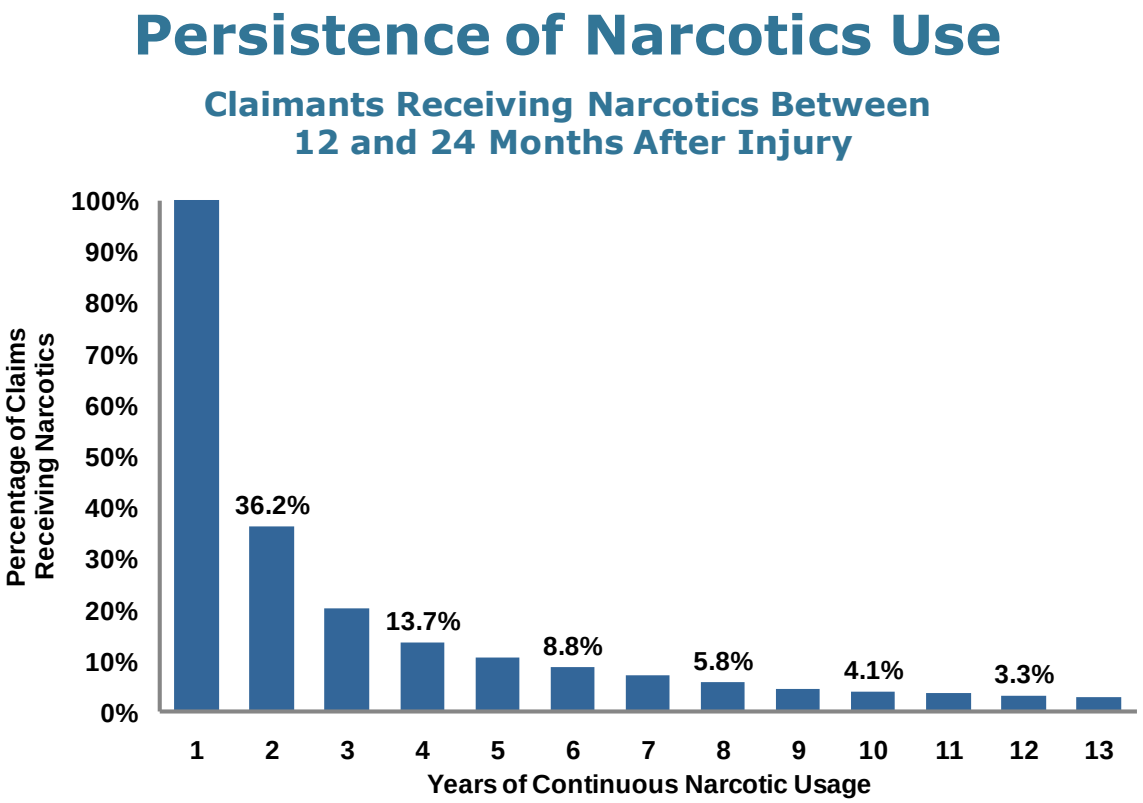


Exhibit 17

As the background section of this paper states, one of the potential serious adverse effects of prolonged narcotics use is drug dependence.[c] Exhibit 18 investigates the relationship between the number of narcotic prescriptions and substance abuse treatments. Since substance abuse treatments are not restricted to narcotics alone,[d] an unmeasurable portion of these treatments may be for nonnarcotic substances. However, the relationship between high narcotics use and substance abuse treatments, for whichever substance, is undeniable.

In Exhibit 18, "dependent" and "nondependent" mean:

- Dependent—"replaced the term 'drug addiction' and is defined as a state … resulting from the interaction between a living organism and a drug, characterized by behavioral and other responses that always include a compulsion to take the drug on a continuous or periodic basis" [10]
- Nondependent—"Excessive use of habit-forming medications." "The use of a drug for a reason other than intended or in a manner or in quantities other than directed." [11]

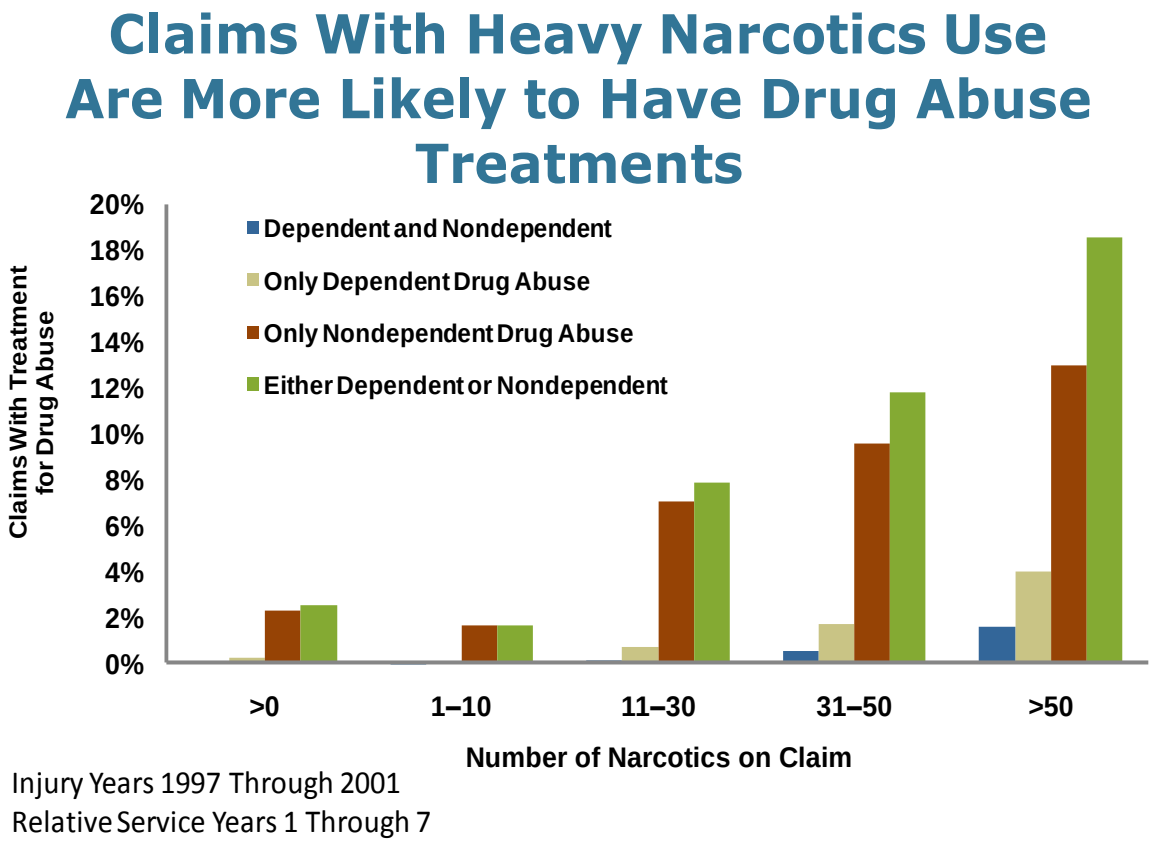


Exhibit 18

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

Credits

John Robertson and Lou Brown of Actuarial & Economic Services, Jim Stevens of Regulatory Services, and James Bonk of Data Quality Research, contributed to this study.

Notes

[a] The first relative service year consists of all services in the calendar year of the injury. The second relative service year consists of all the services provided in the calendar year following the year of injury, and so on. For example, if an injury occurs in November 1999, any treatments and prescriptions filled in 1999 are part of the first relative service year, and any treatments in 2000 would be in the second relative service year. Treatments in 2001 would be part of the third relative service year, and so on.

[b] WC looks at costs by injury year (the year of injury) because insurance benefits continue (potentially for many years) following the date of injury in WC. This “long-tail” feature of WC is distinct from most other lines of insurance coverage, which are normally confined to the 12-month policy year for which premium is charged.

The “long tail” nature of WC is critical and underscores the need for further research. Substantial quantities of medical service are routinely delivered for many years following the occurrence of a WC claim. As a result, estimates of the annual costs and reserves on serious claims must fully account for the compounding effect of medical inflation. For example, at an annual medical cost inflation of 10%, the annual cost of a fixed regimen of medical treatment will be nearly double the first year’s cost in the eighth year following the claim.

[c] In 1964, a World Health Organization (WHO) Expert Committee introduced the term *dependence* to replace the terms *addiction* and *habituation*. Drug addiction is defined as a state, psychic and sometimes also physical, resulting from the interaction between a living organism and a drug, characterized by behavioral and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present. A person may be dependent on more than one drug [10].

[d] In addition to opioids, ICD-9 Code 304 includes sedatives, hypnotics, or anxiolytics; cocaine; cannabis; amphetamines and other psychostimulants; hallucinogens; other specified drugs; and unspecified drugs. In addition to opioids, ICD-9 Code 305 includes alcohol; sedatives, hypnotics, or anxiolytics; cocaine; cannabis; hallucinogens; amphetamines or related acting sympathomimetics; antidepressants; tobacco; and other mixed or unspecified drugs.

References

[1] Gardiner Harris, "FDA to Place New Limits on Prescriptions of Narcotics," *New York Times*, February 9, 2009, http://www.nytimes.com/2009/02/10/health/policy/10fda.html.

[2] Roger Chou, et al. for the American Pain Society-American Academy of Pain Medicine Opioids Guidelines Panel, "Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain," *The Journal of Pain*, Volume10, Number 2, February, 2009, pp. 113–130.

[3] Jane Lipscomb Stone, Jane Derebery, Suzanne Novak, Peter N. Rogers, "The Ethics of Confronting Prescription Abuse in Workers' Compensation—The Defense Perspective."

[4] Tron Emptage, "Pain Drugs Put Big Hurt On WC Insurers," *National Underwriter*, May 4, 2009, http://www.property-casualty.com/Issues/2009/May%204%202009/Pages/Pain-Drugs-Put-Big-Hurt-On-WC-Insurers.aspx.

[5] John Scarborough, "The Opium Poppy in Hellenistic and Roman Medicine," in Roy Porter and Mikulas Teich, eds., *Drugs and Narcotics in History*, Cambridge University Press, 1995, pp. 4–23.

[6] Narcotics, US Department of Justice, US Drug Enforcement Administration, http://www.usdoj.gov/dea/concern/narcotics.html.

[7] "Risk Evaluation and Mitigation Strategies for Certain Opioid Drugs; Notice of Public Meeting," *Federal Register*; Volume 74, Number 74; Notices, Pages 17967–17970, Department of Health & Human Services, Food and Drug Administration, Docket No. FDA-2009-N-0143, http://www.fda.gov/OHRMS/DOCKETS/98fr/E9-8992.htm.

[8] "List of Narcotic Drugs Under International Control," 47th edition, International Narcotics Control Boards, December 2007. Available at http://www.incb.org/pdf/yellow_lists_all/47th_edition_dec_07_yellow-list_eng.pdf.

[9] Alex Swedlow, MHSA; Laura B. Gardner, MD, MPH, PhD; John Ireland, MHSA; Elizabeth Genovese, MD, MBA, FACOEM, FAADEP, "Pain Management and the Use of Opioids in the Treatment of Back Conditions in the California Workers' Compensation System," California Workers' Compensation Institute, June 2008.

[10] 2009 ICD-9-CM—Volume 1—Diagnosis Codes, 2009 ICD-9-CM—Diagnosis 304, ICD9Data.com, http://www.icd9data.com/2009/Volume1/290-319/300-316/304/default.htm.

[11] 2009 ICD-9-CM—Volume 1—Diagnosis Codes, 2009 ICD-9-CM—Diagnosis 305, ICD9Data.com, http://www.icd9data.com/2009/Volume1/290-319/300-316/305/default.htm.

APPENDIX A

List of Top 50 Narcotics by Drug Cost

Active Ingredients	Drug Name	% Paid	% Rx	Rank by $ Paid	Rank by # Rx
OXYCODONE	OXYCODONE HCL	12.2%	5.7%	2	4
(37.3%)	OXYCONTIN	11.9%	1.8%	3	6
	OXYCODONE W/ACETAMINOPHEN	7.0%	10.6%	5	2
	PERCOCET	3.5%	0.9%	10	11
	ENDOCET	2.4%	1.8%	12	7
	ROXICODONE	0.2%	0.1%	31	38
	ROXICET	0.1%	0.2%	39	22
	MAGNACET	0.1%	0.0%	43	55
	COMBUNOX	0.1%	0.0%	47	46
	ETH-OXYDOSE	0.1%	0.0%	49	56
HYDROCODONE	HYDROCODONE/ACETAMINOPHEN	19.9%	55.2%	1	1
(22.8%)	HYDROCODONE BIT-IBUPROFEN	0.6%	0.8%	18	15
	NORCO	0.6%	0.3%	19	20
	THERACODOPHEN-650	0.5%	0.2%	20	27
	LORTAB	0.4%	0.4%	23	18
	VICODIN ES	0.2%	0.3%	28	21
	VICODIN	0.1%	0.2%	32	24
	HYDROCODONE BITARTRATE	0.1%	0.0%	35	43
	LORCET 10/650	0.1%	0.0%	37	44
	XODOL 10/300	0.1%	0.0%	40	45
	THERACODOPHEN-LOW-90	0.1%	0.0%	41	54
	VICODIN HP	0.1%	0.0%	45	50
	VICOPROFEN	0.1%	0.0%	48	51
FENTANYL	FENTANYL	7.1%	1.7%	4	8
(11.8%)	DURAGESIC	4.7%	0.7%	7	16
FENTANYL CITRATE	ACTIQ	4.9%	0.1%	6	36
(10.8%)	FENTANYL CITRATE	4.2%	0.2%	8	26
	FENTORA	1.7%	0.1%	15	37
MORPHINE	KADIAN	3.7%	0.9%	9	12
(9.0%)	AVINZA	2.8%	0.8%	11	14
	MORPHINE SULFATE	2.3%	1.5%	14	9
	MS CONTIN	0.3%	0.1%	27	39
PROPOXYPHENE	PROPOXYPHENE NAPSYLATE W/APAP	2.4%	7.2%	13	3
(3.0%)	PROPOXYPHENE NAPSYLATE-APAP	0.4%	0.8%	25	13
	DARVOCET-N 100	0.1%	0.1%	33	31
	BALACET 325	0.1%	0.1%	34	40
	PROPOXACET-N 100	0.1%	0.1%	44	33
	DARVON-N	0.0%	0.0%	50	52

List of Top 50 Narcotics by Drug Cost

Active Ingredients	Drug Name	% Paid	% Rx	Rank by $ Paid	Rank by # Rx
OXYMORPHONE	OPANA ER	1.5%	0.3%	16	19
(1.9%)	OPANA	0.4%	0.1%	24	34
CODEINE	ACETAMINOPHEN W/CODEINE	0.7%	2.9%	17	5
BUPRENORPHINE	SUBOXONE	0.4%	0.1%	22	29
(0.6%)	SUBUTEX	0.2%	0.0%	29	48
HYDROMORPHONE	HYDROMORPHONE HCL	0.5%	0.6%	21	17
(0.6%)	DILAUDID	0.1%	0.1%	36	41
METHADONE	METHADONE HCL	0.3%	1.2%	26	10
PENTAZOCINE	PENTAZOCINE-NALOXONE HCL	0.2%	0.2%	30	23
MEPERIDINE	MEPERIDINE HCL	0.1%	0.1%	42	32
(0.1%)	MEPROZINE	0.1%	0.2%	46	25
BUTORPHANOL	BUTORPHANOL TARTRATE	0.1%	0.0%	38	53

Appendix B

FDA Risk Evaluation and Mitigation Strategies for Narcotics
Select Excerpts From an FDA Public Meeting Notice [7]

"The [FDA] has long been concerned about adverse events associated with [long-acting and extended-release narcotics] and has taken steps in cooperation with drug manufacturers to address these risks."

"FDA and drug manufacturers have taken steps to decrease abuse and misuse of long-acting opioids and extended-release opioids while seeking to ensure that they remain available for patients who suffer daily from chronic pain. Since 2001, FDA has required boxed warnings, the agency's strongest warning, on the labeling of long-acting opioid drugs to educate physicians and patients on the risks and proper uses of these products. The agency has also required risk management plans for many of these products. These plans have incorporated educational programs for prescribers, pharmacists, and patients, and surveillance systems to monitor for signals of increasing abuse, misuse, and diversion, as well as plans for intervention when these signals are noted. In addition, drug manufacturers have sought to incorporate features into their products intended to deter abuse. For example, the active ingredient may be incorporated into a matrix from which it cannot easily be extracted or that is not easily ground into powder. In other cases, an opioid antagonist is sequestered in the inner core of an extended-release tablet, designed to be released if the tablet is crushed or dissolved."

"Despite existing efforts to address the risks associated with opioid drugs, misuse and abuse are increasing. Data from multiple sources, including the Centers for Disease Control (CDC) and the Substance Abuse and Mental Health Services Administration (SAMHSA), indicate increasing misuse and abuse of prescription opioid analgesic medications over the past decade. For example, SAMHSA's National Survey on Drug Use and Health estimates that 11 million Americans over the age of 12, or 4.7 percent of that population, took pain relievers for nonmedical use in 2002. That number increased to 12.5 million, or 5.0 percent of the population over [the age of] 12, in 2007. Likewise, data compiled by SAMHSA show a significant increase from 2000 to 2006 in admissions to substance abuse treatment services for individuals abusing opioid analgesics. Much of this misuse has involved the extended-release opioid analgesics and methadone. To address this public health problem, the agency has indicated [that] it will require REMS [(Risk Evaluation and Mitigation Strategies)] for certain opioid products."

"The REMS would be intended to ensure that the benefits of these drugs continue to outweigh the risks associated with:

1) Use of high doses of long-acting opioids and extended-release opioid products in nonopioid tolerant and inappropriately selected individuals;
2) abuse
3) misuse
4) overdose, both accidental and intentional

REMS for opioids would likely include elements to assure safe use to ensure that prescribers, dispensers, and patients are aware of and understand the risks and how these products should be used."

"The elements to assure safe use must include one or more goals to mitigate a specific serious risk listed in the labeling of the drug. These elements may include the following requirements:

- Healthcare providers who prescribe the drug [must] have particular training or experience, or are specially certified
- Pharmacies, practitioners, or healthcare settings that dispense the drug are specially certified
- The drug is dispensed to patients only in certain healthcare settings
- The drug is dispensed to patients with evidence of safe use conditions, such as laboratory test results
- Each patient using the drug is subject to certain monitoring
- Each patient using the drug is enrolled in a registry"

Opioid Products That May Be Required to Have Risk Evaluation and Mitigation Strategies (REMS)
Brand-Name Products

Generic Name	Trade Name	Applicant/Sponsors
Fentanyl	Duragesic Extended-Release Transdermal System	Ortho McNeil Janssen
Hydromorphone	*Palladone Extended-Release Capsules	Purdue Pharma
Methadone	Dolophine Tablets	Roxanne
Morphine	Avinza Extended-Release Capsules	King Pharms
Morphine	Kadian Extended-Release Capsules	Actavis
Morphine	MS Contin Extended-Release Tablets	Purdue Pharma
Morphine	Oramorph Extended-Release Tablets	Xanodyne Pharms
Oxycodone	OxyContin Extended-Release Tablets	Purdue Pharma
Oxymorphone	Opana Extended-Release Tablets	Endo Pharma

* No longer being marketed, but is still approved.

Generic Products

Generic Name	Drug Name	Applicant/Sponsors
Fentanyl	Fentanyl Extended-Release Transdermal System	Actavis
Fentanyl	Fentanyl Extended-Release Transdermal System	Lavipharm Labs
Fentanyl	Fentanyl Extended-Release Transdermal System	Mylan Technologies
Fentanyl	Fentanyl Extended-Release Transdermal System	Teva Pharms
Fentanyl	Fentanyl Extended-Release Transdermal System	Watson
Methadone	Methadose Tablets	Mallinckrodt
Methadone	Methadone HCL Tablets	Mallinckrodt
Methadone	Methadone HCL Tablets	Sandoz
Morphine	Morphine Sulfate Extended-Release Tablets	Endo
Morphine	Morphine Sulfate Extended-Release Tablets	KV Pharmaceuticals
Morphine	Morphine Sulfate Extended-Release Tablets	Mallinckrodt
Morphine	Morphine Sulfate Extended-Release Tablets	Watson Labs
Oxycodone	Oxycodone Extended-Release Tablets	Mallinckrodt
Oxycodone	**Oxycodone Extended-Release Tablets	Impax Labs
Oxycodone	**Oxycodone Extended-Release Tablets	Teva

** Discontinued products.

Source: US Food and Drug Administration http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm163654.htm