



IMPACT OF THE TEXAS PHARMACY CLOSED FORMULARY

Texas Department of Insurance

Workers' Compensation Research and Evaluation Group

July 2016

DATA AND METHODS

- ★ New injury claims are subject to the pharmacy closed formulary beginning September 1, 2011.
- ★ Legacy claims are subject to the formulary beginning September 1, 2013.
- ★ Fiscal injury year (FIY) from September to August
 - For example, FIY 2011 covers new injury claims from September 1, 2010 to August 31, 2011.
 - Services are considered for 24 months after injury. For FIY 2011 claims, service dates are from September 1, 2010 to August 31, 2013.
 - Formulary is in effect from FIY 2012.
 - FIY data accounts for less than half of the pharmacy services, but it is used to highlight trends in new claims.
- ★ Fiscal service year (FSY) from September to August
 - For example, FSY 2014 covers all services for all claims from September 1, 2013 to August 31, 2014.
 - Formulary is in effect from FSY 2012 for new claims and from FSY 2014 for legacy claims.



DATA AND METHODS

- ★ “N-drugs” are status “N” (Not Recommended) drugs.
 - “N” drug status list at Appendix A, *ODG Workers' Compensation Drug Formulary*, from the *Official Disability Guidelines - Treatment in Workers' Comp* (ODG)
 - Approximately 150 drugs that require carrier preauthorization
 - Any drug that may be treated as an “N” drug in only a certain circumstance is considered as an N-drug in this report.
 - Individual prescriptions are identified by National Drug Code (NDC).
- ★ “Other drugs” are those with a status “Y” or those that are not identified by NDC.
- ★ Key measures include metrics used in earlier preliminary reports: claim counts, prescription costs, prescription utilization patterns, generic substitution rates, cost and utilization by drug group, most prescribed drugs.
- ★ In addition, this report examines other factors related to the formulary:
 - Pharmacy services denial reasons
 - Substitution of Other drugs for N-drugs
 - Substitution of physical medicine services for N-drugs
 - Opioid and N-drug utilization by daily dosage



SUMMARY OF KEY FINDINGS

★ Pharmacy services for new claims (by injury year)

- Between FIY 2011 (pre-formulary) and FIY 2012 (post-formulary), the number of injured employees receiving N-drugs fell by 67 percent.
- N-drug costs fell by 78 percent, and N-drug costs as a percentage of all drug costs decreased by 74 percent (from 20 percent of total to 5 percent of total).
- The number of injured employees receiving Other drugs fell by 1 percent.
- The share of N-drug claims among all claims fell from 23 percent to 8 percent.
- The total number of prescriptions for N-drugs fell by 77 percent while it fell by 3 percent for Other drugs.
- The average number of N-drug prescriptions per claim fell by 32 percent.
- The number of N-drug prescriptions fell by 70+ percent across all drug groups.



SUMMARY OF KEY FINDINGS (CONTINUED)

- ★ Pharmacy services for all claims (new and legacy claims by service year)
 - Between FSY 2011 (pre-formulary) and FSY 2014 (post-formulary for legacy claims), the number of injured employees receiving N-drugs fell by 83 percent. Those receiving Other drugs fell by 12 percent.
 - The number of N-drug prescriptions fell by 85 percent. Other drug prescriptions fell by 14 percent.
 - N-drug costs fell by 80 percent while Other drug costs fell by 5 percent.
 - The number of N-drug prescriptions decreased by 80+ percent in all drug groups. Costs fell by 70+ percent in all drug groups. Prescriptions and costs of Other drugs decreased by between 5 percent and 25 percent.
 - Generic drug utilization rates for N-drugs increased from 58 percent to 71 percent of the prescriptions. Generics accounted for 23 percent of the cost pre-formulary, and 35 percent post-formulary.
 - For Other drugs, generic utilization in prescription increased from 83 percent to 89 percent. Cost shares increased from 62 percent to 66 percent.
 - No N-drugs are in the top ten most prescribed drugs.



SUMMARY OF KEY FINDINGS (CONTINUED)

★ Pharmacy services denial reasons

- 7.2 percent of the pharmacy bills were denied in FSY 2011. The denial rate increased to 9.1 percent in FSY 2014.
- The most common reasons for denial in 2011 were ‘denial after review’ and ‘unnecessary/unsupported/document missing’.
- In 2014, the most common reasons were ‘fee schedule adjustment’ and ‘preauthorization not obtained.’
- For bills that are not denied, pay rates decreased from 86 percent of charged in 2011 to 77 percent of charged in 2015.



SUMMARY OF KEY FINDINGS (CONTINUED)

- ★ Substitution effects of the pharmacy closed formulary
 - Analyzing a cohort of FIY 2011 claims, N-drug usage decreased in 85 percent of the claims after the formulary. The use of Other drugs fell by 38 percent.
 - There is no indication that Other drugs are substituted for N-drugs.
 - 39 percent of the cohort received physical medicine services before the formulary. After the formulary, only 15 percent of the cohort received physical medicine services.
 - Overall, physical medicine utilization did not change significantly.



SUMMARY OF KEY FINDINGS (CONTINUED)

★ Pharmacy services of opioids

- Opioid costs decreased from 27 percent of the total pharmacy costs in 2009 to 18 percent in 2015.
- N-drug opioid prescriptions with 90+ morphine milligram equivalents (MMEs) per day decreased from 60 percent in 2009 to 57 percent in 2015.
- Other drug opioid prescriptions with 90+ morphine milligram equivalents (MMEs) per day decreased from 9 percent in 2009 to 7 percent in 2012, but increased to 9 percent in 2015.
- The number of claims receiving N-drug opioids with 90+ MMEs/day decreased from almost 15,000 in 2009 to less than 500 in 2015.
- The number of claims receiving Other- drug opioids with 90+ MMEs/day decreased from approximately 8,400 in 2009 to less than 5,000 in 2015.



PHARMACY SERVICES BY INJURY YEAR (NEW CLAIMS ONLY, WITH SERVICES IN 24 MONTHS AFTER INJURY)



NUMBER OF CLAIMS RECEIVING PHARMACEUTICALS, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
All claims	105,624	103,331	105,963	103,359	95,983	-2%
N-drugs						
Number of claims	31,556	29,835	24,286	8,120	4,181	-67%
<i>Percent of all claims</i>	30%	29%	23%	8%	4%	-66%
Other drugs						
Number of claims with at least one Other drug	101,947	99,746	103,219	102,663	95,622	-1%
Number of claims with Other drugs only (no N-drugs)	74,068	73,496	81,677	95,239	91,802	17%
<i>Percent of all claims</i>	70%	71%	77%	92%	96%	20%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



COST OF N-DRUGS, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
Total cost (in '000)	\$49,617	\$46,263	\$44,545	\$38,020	\$36,671	-15%
Total cost of N-drug prescriptions (in '000)	\$11,852	\$11,294	\$8,913	\$1,950	\$1,007	-78%
<i>N-drug cost as a percentage of total drug costs</i>	24%	24%	20%	5%	3%	-74%
Total number of N-drug prescriptions	113,333	98,251	74,081	16,974	8,979	-77%
<i>Average cost per N-drug prescription</i>	\$105	\$115	\$120	\$115	\$112	-5%
Total number of N-drug claims	31,556	29,835	24,286	8,120	4,181	-67%
<i>Average N-drug cost per claim</i>	\$376	\$379	\$367	\$240	\$241	-35%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



COST OF OTHER DRUGS, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
Total cost (in '000)	\$49,617	\$46,263	\$44,545	\$38,020	\$36,671	-15%
Total cost of Other drug prescriptions (in '000)	\$37,764	\$34,969	\$35,632	\$36,070	\$35,663	1%
<i>Other drug cost as a percentage of total drug costs</i>	76%	76%	80%	95%	97%	19%
Total number of Other drug prescriptions	575,131	559,253	591,017	576,221	536,889	-3%
<i>Average cost per Other drug prescription</i>	\$66	\$63	\$60	\$63	\$66	4%
Total number of Other drug claims	101,947	99,746	103,219	102,663	95,622	-1%
<i>Average Other drug cost per claim</i>	\$370	\$351	\$345	\$351	\$373	2%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



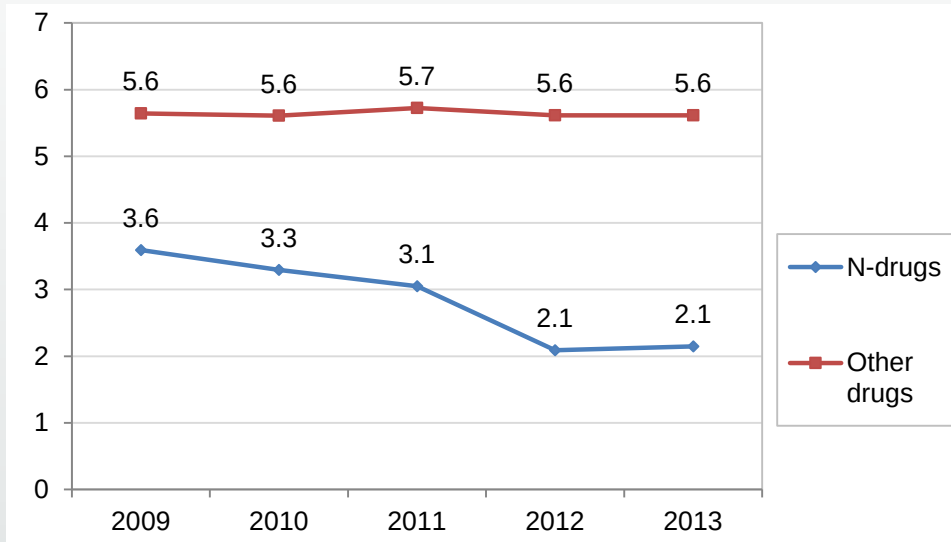
NUMBER AND SHARE OF PRESCRIPTIONS, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
Total number of all prescriptions	688,464	657,504	665,098	593,195	545,868	-11%
N-drugs						
Number of prescriptions	113,333	98,251	74,081	16,974	8,979	-77%
<i>N-drug prescriptions as a percent of all prescriptions</i>	16%	15%	11%	3%	2%	-74%
Other drugs						
Number of prescriptions	575,131	559,253	591,017	576,221	536,889	-3%
<i>Other drug prescriptions as a percent of all prescriptions</i>	84%	85%	89%	97%	98%	9%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF PRESCRIPTIONS PER CLAIM, BY INJURY YEAR



Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF PRESCRIPTIONS BY DRUG GROUP, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
N-drugs						
Analgesics - Anti-Inflammatory	16,631	17,109	17,048	3,618	1,247	-79%
Analgesics - Opioid	32,381	24,716	9,808	1,898	1,022	-81%
Central Nervous System Drugs	20,033	16,101	15,307	3,962	2,947	-74%
Musculoskeletal Therapy Agents	22,604	18,678	12,586	1,631	699	-87%
Others	21,684	21,647	19,332	5,865	3,064	-70%
Subtotal	113,333	98,251	74,081	16,974	8,979	-77%
Other drugs						
Analgesics - Anti-Inflammatory	139,616	138,233	142,742	143,341	134,124	0%
Analgesics - Opioid	209,637	203,218	219,362	201,467	178,146	-8%
Central Nervous System Drugs	42,248	39,571	39,597	39,239	36,728	-1%
Musculoskeletal Therapy Agents	77,485	78,118	82,753	82,454	76,634	0%
Others	106,145	100,113	106,563	109,720	111,257	3%
Subtotal	575,131	559,253	591,017	576,221	536,889	-3%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TOTAL COST BY DRUG GROUP, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
N-drugs						
Analgesics - Anti-Inflammatory	\$1,875,446	\$2,217,787	\$2,022,143	\$321,057	\$119,521	-84%
Analgesics - Opioid	\$1,695,178	\$1,549,846	\$1,437,657	\$323,762	\$157,891	-77%
Central Nervous System Drugs	\$1,597,975	\$1,190,910	\$1,140,268	\$369,447	\$242,290	-68%
Musculoskeletal Therapy Agents	\$2,645,841	\$2,148,469	\$1,083,713	\$110,957	\$67,521	-90%
Others	\$4,038,036	\$4,186,494	\$3,228,836	\$824,930	\$419,810	-74%
Subtotal	\$11,852,476	\$11,293,506	\$8,912,618	\$1,950,151	\$1,007,033	-78%
Other drugs						
Analgesics - Anti-Inflammatory	\$9,845,680	\$9,565,209	\$9,463,724	\$9,454,778	\$8,591,876	0%
Analgesics - Opioid	\$8,691,772	\$7,653,588	\$7,485,469	\$6,535,543	\$5,790,554	-13%
Central Nervous System Drugs	\$5,898,569	\$5,574,769	\$5,692,436	\$5,655,676	\$5,287,532	-1%
Musculoskeletal Therapy Agents	\$5,912,757	\$5,172,279	\$4,832,016	\$4,422,102	\$3,867,107	-8%
Others	\$7,415,495	\$7,003,320	\$8,158,778	\$10,001,582	\$12,126,412	23%
Subtotal	\$37,764,273	\$34,969,165	\$35,632,424	\$36,069,681	\$35,663,481	1%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF CLAIMS BY DRUG GROUP, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
N-drugs						
Analgesics - Anti-Inflammatory	8,584	9,020	9,553	2,581	991	-73%
Analgesics - Opioid	13,956	12,243	4,337	978	561	-77%
Central Nervous System Drugs	4,364	3,770	3,784	1,289	879	-66%
Musculoskeletal Therapy Agents	7,902	6,578	4,684	929	395	-80%
Others	8,251	8,472	8,429	3,412	1,856	-60%
Other drugs						
Analgesics - Anti-Inflammatory	60,279	59,164	60,268	61,832	58,291	3%
Analgesics - Opioid	52,786	51,638	57,637	57,504	52,146	0%
Central Nervous System Drugs	8,203	7,526	7,624	7,519	7,095	-1%
Musculoskeletal Therapy Agents	30,886	32,103	33,694	34,434	31,160	2%
Others	42,565	41,223	42,498	44,490	43,659	5%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



AVERAGE COST PER CLAIM BY DRUG GROUP, BY INJURY YEAR

	Fiscal injury year					2011-2012 percentage change
	2009	2010	2011	2012	2013	
N-drugs						
Analgesics - Anti-Inflammatory	\$218	\$246	\$212	\$124	\$121	-41%
Analgesics - Opioid	\$121	\$127	\$331	\$331	\$281	0%
Central Nervous System Drugs	\$366	\$316	\$301	\$287	\$276	-5%
Musculoskeletal Therapy Agents	\$335	\$327	\$231	\$119	\$171	-48%
Others	\$489	\$494	\$383	\$242	\$226	-37%
Other drugs						
Analgesics - Anti-Inflammatory	\$163	\$162	\$157	\$153	\$147	-3%
Analgesics - Opioid	\$165	\$148	\$130	\$114	\$111	-12%
Central Nervous System Drugs	\$719	\$741	\$747	\$752	\$745	1%
Musculoskeletal Therapy Agents	\$191	\$161	\$143	\$128	\$124	-10%
Others	\$174	\$170	\$192	\$225	\$278	17%

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



PHARMACY SERVICES BY SERVICE YEAR (ALL NEW AND LEGACY CLAIMS)



TOTAL COST BY “N” DRUG STATUS, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF PRESCRIPTIONS AND CLAIMS BY “N” DRUG STATUS, BY SERVICE YEAR

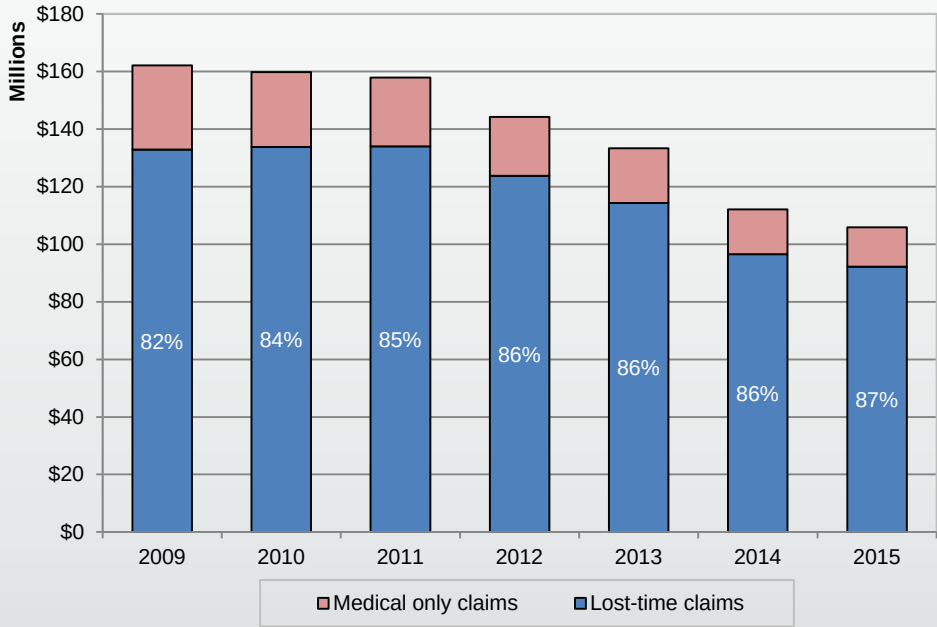
Fiscal service year	Number of Rx		Number of claims		Cost		Cost per Rx	
	N-drugs	Other drugs	N-drugs	Other drugs	N-drugs	Other drugs	N-drugs	Other drugs
2009	335,077	1,186,198	59,952	159,062	\$51,006,149	\$111,128,666	\$152	\$94
2010	321,501	1,158,220	57,830	154,221	\$52,360,103	\$107,494,833	\$163	\$93
2011	278,955	1,187,527	49,006	153,875	\$50,759,286	\$107,188,896	\$182	\$90
2012	197,169	1,155,590	29,743	151,673	\$39,428,037	\$104,816,056	\$200	\$91
2013	129,485	1,070,659	18,971	141,968	\$28,550,025	\$104,747,764	\$220	\$98
2014	37,983	1,020,103	8,496	135,809	\$9,993,590	\$102,090,009	\$263	\$100
2015	26,701	880,265	5,851	124,962	\$7,215,930	\$98,714,027	\$270	\$112

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TOTAL COST AND COST SHARES BY CLAIM TYPE, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.
Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF PRESCRIPTIONS AND COSTS BY DRUG GROUP, N-DRUGS, BY SERVICE YEAR

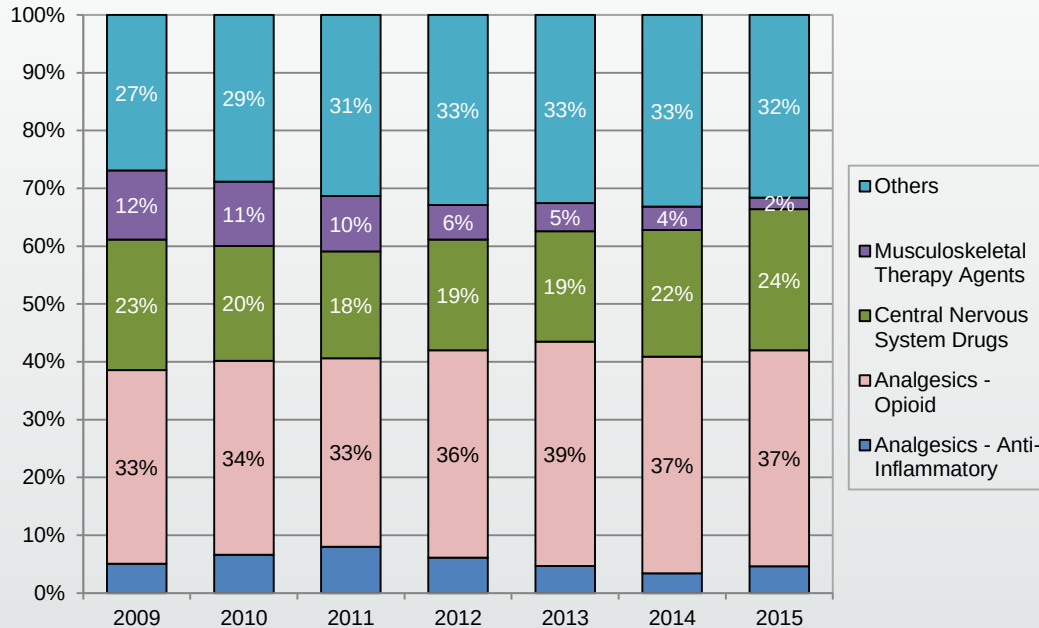
Drug group	2009	2010	2011	2012	2013	2014	2015
Number of prescriptions							
Analgesics - Anti-Inflammatory	23,673	25,845	28,505	15,531	7,430	1,595	1,148
Analgesics - Opioid	82,854	79,641	48,981	33,606	24,659	7,480	5,191
Central Nervous System Drugs	107,794	97,564	90,416	71,130	50,237	16,149	12,269
Musculoskeletal Therapy Agents	61,481	54,741	46,156	28,710	14,712	2,404	1,073
Others	59,275	63,710	64,897	48,192	32,447	10,355	7,020
Cost							
Analgesics - Anti-Inflammatory	\$2,597,620	\$3,466,471	\$4,076,015	\$2,425,922	\$1,343,266	\$339,081	\$333,987
Analgesics - Opioid	\$17,069,283	\$17,568,185	\$16,544,545	\$14,126,403	\$11,076,866	\$3,746,912	\$2,696,618
Central Nervous System Drugs	\$11,521,214	\$10,403,726	\$9,365,781	\$7,547,699	\$5,454,705	\$2,193,594	\$1,762,471
Musculoskeletal Therapy Agents	\$6,091,412	\$5,813,022	\$4,873,152	\$2,374,212	\$1,391,406	\$400,620	\$141,601
Others	\$13,726,621	\$15,108,698	\$15,899,793	\$12,953,801	\$9,283,783	\$3,313,382	\$2,281,253

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



COST SHARES BY DRUG GROUP, N-DRUGS, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF PRESCRIPTIONS AND COSTS BY DRUG GROUP, OTHER DRUGS, BY SERVICE YEAR

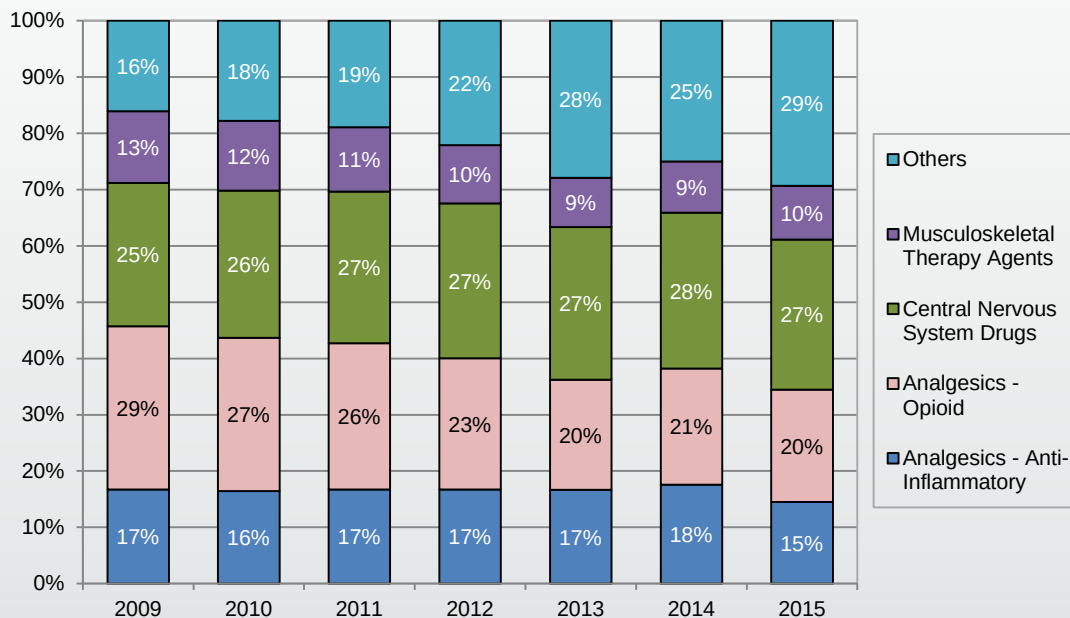
Drug group	2009	2010	2011	2012	2013	2014	2015
Number of prescriptions							
Analgesics - Anti-Inflammatory	216,683	209,482	212,105	210,260	198,464	197,362	170,287
Analgesics - Opioid	435,609	422,183	444,056	414,039	364,447	352,493	275,258
Central Nervous System Drugs	181,032	178,076	177,480	164,784	154,268	149,922	135,433
Musculoskeletal Therapy Agents	145,807	146,330	148,078	143,686	133,732	139,484	125,985
Others	207,067	202,149	205,808	222,821	219,748	180,842	173,302
Cost							
Analgesics - Anti-Inflammatory	\$18,582,373	\$17,674,537	\$17,927,320	\$17,534,821	\$17,436,822	\$17,964,657	\$14,343,746
Analgesics - Opioid	\$32,224,877	\$29,302,828	\$27,859,555	\$24,456,770	\$20,531,913	\$21,048,823	\$19,692,063
Central Nervous System Drugs	\$28,329,578	\$28,057,091	\$28,882,404	\$28,817,865	\$28,380,702	\$28,279,407	\$26,303,105
Musculoskeletal Therapy Agents	\$14,137,217	\$13,331,891	\$12,233,505	\$10,812,286	\$9,193,856	\$9,295,915	\$9,454,916
Others	\$17,854,621	\$19,128,486	\$20,286,112	\$23,194,314	\$29,204,471	\$25,501,207	\$28,920,198

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



COST SHARES BY DRUG GROUP, OTHER DRUGS, BY SERVICE YEAR

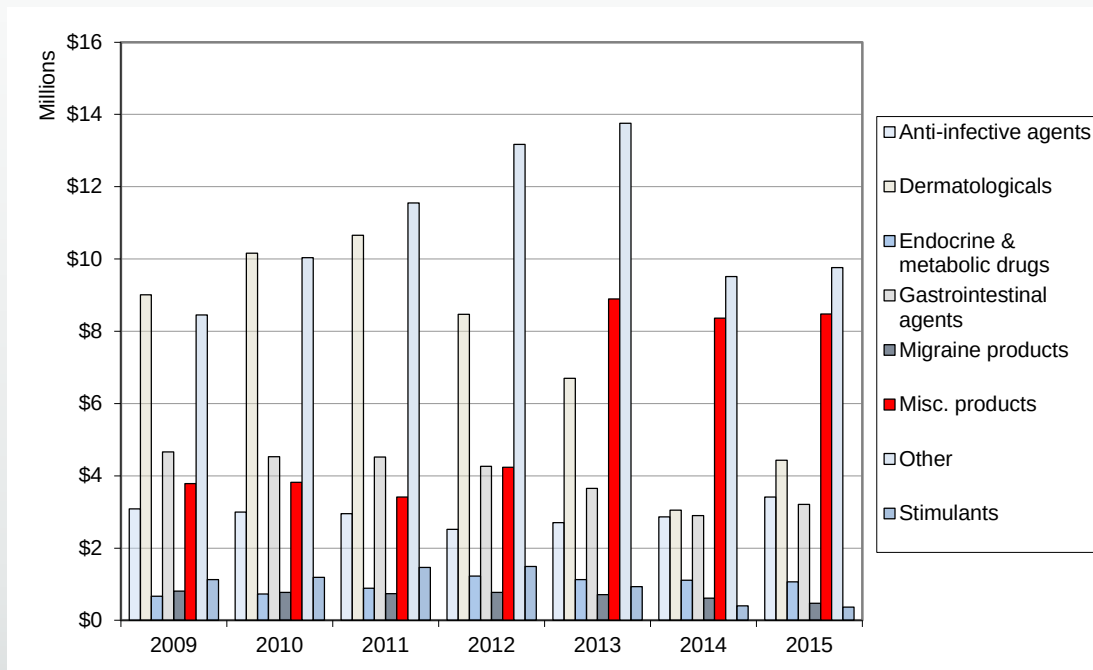


Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



DETAILS OF 'OTHERS' DRUG GROUP: COST BY DRUG SUBCLASS, BY SERVICE YEAR



Notes: 'Others' in both N-drugs and Other drugs are combined.

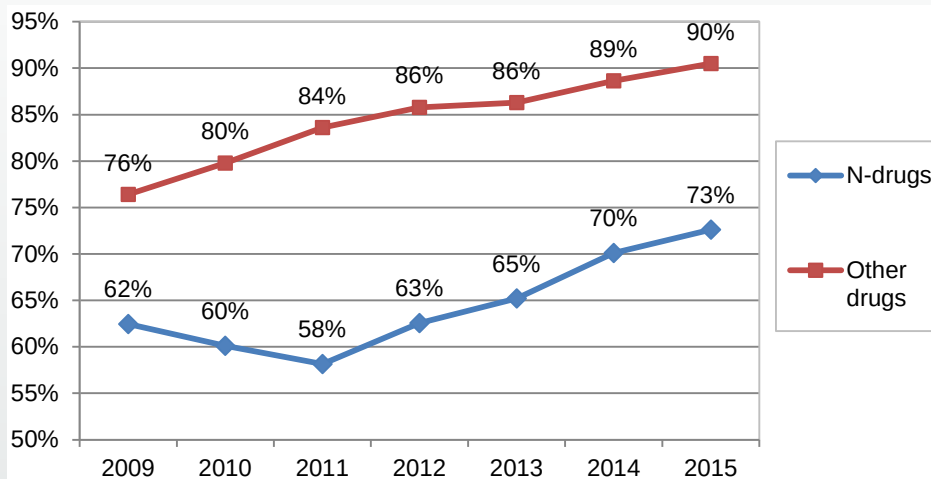
Miscellaneous products include chemicals used in compounded drugs.

Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



GENERIC UTILIZATION RATES BY PRESCRIPTION, BY SERVICE YEAR



Number of Prescriptions

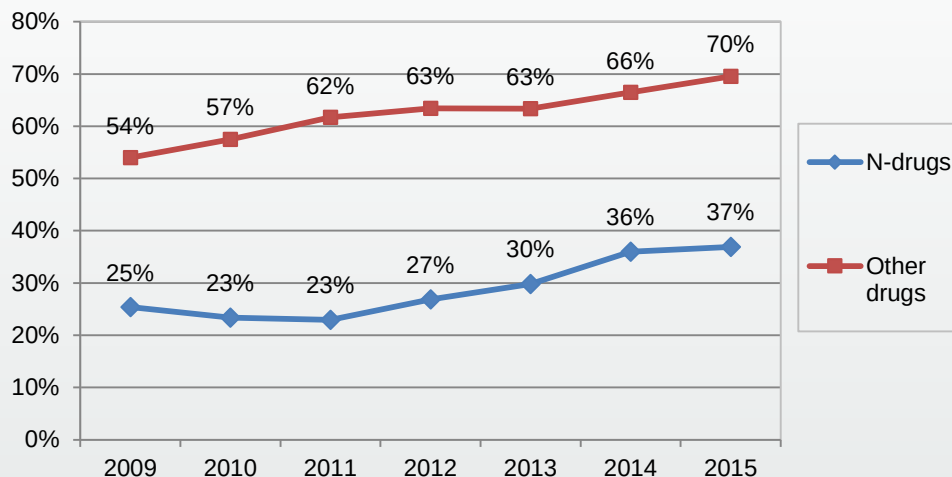
	2009	2010	2011	2012	2013	2014	2015
N-drugs brand	125,761	128,293	116,708	73,795	45,026	11,353	7,310
N-drugs generic	209,316	193,207	162,247	123,374	84,458	26,628	19,370
Other brand	272,967	226,170	187,917	157,537	139,069	113,870	82,041
Other generic	883,679	892,633	959,534	950,920	875,736	889,483	780,731

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



GENERIC UTILIZATION RATES BY COST, BY SERVICE YEAR



Total Cost

	2009	2010	2011	2012	2013	2014	2015
N-drugs brand	\$38,072,372	\$40,114,555	\$39,105,637	\$28,851,374	\$20,037,766	\$6,399,495	\$4,550,384
N-drugs generic	\$12,933,778	\$12,245,197	\$11,653,649	\$10,576,663	\$8,512,224	\$3,593,994	\$2,659,911
Other brand	\$49,871,049	\$43,959,832	\$39,189,743	\$35,913,237	\$35,704,359	\$33,215,109	\$28,956,215
Other generic	\$58,540,639	\$59,469,308	\$63,072,593	\$62,299,657	\$61,685,696	\$65,850,934	\$66,207,368

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TEN MOST FREQUENTLY PRESCRIBED N-DRUGS IN FSY 2011

Rank	Drug name	Drug group	Number of Rx	Total cost
1	CARISOPRODOL	Musculoskeletal Therapy Agents	35,824	\$1,651,068
2	LIDODERM	Others	18,838	\$6,056,275
3	ALPRAZOLAM	Central Nervous System Drugs	13,063	\$673,274
4	OXYCONTIN	Analgesics - Opioid	12,492	\$7,911,515
5	VOLTAREN	Others	11,846	\$1,118,000
6	DIAZEPAM	Central Nervous System Drugs	10,774	\$139,480
7	CLONAZEPAM	Central Nervous System Drugs	9,726	\$374,156
8	PROPOXYPHENE-N/ ACETAMINOPEN	Analgesics - Opioid	9,024	\$269,455
9	NEXIUM	Others	7,424	\$1,662,810
10	PROMETHAZINE HCL	Others	7,228	\$156,699

Note: Top ten drugs accounted for 46 percent of prescriptions and 39% of cost of N-drugs in 2011.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TEN MOST FREQUENTLY PRESCRIBED N-DRUGS IN FSY 2015

Rank	Drug name	Drug group	Number of Rx	Total cost
1	ESCITALOPRAM OXALATE	Central Nervous System Drugs	1,771	\$213,406
2	OXYCONTIN	Analgesics - Opioid	1,757	\$1,250,013
3	SERTRALINE HCL	Central Nervous System Drugs	1,756	\$127,733
4	PROMETHAZINE HCL	Others	1,658	\$23,291
5	TRAZODONE HCL	Central Nervous System Drugs	1,429	\$34,291
6	LIDOCAINE	Others	1,142	\$334,397
7	CLONAZEPAM	Central Nervous System Drugs	883	\$27,925
8	TOPIRAMATE	Central Nervous System Drugs	867	\$214,408
9	DIAZEPAM	Central Nervous System Drugs	817	\$7,846
10	CARISOPRODOL	Musculoskeletal Therapy Agents	815	\$24,009

Note: Top ten drugs accounted for 42 percent of prescriptions and 31% of cost of N-drugs in 2015.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TEN MOST FREQUENTLY PRESCRIBED OTHER DRUGS IN FSY 2011

Rank	Drug name	Drug group	Number of Rx	Total cost
1	HYDROCODONE/ACETAMINOPHEN	Analgesics - Opioid	314,449	\$12,004,754
2	CYCLOBENZAPRINE HCL	Musculoskeletal Therapy Agents	74,845	\$3,126,650
3	TRAMADOL HCL	Analgesics - Opioid	70,217	\$3,787,898
4	IBUPROFEN	Analgesics - Anti-Inflammatory	59,908	\$1,082,266
5	NAPROXEN	Analgesics - Anti-Inflammatory	50,620	\$2,435,653
6	LYRICA	Central Nervous System Drugs	46,095	\$9,574,450
7	GABAPENTIN	Central Nervous System Drugs	45,441	\$5,950,615
8	Unspecified	Others	43,351	\$4,926,560
9	CELEBREX	Analgesics - Anti-Inflammatory	40,459	\$7,228,684
10	MELOXICAM	Analgesics - Anti-Inflammatory	34,602	\$3,840,741

Notes: Top ten drugs accounted for 62 percent of prescriptions and 50 percent of cost of Other drugs in 2011.

'Unspecified' drugs have missing data and/or unmatched National Drug Codes.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TEN MOST FREQUENTLY PRESCRIBED OTHER DRUGS IN FSY 2015

Rank	Drug name	Drug group	Number of Rx	Total cost
1	HYDROCODONE/ACETAMINOPHEN	Analgesics - Opioid	114,318	\$5,974,955
2	TRAMADOL HCL	Analgesics - Opioid	76,367	\$2,912,731
3	CYCLOBENZAPRINE HCL	Musculoskeletal Therapy Agents	64,218	\$2,069,304
4	IBUPROFEN	Analgesics - Anti-Inflammatory	55,307	\$1,474,402
5	GABAPENTIN	Central Nervous System Drugs	48,034	\$5,442,163
6	NAPROXEN	Analgesics - Anti-Inflammatory	46,554	\$1,646,438
7	MELOXICAM	Analgesics - Anti-Inflammatory	34,184	\$2,983,950
8	ACETAMINOPHEN/CODEINE #3	Analgesics - Opioid	29,894	\$435,444
9	LYRICA	Central Nervous System Drugs	29,868	\$11,442,890
10	TIZANIDINE HCL	Musculoskeletal Therapy Agents	24,671	\$2,232,810

Note: Top ten drugs accounted for 55 percent of prescriptions and 37 percent of cost of Other drugs in 2015.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TEN MOST COSTLY DRUGS BY TOTAL COST IN FSY 2011 AND FSY 2015

FSY 2011

Rank	Drug name	Drug group	Total cost	Number of Rx	Cost/Rx
1	HYDROCODONE/ACETAMINOPHEN	Analgesics - Opioid	\$12,004,754	314,449	\$38
2	LYRICA	Central Nervous System Drugs	\$9,574,450	46,095	\$208
3	OXYCONTIN (N-drug)	Analgesics - Opioid	\$7,911,515	12,492	\$633
4	CELEBREX	Analgesics - Anti-Inflammatory	\$7,228,684	40,459	\$179
5	LIDODERM (N-drug)	Others	\$6,056,275	18,838	\$321
6	GABAPENTIN	Central Nervous System Drugs	\$5,950,615	45,441	\$131
7	CYMBALTA	Central Nervous System Drugs	\$5,644,662	25,287	\$223
8	Unspecified	Others	\$4,926,560	43,351	\$114
9	MELOXICAM	Analgesics - Anti-Inflammatory	\$3,840,741	34,602	\$111
10	TRAMADOL HCL	Analgesics - Opioid	\$3,787,898	70,217	\$54

FSY 2015

Rank	Drug name	Drug group	Total cost	Number of Rx	Cost/Rx
1	LYRICA	Central Nervous System Drugs	\$11,442,890	29,868	\$383
2	HYDROCODONE/ACETAMINOPHEN	Analgesics - Opioid	\$5,974,955	114,318	\$52
3	GABAPENTIN	Central Nervous System Drugs	\$5,442,163	48,034	\$113
4	DULOXETINE HCL	Central Nervous System Drugs	\$4,692,192	18,796	\$250
5	Unspecified	Others	\$3,550,444	21,066	\$169
6	MELOXICAM	Analgesics - Anti-Inflammatory	\$2,983,950	34,184	\$87
7	TRAMADOL HCL	Analgesics - Opioid	\$2,912,731	76,367	\$38
8	CELECOXIB	Analgesics - Anti-Inflammatory	\$2,514,610	10,486	\$240
9	GABAPENTIN	Others	\$2,443,531	7,934	\$308
10	BACLOFEN	Musculoskeletal Therapy Agents	\$2,411,502	17,814	\$135

Notes: Only Oxycontin and Lidoderm are N-drugs. 'Unspecified' drugs have missing data and/or unmatched National Drug Codes.
 Service year 2015 data may be incomplete and subject to change.
 Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



LEGACY CLAIM TRANSITION TO THE CLOSED FORMULARY



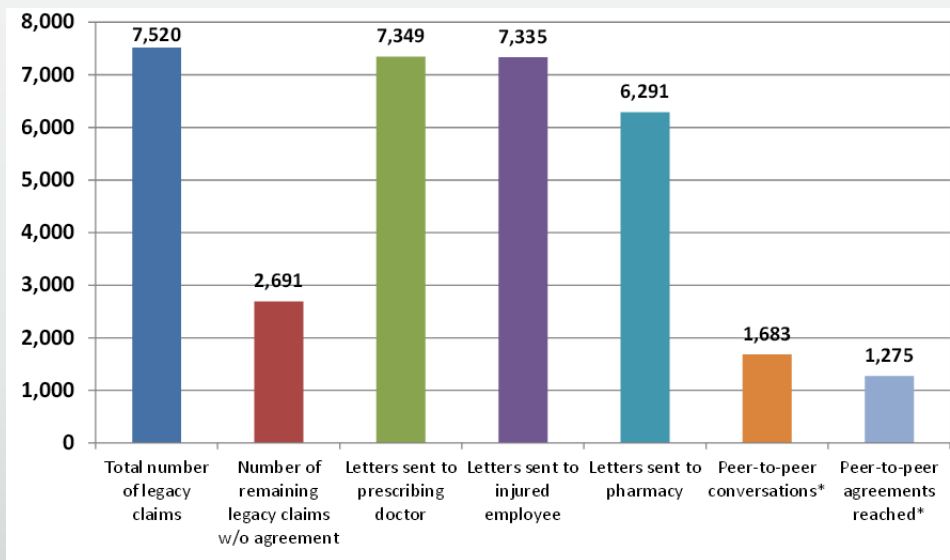
FORMULARY IMPLEMENTATION FOR LEGACY CLAIMS

- ★ Claims with injury dates before September 1, 2011 (legacy claims) were subject to the open formulary until the closed formulary became effective for all claims on September 1, 2013.
- ★ To ensure continuity of care for legacy claims, insurance carriers and prescribing doctors may enter an agreement regarding the application of the closed formulary.
- ★ A prescribed drug excluded from the pharmacy closed formulary provided to the injured employee as a result of the agreement is not subject to retrospective utilization review of medical necessity.
- ★ Data Calls were carried out from March 2013 through August 2013 to monitor legacy claims with prescriptions excluded by the closed formulary.



LEGACY CLAIMS DATA CALL RESULTS (AUGUST 2013)

- ★ Of 7,520 identified legacy claims with N-drug prescriptions 01 Sept. 2012 – 31 Aug. 2013,
 - N-drugs were no longer prescribed for 3,554 claims (47 percent);
 - agreements reached for 1,275 claims (17 percent); and
 - the remaining 2,691 claims (36 percent) were without agreements, still receiving N-drugs, and would be subject to the formulary beginning September 1, 2013.



Source: Self-reported data from selected insurance carriers from the Insurance Carrier Pharmacy Closed Formulary Data Call, Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2013.



REMEDIES FOR LEGACY CLAIMS UNDER THE CLOSED FORMULARY

- ★ Prescribing doctor or pharmacy may obtain a medical interlocutory order (MIO) when preauthorization of previously prescribed drugs is denied.
- ★ An MIO allows continued uses of the drug throughout the duration of the appeals/dispute process.
- ★ As of May 2016, 110 MIOs (for 57 claims) had been requested; 59 of these were approved by DWC and 37 were denied.
- ★ The MIO data indicates that the number of claims with continuity of care disputes is 57, representing less than 2 percent of the claims estimated by the Data Calls as receiving N-drugs without agreements between carriers and prescribing doctors.

MIO request status (Sept. 2013 – May 2016)	Count	Subsequently rescinded
Approved	59	16
Denied	37	NA
Withdrawn (before approval or denial)	4	NA
Total	110	

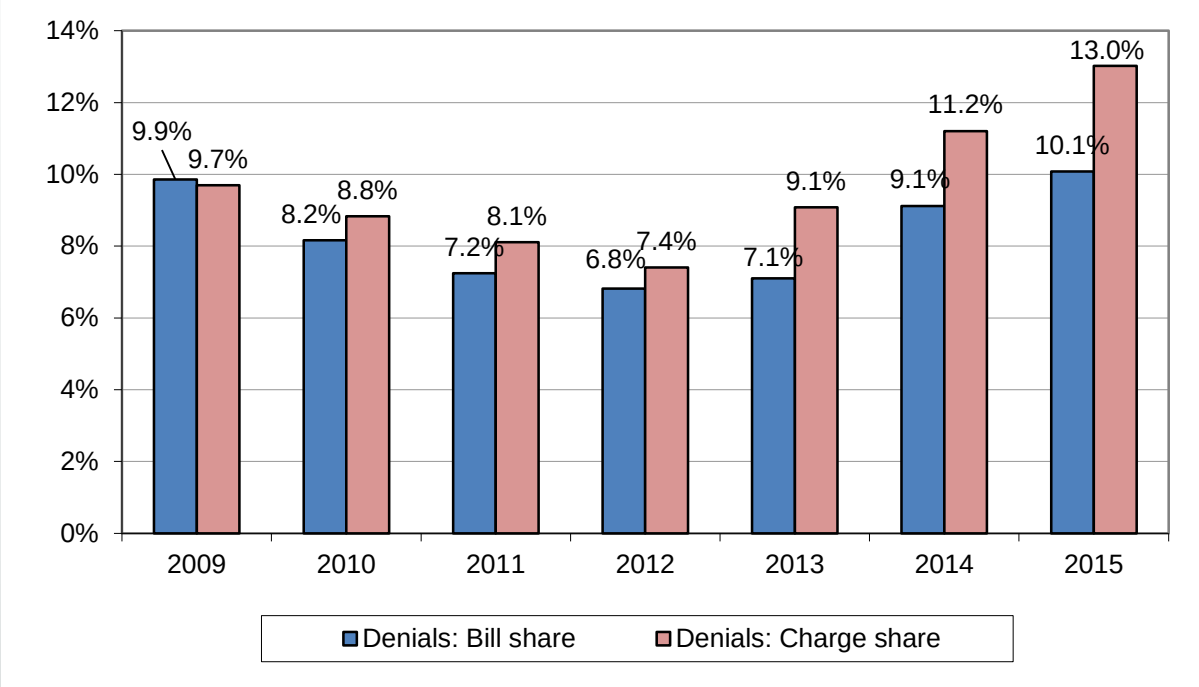
Note: MIOs are rescinded when agreements are reached or the appeals/dispute process is adjudicated.
Source: Texas Department of Insurance, Division of Workers' Compensation, 2016.



PHARMACY SERVICES DENIAL REASONS



PERCENT OF PHARMACY BILLS AND CHARGES DENIED BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.
Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



DISTRIBUTION OF DENIAL REASONS BY SERVICE YEAR

Denial reason	2009	2010	2011	2012	2013	2014	2015
Based on Review Organization	6,736	8,635	6,884	8,194	6,620	4,386	5,118
Denial after Review	29,708	29,987	23,980	11,751	8,551	9,346	10,345
Duplicate/Previously Paid	12,273	8,450	8,828	8,748	5,815	6,943	7,664
Entitlement/Noncompensable	9,280	8,811	7,782	7,874	9,084	7,363	6,462
Extent of Injury	8,883	6,378	5,602	7,054	6,047	5,326	6,596
Fee Schedule Adjustment	18,557	11,650	10,560	9,350	12,153	24,122	17,525
Negotiated Contract	5,655	2,645	3,740	3,152	2,448	6,667	4,808
Not Timely Filed	22,893	17,480	14,850	11,565	12,521	12,125	10,487
Preauth Not Obtained	5,779	6,676	4,409	5,751	10,039	14,785	18,421
Unnecessary/Unsupported/Doc Missing	29,735	18,159	17,850	17,044	8,776	4,513	5,598
Others	17,396	13,084	10,338	8,739	9,859	10,652	8,693
Total denied bills	166,895	131,955	114,823	99,222	91,913	106,228	101,717
All SY bills	1,692,621	1,616,790	1,584,726	1,456,338	1,294,167	1,165,409	1,009,389
Denials: Bill share	9.9%	8.2%	7.2%	6.8%	7.1%	9.1%	10.1%

Notes: Other reasons include 'not an appropriate health care provider', 'bundling', 'payment policy', and unspecified or unclassified denial reason codes. The denial reasons listed in this table reflect the payment adjustment reason codes reported to DWC by insurance carriers on individual medical bills. Although the data reported reflects that the medical bill was not paid, the REG cannot reconcile the validity of the reason codes submitted since these reason codes may reflect data reporting errors. Further analysis is required to better understand the reasons for these denials. Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



SHARES OF DENIAL REASONS BY SERVICE YEAR

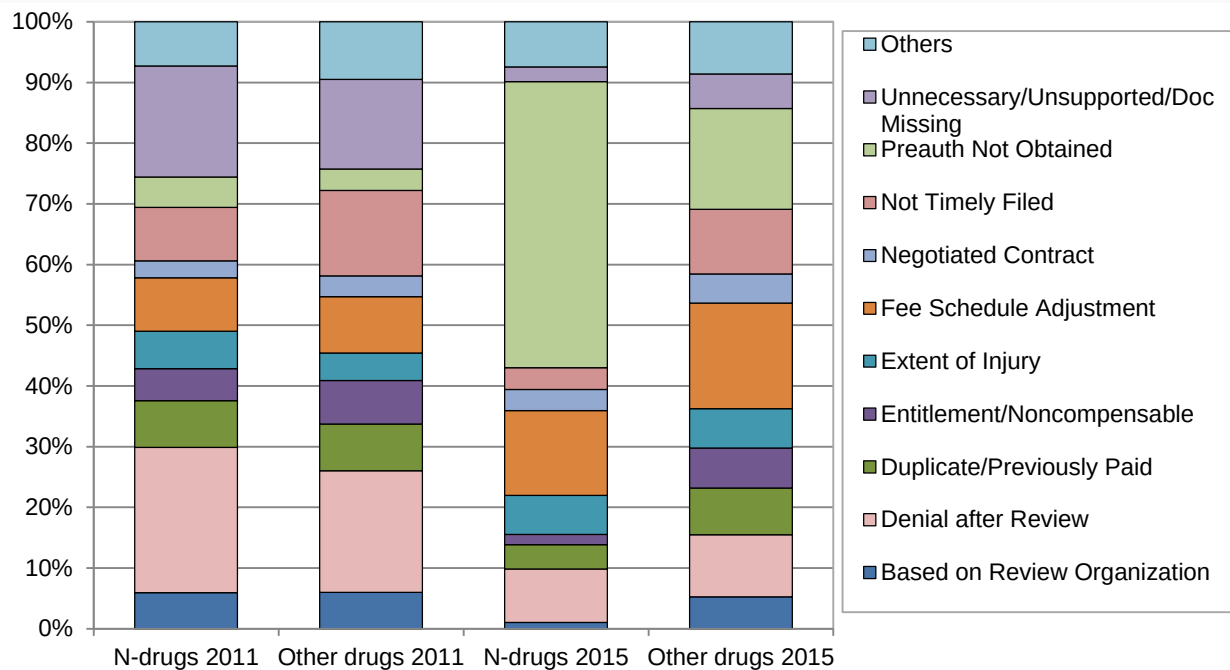
Denial reason	2009	2010	2011	2012	2013	2014	2015
Based on Review Organization	4.0%	6.5%	6.0%	8.3%	7.2%	4.1%	5.0%
Denial after Review	17.8%	22.7%	20.9%	11.8%	9.3%	8.8%	10.2%
Duplicate/Previously Paid	7.4%	6.4%	7.7%	8.8%	6.3%	6.5%	7.5%
Entitlement/Noncompensable	5.6%	6.7%	6.8%	7.9%	9.9%	6.9%	6.4%
Extent of Injury	5.3%	4.8%	4.9%	7.1%	6.6%	5.0%	6.5%
Fee Schedule Adjustment	11.1%	8.8%	9.2%	9.4%	13.2%	22.7%	17.2%
Negotiated Contract	3.4%	2.0%	3.3%	3.2%	2.7%	6.3%	4.7%
Not Timely Filed	13.7%	13.2%	12.9%	11.7%	13.6%	11.4%	10.3%
Preauth Not Obtained	3.5%	5.1%	3.8%	5.8%	10.9%	13.9%	18.1%
Unnecessary/Unsupported/Doc Missing	17.8%	13.8%	15.5%	17.2%	9.5%	4.2%	5.5%
Others	10.4%	9.9%	9.0%	8.8%	10.7%	10.0%	8.5%

Notes: Other reasons include 'not an appropriate health care provider', 'bundling', 'payment policy', and unspecified or unclassified denial reason codes. The denial reasons listed in this table reflect the payment adjustment reason codes reported to DWC by insurance carriers on individual medical bills. Although the data reported reflects that the medical bill was not paid, the REG cannot reconcile the validity of the reason codes submitted since these reason codes may reflect data reporting errors. Further analysis is required to better understand the reasons for these denials. Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



DENIAL REASONS BY “N” DRUG STATUS, FSY 2011 AND FSY 2015



Notes: Other reasons include 'not an appropriate health care provider', 'bundling', 'payment policy', and unspecified or unclassified denial reason codes. The denial reasons listed in this figure reflect the payment adjustment reason codes reported to DWC by insurance carriers on individual medical bills. Although the data reported reflects that the medical bill was not paid, the REG cannot reconcile the validity of the reason codes submitted since these reason codes may reflect data reporting errors. Further analysis is required to better understand the reasons for these denials. Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

DENIAL REASONS BY DRUG GROUP, FSY 2011

Denial reason	Analgesics - Anti-Inflam- matory	Analgesics - Opioid	Central Nervous System Drugs	Musculo- skeletal Therapy Agents	Others	Total
Based on Review Organization	6%	7%	7%	7%	4%	6%
Denial after Review	18%	21%	25%	21%	19%	21%
Duplicate/Previously Paid	7%	8%	8%	8%	8%	8%
Entitlement/Noncompensable	10%	7%	5%	8%	6%	7%
Extent of Injury	4%	4%	8%	3%	5%	5%
Fee Schedule Adjustment	9%	9%	9%	9%	10%	9%
Negotiated Contract	3%	3%	3%	3%	4%	3%
Not Timely Filed	17%	13%	7%	12%	15%	13%
Preauth Not Obtained	4%	4%	4%	4%	3%	4%
Unnecessary/Unsupported/Doc Missing	13%	15%	18%	15%	16%	16%
Others	9%	10%	7%	9%	10%	9%
Total	100%	100%	100%	100%	100%	100%

Notes: Other reasons include 'not an appropriate health care provider', 'bundling', 'payment policy', and unspecified or unclassified denial reason codes. The denial reasons listed in this table reflect the payment adjustment reason codes reported to DWC by insurance carriers on individual medical bills. Although the data reported reflects that the medical bill was not paid, the REG cannot reconcile the validity of the reason codes submitted since these reason codes may reflect data reporting errors. Further analysis is required to better understand the reasons for these denials.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



DENIAL REASONS BY DRUG GROUP, FSY 2015

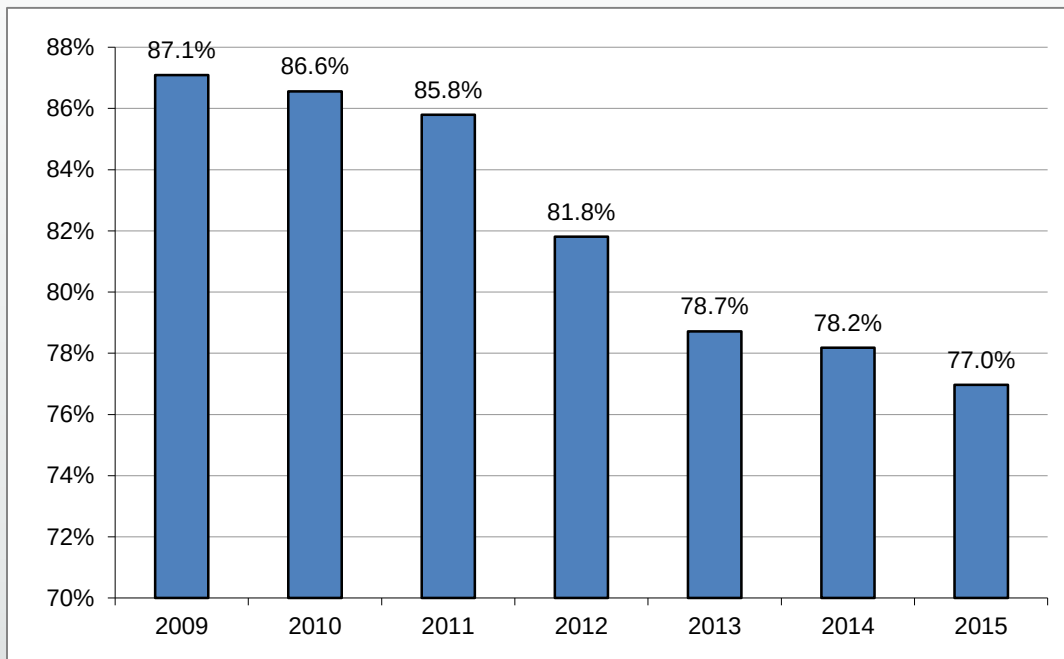
Denial reason	Analgesics - Anti-Inflam- matory	Analgesics - Opioid	Central Nervous System Drugs	Musculo- skeletal Therapy Agents	Others	Total
Based on Review Organization	5%	5%	5%	5%	7%	6%
Denial after Review	12%	12%	13%	12%	10%	11%
Duplicate/Previously Paid	9%	10%	11%	9%	7%	8%
Entitlement/Noncompensable	9%	8%	4%	9%	6%	7%
Extent of Injury	5%	6%	13%	6%	7%	7%
Fee Schedule Adjustment	20%	25%	21%	20%	15%	19%
Negotiated Contract	5%	5%	6%	5%	5%	5%
Not Timely Filed	16%	17%	8%	14%	8%	11%
Preauth Not Obtained	13%	7%	15%	13%	30%	20%
Unnecessary/Unsupported/Doc Missing	6%	5%	5%	6%	7%	6%
Others	9%	11%	9%	9%	9%	9%
Total	100%	100%	100%	100%	100%	100%

Notes: Other reasons include 'not an appropriate health care provider', 'bundling', 'payment policy', and unspecified or unclassified denial reason codes. The denial reasons listed in this table reflect the payment adjustment reason codes reported to DWC by insurance carriers on individual medical bills. Although the data reported reflects that the medical bill was not paid, the REG cannot reconcile the validity of the reason codes submitted since these reason codes may reflect data reporting errors. Further analysis is required to better understand the reasons for these denials.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



PAY/CHARGE RATIO BY SERVICE YEAR



Notes: Pay/charge ratios are calculated for the bills that are not denied.

Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



MOST FREQUENTLY DENIED DRUGS IN FSY 2014

Rank by number of Rx	Drug name	Number of claims	Number of Rx	Total charged
1	HYDROCODONE/ACETAMINOPHEN	5,911	12,446	\$669,411
2	CYCLOBENZAPRINE HCL	3,958	6,887	\$568,967
3	TRAMADOL HCL	3,524	6,523	\$619,828
4	GABAPENTIN	2,548	5,572	\$1,832,084
5	IBUPROFEN	2,986	4,794	\$197,347
6	NAPROXEN	2,745	4,303	\$255,968
7	MELOXICAM	1,738	3,368	\$483,994
8	Unspecified	1,356	2,931	\$713,896
9	FLURBIPROFEN	1,069	2,280	\$968,584
10	BACLOFEN	1,151	2,261	\$409,513

Rank by total charged	Drug name	Number of claims	Number of Rx	Total charged
1	GABAPENTIN	2,548	5,572	\$1,832,084
2	FLURBIPROFEN	1,069	2,280	\$968,584
3	LYRICA	854	2,031	\$796,977
4	Unspecified	1,356	2,931	\$713,896
5	HYDROCODONE/ACETAMINOPHEN	5,911	12,446	\$669,411
6	TRAMADOL HCL	3,524	6,523	\$619,828
7	CYCLOBENZAPRINE HCL	3,958	6,887	\$568,967
8	CELEBREX	856	1,757	\$543,750
9	FLUTICASONE PROPIONATE	101	153	\$520,348
10	KETAMINE HCL	553	1,040	\$507,975

Note: FSF 2014 is the most complete service year for reviewed bills. 'Unspecified' drugs have missing data and/or unmatched National Drug Codes.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



SUBSTITUTION EFFECTS OF THE PHARMACY CLOSED FORMULARY (UTILIZATION CHANGES IN NON-N DRUGS AND PHYSICAL MEDICINE SERVICES)



ANALYZING SUBSTITUTION EFFECTS

- ★ Using average utilization metrics, there is little evidential data for a substitution of Other drugs for N-drugs.
- ★ However, a cohort analysis is conducted to examine direct substitution behaviors utilizing Other drugs and physical medicine services for N-drugs.
- ★ Data requirements as a controlled sample:
 - Legacy claims that had pharmacy services before and after the formulary;
 - That had one or more “N” status drugs prior to the formulary; and
 - That had services after the formulary (not closed)
- ★ Claims in the cohort:
 - FIY 2011 legacy claims with one or more N-drugs in FSY 2013.
 - N = 2,159 claims.
 - Because of the small sample size, we disregard external effects from differences in geographic region, age, and injury severity. To some extent, legacy claims in the third and fourth year of service are relatively homogeneous in pharmacy utilization.



NUMBER OF PRESCRIPTIONS AND CLAIMS, BY SERVICE YEAR

		2009	2010	2011	2012	2013	2014	2015
N-drugs	Number of Rx	335,077	321,501	278,955	197,169	129,485	37,983	26,701
	Number of claims	59,952	57,830	49,006	29,743	18,971	8,496	5,851
	Rx per claim	5.6	5.6	5.7	6.6	6.8	4.5	4.6
Other drugs	Number of Rx	1,186,198	1,158,220	1,187,527	1,155,590	1,070,659	1,020,103	880,265
	Number of claims	159,062	154,221	153,875	151,673	141,968	135,809	124,962
	Rx per claim	7.5	7.5	7.7	7.6	7.5	7.5	7.0

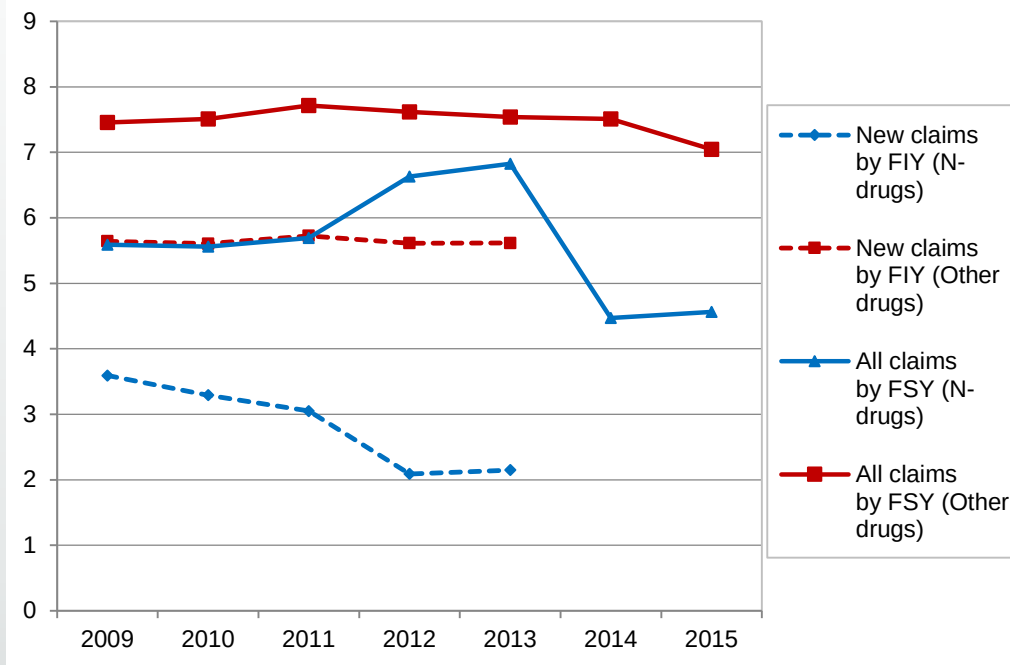
Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

- In FSY 2012 and FSY 2013, legacy claims with a low number of N-drugs were closed faster than those claims with a high number of N-drugs.



NUMBER OF PRESCRIPTIONS PER CLAIM



Notes: New injury claims are considered with 24 months of service after injury.

Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

COHORTS TO ANALYZE SUBSTITUTION EFFECTS

- Among FSY 2011 legacy claims, 6,652 claims had pharmacy services in FSY 2013 (“before the Formulary” for the legacy claims).
- Among these claims, 2,159 claims had one or more N-drugs in FSY 2013.

Claim type	Fiscal injury year	Fiscal service year					
		2010	2011	2012	2013	2014	2015
Legacy Claims	2010	97,604	21,562	6,878	3,448	2,005	1,385
	2011		100,412	21,439	6,652	3,239	1,931
New Claims	2012			98,019	20,230	5,995	2,900
	2013				90,932	18,730	5,537
	2014					88,383	18,204
	2015						80,755

Notes: Highlighted cells indicate that the Formulary is in effect for the group of claims.

Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



PHARMACY SERVICES FOR FIY 2011 CLAIMS

FSY	Number of claims	Total cost	Number of Rx	Rx per claim	Cost per claim	Cost per Rx
N-drugs						
2011	20,398	\$4,244,982	41,032	2.0	\$208	\$103
2012	6,741	\$3,515,979	26,034	3.9	\$522	\$135
2013	2,159	\$1,978,028	11,613	5.4	\$916	\$170
2014	417	\$457,598	1,971	4.7	\$1,097	\$232
2015	195	\$290,238	1,072	5.5	\$1,488	\$271
Other drugs						
2011	97,628	\$16,666,522	356,956	3.7	\$171	\$47
2012	20,738	\$13,780,006	184,482	8.9	\$664	\$75
2013	6,472	\$9,146,572	83,986	13.0	\$1,413	\$109
2014	3,208	\$6,151,046	51,507	16.1	\$1,917	\$119
2015	1,918	\$4,310,820	31,905	16.6	\$2,248	\$135

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

- All FIY 2011 claims. Prescriptions per claim increases in later years as claims with chronic/severe conditions continue to receive pharmacy services.



PHARMACY SERVICES FOR THE COHORT

FSY	Number of claims receiving services	N-drugs				Other drugs			
		Number of claims	Cost	Number of Rx	Number of Rx per claim	Number of claims	Cost	Number of Rx	Number of Rx per claim
2011	5,215	2,266	\$945,962	7,986	3.5	5,154	\$3,054,092	53,505	10.4
2012	5,837	2,866	\$2,328,980	16,640	5.8	5,776	\$8,778,005	107,013	18.5
2013	6,652	2,159	\$1,978,028	11,613	5.4	6,472	\$9,146,572	83,986	13.0
2014	2,841	387	\$448,142	1,904	4.9	2,815	\$5,972,689	49,557	17.6
2015	1,664	175	\$279,207	1,007	5.8	1,653	\$4,057,313	29,881	18.1

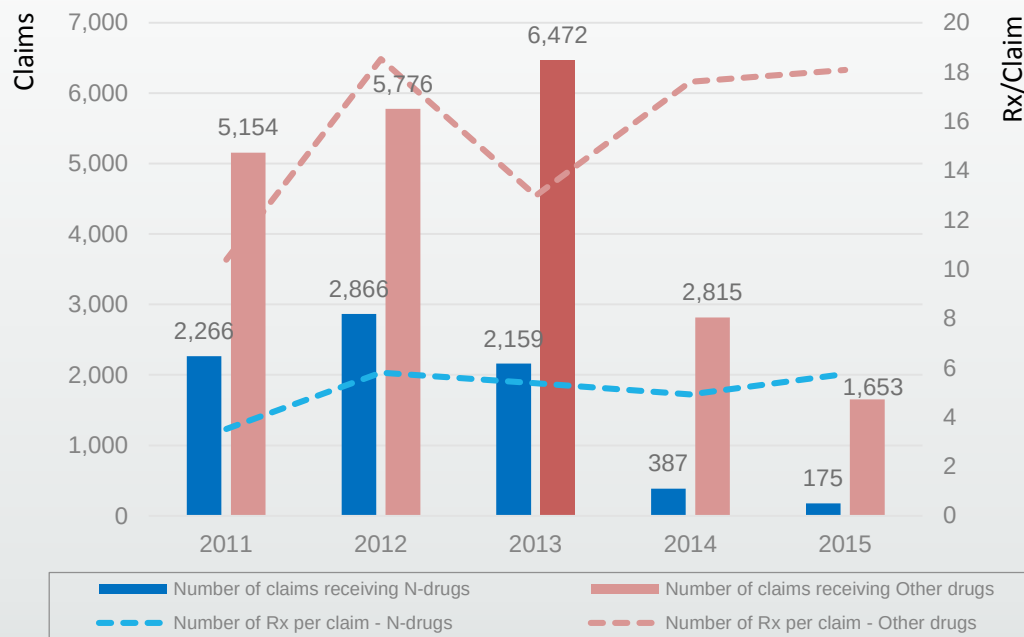
Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

- Average number of Other drug prescriptions per claim increased in FSY 2014 by 35%, but the number of claims decreased by 57%.
- Out of 6,652 claims, 2,159 (32%) received N-drugs; 6,472 (97%) received Other drugs in FSY 2013.
- 387 received N-drugs and 2,815 received Other drugs in FSY 2014.
- 1,318 claims (20% of 6,472) did not receive Other drugs in the first year after injury (FSY 2011).



PHARMACY SERVICES FOR THE COHORT



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

- FSY 2014 and FSY 2015 are after the formulary for these claims.



SUBSTITUTION OF OTHER DRUGS FOR N-DRUGS, AMONG THE COHORT

Change in N-drug usage from 2013 to 2014		Other drugs in 2013		Other drugs in 2014		N-drugs in 2013	N-drugs in 2014	
Trend	Number of claims	Number of claims	Avg Rx per claim	Number of claims	Avg Rx per claim	Avg Rx per claim	Number of claims	Avg Rx per claim
No N-drug	1,840	1,671	17.9	894	18.6	4.2	0	0
Dec/same	274	265	28.0	257	25.5	12.7	274	4.5
Increase	45	43	26.1	39	36.5	7.7	45	11.8
Total	2,159	1,979		1,190			319	

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

Out of 2,159 N-drug users in FSY 2013, 92% received Other drugs in 2013. Only 55% received Other drugs in 2014.

- N-drug utilization was faded out after the Formulary for 1,840 (85%) claims.
 - ✓ Among these claims, Other drug utilization increased from 17.9 to 18.6 services per claim. However, this increase in average is based on 894 claims.
 - ✓ **Overall, Other drug usage decreased by 38% from 16.2 in 2013 to 10.0 services per claim (for 1,840 claims in the cohort).**
- N-drug utilization decreased or remained the same for 274 (13%) claims. Other drug utilization decreased as well for this group. There was no substitution effect.
- N-drug increased for 45 (2%) claims after the formulary. Its impact on the overall averages is negligible.



TOTAL AND AVERAGE PHARMACY COSTS FOR THE COHORT

Change in N-drug usage from 2013 to 2014	Other drugs 2013	Other drugs 2014	N-drugs 2013	N-drugs 2014
Total cost				
No N-drug	\$3,302,142	\$1,918,400	\$1,172,099	\$0
Dec/same	\$1,093,654	\$1,071,385	\$730,481	\$299,626
Increase	\$139,263	\$211,605	\$75,448	\$113,436
Total	\$4,535,060	\$3,201,390	\$1,978,028	\$413,062
Number of claims				
No N-drug	1,671	894	1,840	0
Dec/same	265	257	274	274
Increase	43	39	45	45
Total	1,979	1,190	2,159	319
Average cost per claim				
No N-drug	\$1,976	\$2,146	\$637	\$0
Dec/same	\$4,127	\$4,169	\$2,666	\$1,094
Increase	\$3,239	\$5,426	\$1,677	\$2,521
Total	\$2,292	\$2,690	\$916	\$1,295

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



SUBSTITUTION OF PHYSICAL MEDICINE SERVICES FOR N-DRUGS, AMONG THE COHORT

- Within the cohort, utilization of physical medicine services decreased among claims whose N-drug usage decreased after the formulary.

Change in N-drug usage from 2013 to 2014		PM services in 2013			PM services in 2014		
Trend	Number of claims	Number of claims	Avg service per claim	Total cost	Number of claims	Avg service per claim	Total cost
No N-drug	1,840	399	95.9	\$2,446,971	228	73.0	\$1,091,269
Dec/same	274	426	77.6	\$2,193,870	93	68.4	\$443,732
Increase	45	18	76.3	\$81,770	10	121.4	\$112,976
Total	2,159	843		\$4,722,611	331		\$1,647,977

Note: Services are reported by the number of sessions billed, each session of 15 minutes, 30 minutes, or other length of time customary for specific service billing practices. Decreased utilization levels of physical medicine services (and Other drugs) for the cohort may indicate an overutilization before the formulary, but they may also be affected by other factors than the formulary, such as better treatment and faster recovery, and/or a shift to group health coverage. A decrease may also be a result of natural progression of an injury. Usual caveats apply since these external influences cannot be factored out.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



PHYSICAL MEDICINE SERVICES BY SERVICE YEAR, FOR ALL CLAIMS BY DRUG USE PATTERN

	2009	2010	2011	2012	2013	2014	2015
N-drug users							
Number of claims	23,782	23,180	20,141	10,364	4,891	2,478	1,933
Total cost (in '000)	\$61,143	\$59,851	\$58,896	\$40,431	\$20,770	\$9,750	\$8,381
Frequency (visits per claim)	12.6	12.5	12.7	14.4	14.7	15.1	16.3
Intensity (services per visit)	4.4	4.3	4.4	4.5	4.7	4.6	4.6
Utilization (services per claim)	55.3	54.5	56.5	65.6	69.6	69.7	74.8
Other drugs only							
Number of claims	32,531	32,785	36,426	44,798	46,676	48,892	46,005
Total cost (in '000)	\$46,432	\$49,405	\$62,829	\$86,942	\$101,023	\$110,708	\$99,679
Frequency (visits per claim)	9.0	9.1	9.1	9.7	10.3	10.4	10.6
Intensity (services per visit)	3.9	4.0	4.1	4.1	4.2	4.3	4.1
Utilization (services per claim)	35.6	36.4	37.0	39.5	43.4	45.1	43.6
No pharmacy							
Number of claims	27,708	25,951	25,523	26,097	26,758	28,231	29,550
Total cost (in '000)	\$29,293	\$27,683	\$30,401	\$32,891	\$35,178	\$36,793	\$36,999
Frequency (visits per claim)	7.3	7.1	7.0	6.9	6.9	6.8	6.9
Intensity (services per visit)	3.8	3.8	3.8	3.8	3.9	4.0	3.8
Utilization (services per claim)	28.0	26.9	26.9	26.4	27.1	27.2	26.4

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

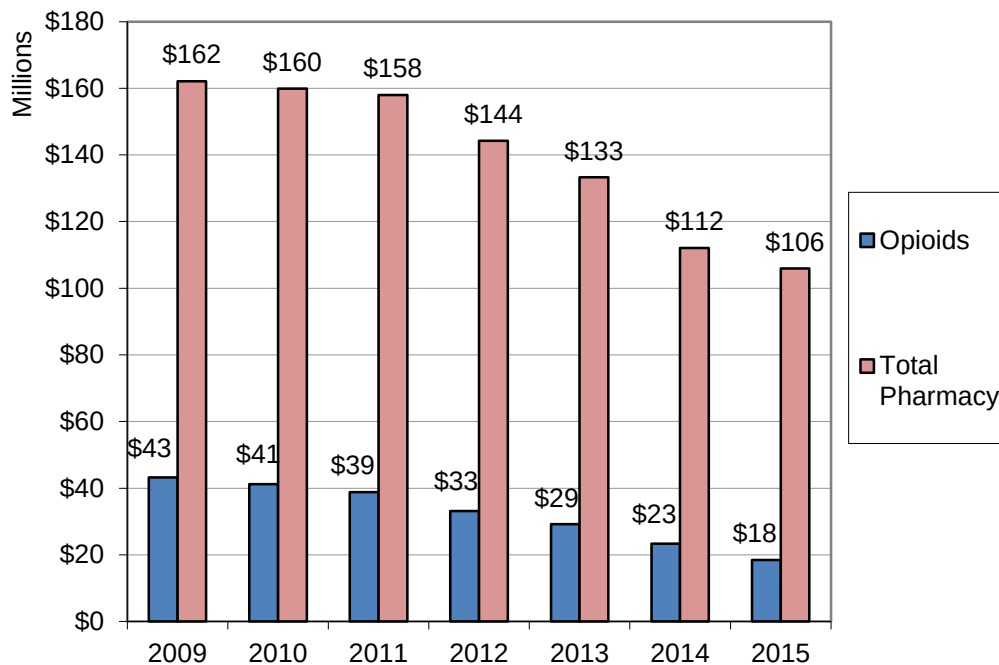
- Summing all three groups, the average utilization per claim increased slightly from 38.7 in 2011 to 39.5 in 2014, then decreased to 37.8 in 2015. Increases in the 'Other drugs only' group are results of the migration of high-utilization N-drug users to the Other drugs group.
- While utilization levels were stable, total cost and average cost per claim increased by 6 percent and 15 percent, respectively, because of increasing prices.



OPIOID PHARMACY COSTS AND UTILIZATION



TOTAL PHARMACY AND OPIOID COSTS, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

- The share of Opioids decreased from 27% of total pharmacy cost in 2009 to 18% in 2015.
- Since 2009, total pharmacy cost decreased by 35%, while Opioid cost decreased by 57%.



OPIOID PRESCRIPTIONS AND COST

BY “N” DRUG STATUS BY SERVICE YEAR

FSY	Number of prescriptions		Cost		
	N-drugs	Other drugs	N-drugs	Other drugs	Total cost
2009	77,049	411,149	\$13,911,340	\$29,332,594	\$43,243,934
2010	74,638	398,330	\$14,629,297	\$26,590,672	\$41,219,969
2011	44,930	414,029	\$13,906,965	\$24,950,255	\$38,857,220
2012	29,260	377,008	\$11,635,631	\$21,544,563	\$33,180,194
2013	23,186	351,622	\$9,820,397	\$19,367,827	\$29,188,225
2014	7,042	347,317	\$3,149,919	\$20,201,422	\$23,351,341
2015	4,829	235,447	\$2,232,627	\$16,261,724	\$18,494,350

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.

Most common drug names in FSY 2015:

- N status opioids: Oxycontin, Methadone, Suboxone
- Non-N opioids: Hydrocodone/APAP, Tramadol, APAP/Codeine



OPIOID MORPHINE MILLIGRAM EQUIVALENT (MME)

- ★ Need for comparable (equianalgesic) dosage to compare different drugs, packages, and strengths: Morphine as the reference
- ★ Conversion formula using: strength, drug quantity, drug days, and conversion factor
 - Data issue: drug days (15%+ errors in pre-2009 service years). Those with 'drug days = 1' or 500+ MMEs/day are deleted from analysis.
- ★ Conversion factors by Centers for Disease Control and Prevention
 - Morphine, Hydrocodone = 1
 - Tramadol = 0.1
 - Oxycodone = 1.5
 - Fentanyl patch = 7.2
- ★ Conversion factor and strength data for each NDC: data downloaded from *PDMP Training and Technical Assistance Center* at Brandeis University



CHARACTERISTICS OF OPIOID PRESCRIPTIONS BY “N” DRUG STATUS

FSY	“N” drug status	Number of drug name	Pay/Rx	Total MMEs/Rx	Pay/100 MMEs	Drug days/Rx	Avg daily MMEs	Avg pay per claim	Average Rx per claim
2009	N-drug	38	\$181	2,138	\$8	20	107	\$607	3
	Other	85	\$71	821	\$9	19	43	\$344	5
2010	N-drug	39	\$196	2,197	\$9	21	107	\$678	3
	Other	72	\$67	800	\$8	19	42	\$321	5
2011	N-drug	40	\$310	2,765	\$11	24	115	\$1,203	4
	Other	65	\$60	760	\$8	19	40	\$285	5
2012	N-drug	35	\$398	3,116	\$13	27	117	\$2,201	6
	Other	55	\$57	742	\$8	18	40	\$247	4
2013	N-drug	36	\$424	3,204	\$13	28	113	\$2,578	6
	Other	55	\$55	767	\$7	20	39	\$237	4
2014	N-drug	33	\$447	3,423	\$13	29	120	\$2,048	5
	Other	47	\$58	802	\$7	21	37	\$252	4
2015	N-drug	26	\$462	3,233	\$14	29	112	\$2,195	5
	Other	47	\$69	891	\$8	23	39	\$253	4

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers’ Compensation Research and Evaluation Group, 2016.

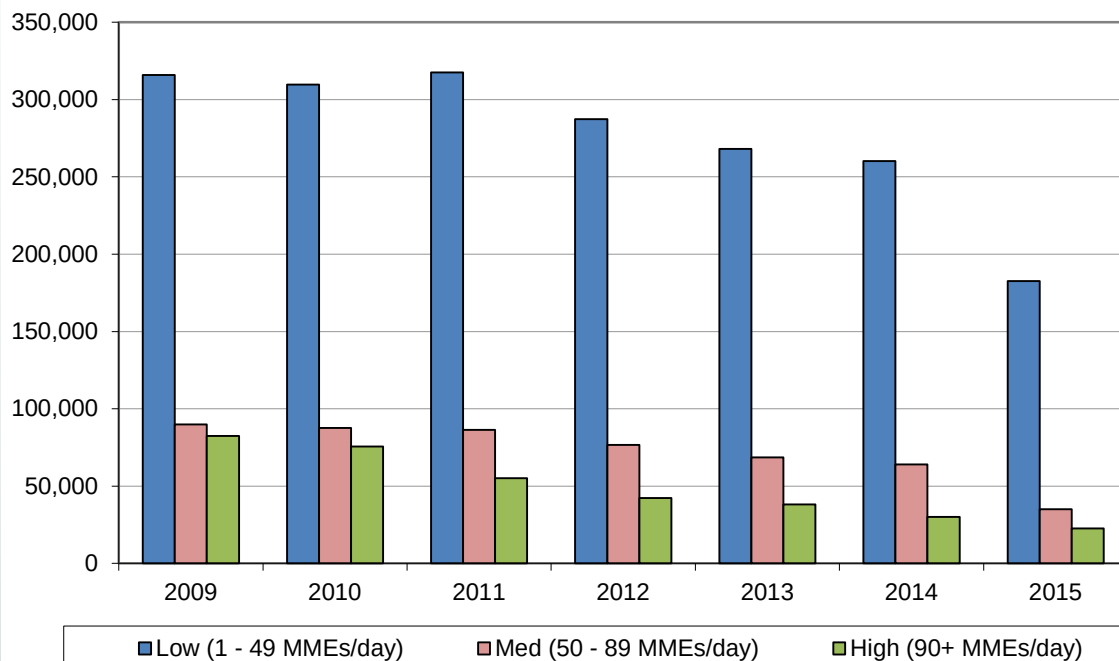


DOSAGE GROUPS USING DAILY MMEs

- ★ “CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016” (CDC’s *Morbidity and Mortality Weekly Report*, March 2016)
 - National sample of VHA
 - Mean daily dosage of fatal opioid overdose cases: 98 MMEs/day (median of 60 MMEs/day)
 - Mean daily dosage of non-fatal overdose: 48 MMEs/day (median of 25 MMEs/day)
- ★ Dosage groupings
 - Low: 1 – 49 MMEs/day
 - Medium: 50 – 89 MMEs/day
 - High: 90+ MMEs/day



NUMBER OF OPIOID PRESCRIPTIONS BY DOSAGE GROUP, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF OPIOID PRESCRIPTIONS BY DOSAGE GROUP, BY “N” DRUG STATUS, BY SERVICE YEAR

N-drugs

Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	19,187	18,879	12,247	8,643	6,739	1,695	1,112
Med (50 - 89 MMEs/day)	11,617	11,962	7,949	5,035	3,749	1,244	991
High (90+ MMEs/day)	46,245	43,797	24,734	15,582	12,698	4,103	2,726
Total	77,049	74,638	44,930	29,260	23,186	7,042	4,829
Shares							
Low (1 - 49 MMEs/day)	24.9%	25.3%	27.3%	29.5%	29.1%	24.1%	23.0%
Med (50 - 89 MMEs/day)	15.1%	16.0%	17.7%	17.2%	16.2%	17.7%	20.5%
High (90+ MMEs/day)	60.0%	58.7%	55.1%	53.3%	54.8%	58.3%	56.5%

Other drugs

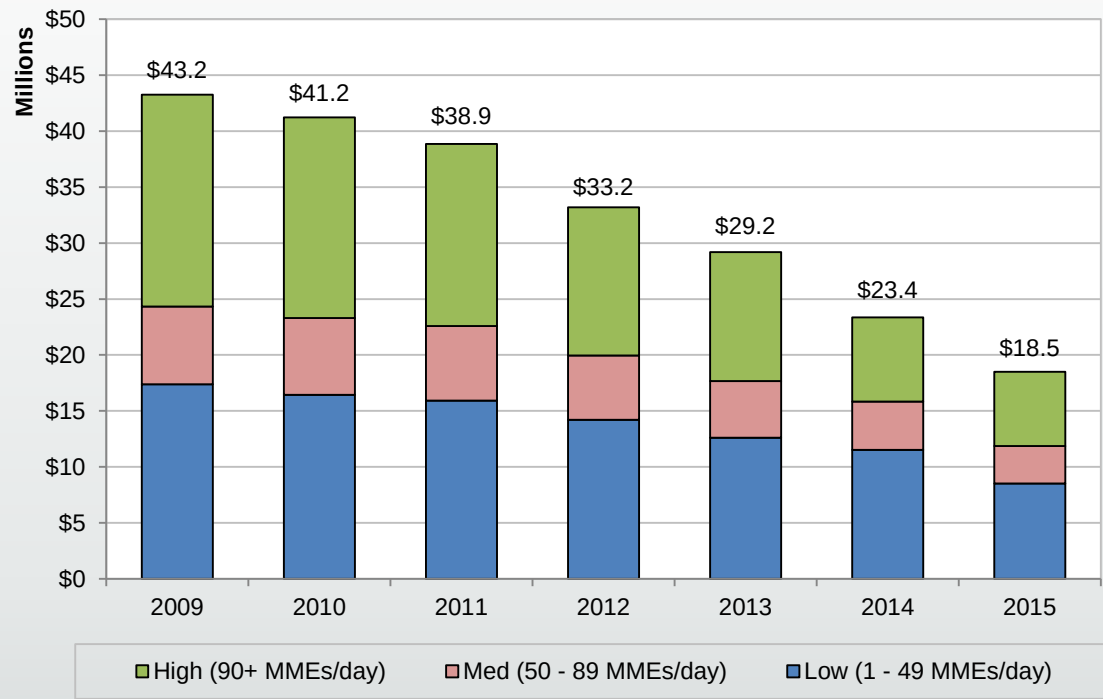
Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	296,767	290,764	305,256	278,683	261,437	258,584	181,457
Med (50 - 89 MMEs/day)	78,280	75,686	78,421	71,675	64,787	62,828	34,052
High (90+ MMEs/day)	36,102	31,880	30,352	26,650	25,398	25,905	19,938
Total	411,149	398,330	414,029	377,008	351,622	347,317	235,447
Shares							
Low (1 - 49 MMEs/day)	72.2%	73.0%	73.7%	73.9%	74.4%	74.5%	77.1%
Med (50 - 89 MMEs/day)	19.0%	19.0%	18.9%	19.0%	18.4%	18.1%	14.5%
High (90+ MMEs/day)	8.8%	8.0%	7.3%	7.1%	7.2%	7.5%	8.5%

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TOTAL OPIOID COST BY DOSAGE GROUP, BY SERVICE YEAR



Note: Service year 2015 data may be incomplete and subject to change.
Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



TOTAL OPIOID COST BY DOSAGE GROUP, BY “N” DRUG STATUS, BY SERVICE YEAR

N-drugs

Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	\$1,273,985	\$1,298,352	\$1,283,601	\$1,388,676	\$1,267,700	\$353,702	\$295,589
Med (50 - 89 MMEs/day)	\$1,555,526	\$1,648,334	\$1,564,187	\$1,282,496	\$1,071,403	\$308,310	\$287,321
High (90+ MMEs/day)	\$11,081,829	\$11,682,611	\$11,059,177	\$8,964,459	\$7,481,295	\$2,487,907	\$1,649,716
Total	\$13,911,340	\$14,629,297	\$13,906,965	\$11,635,631	\$9,820,397	\$3,149,919	\$2,232,627
Shares							
Low (1 - 49 MMEs/day)	9.2%	8.9%	9.2%	11.9%	12.9%	11.2%	13.2%
Med (50 - 89 MMEs/day)	11.2%	11.3%	11.2%	11.0%	10.9%	9.8%	12.9%
High (90+ MMEs/day)	79.7%	79.9%	79.5%	77.0%	76.2%	79.0%	73.9%

Other drugs

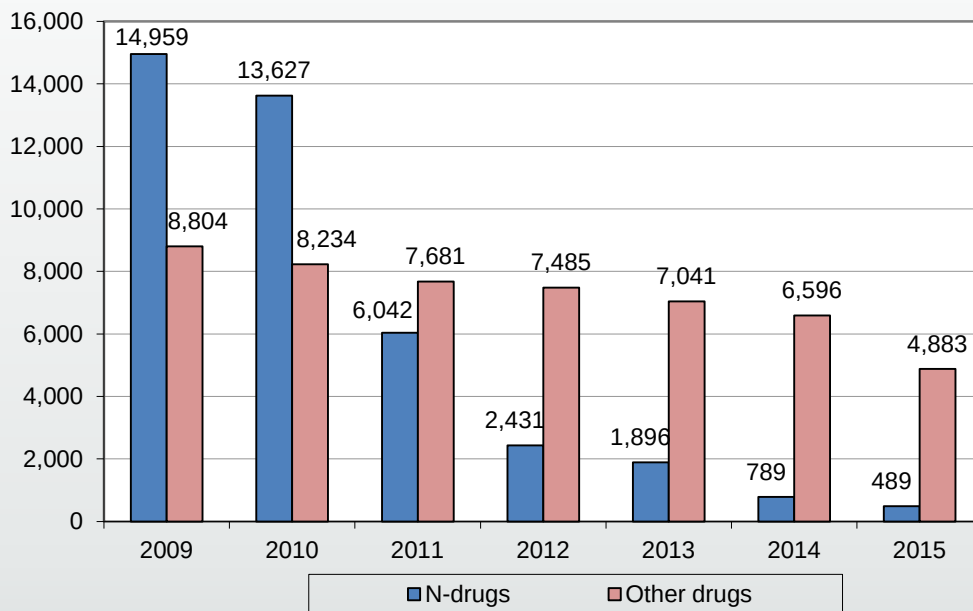
Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	\$16,115,495	\$15,144,636	\$14,652,141	\$12,813,347	\$11,355,751	\$11,167,137	\$8,237,636
Med (50 - 89 MMEs/day)	\$5,379,270	\$5,218,777	\$5,082,691	\$4,466,000	\$3,980,842	\$4,001,998	\$3,057,232
High (90+ MMEs/day)	\$7,837,829	\$6,227,259	\$5,215,423	\$4,265,216	\$4,031,235	\$5,032,287	\$4,966,855
Total	\$29,332,594	\$26,590,672	\$24,950,255	\$21,544,563	\$19,367,827	\$20,201,422	\$16,261,724
Shares							
Low (1 - 49 MMEs/day)	54.9%	57.0%	58.7%	59.5%	58.6%	55.3%	50.7%
Med (50 - 89 MMEs/day)	18.3%	19.6%	20.4%	20.7%	20.6%	19.8%	18.8%
High (90+ MMEs/day)	26.7%	23.4%	20.9%	19.8%	20.8%	24.9%	30.5%

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF CLAIMS RECEIVING OPIOID PRESCRIPTIONS WITH 90+ MMEs/DAY, BY SERVICE YEAR



The number of claims receiving 90+ MMEs/day of N-drug Opioids fell from almost **15,000** in 2009 to less than **500** in 2015.

Notes: Claim counts are duplicative as a claim may receive prescriptions of N-drugs as well as Other drugs. Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



NUMBER OF CLAIMS RECEIVING OPIOID PRESCRIPTIONS BY DOSAGE GROUP, BY “N” DRUG STATUS, BY SERVICE YEAR

N-drugs

Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	6,794	6,631	4,462	2,460	1,755	617	389
Med (50 - 89 MMEs/day)	4,232	4,309	2,649	1,456	1,045	366	289
High (90+ MMEs/day)	14,959	13,627	6,042	2,431	1,896	789	489
Total	22,917	21,582	11,561	5,286	3,810	1,538	1,017
Shares							
Low (1 - 49 MMEs/day)	29.6%	30.7%	38.6%	46.5%	46.1%	40.1%	38.2%
Med (50 - 89 MMEs/day)	18.5%	20.0%	22.9%	27.5%	27.4%	23.8%	28.4%
High (90+ MMEs/day)	65.3%	63.1%	52.3%	46.0%	49.8%	51.3%	48.1%

Other drugs

Daily dosage per Rx	2009	2010	2011	2012	2013	2014	2015
Low (1 - 49 MMEs/day)	72,860	70,976	76,083	75,645	71,589	71,081	57,733
Med (50 - 89 MMEs/day)	22,480	21,196	21,763	21,602	20,247	18,910	12,497
High (90+ MMEs/day)	8,804	8,234	7,681	7,485	7,041	6,596	4,883
Total	85,243	82,849	87,678	87,104	81,875	80,284	64,169
Shares							
Low (1 - 49 MMEs/day)	85.5%	85.7%	86.8%	86.8%	87.4%	88.5%	90.0%
Med (50 - 89 MMEs/day)	26.4%	25.6%	24.8%	24.8%	24.7%	23.6%	19.5%
High (90+ MMEs/day)	10.3%	9.9%	8.8%	8.6%	8.6%	8.2%	7.6%

Notes: Sum of shares may exceed 100% because a claim may receive prescriptions in multiple dosage groups.

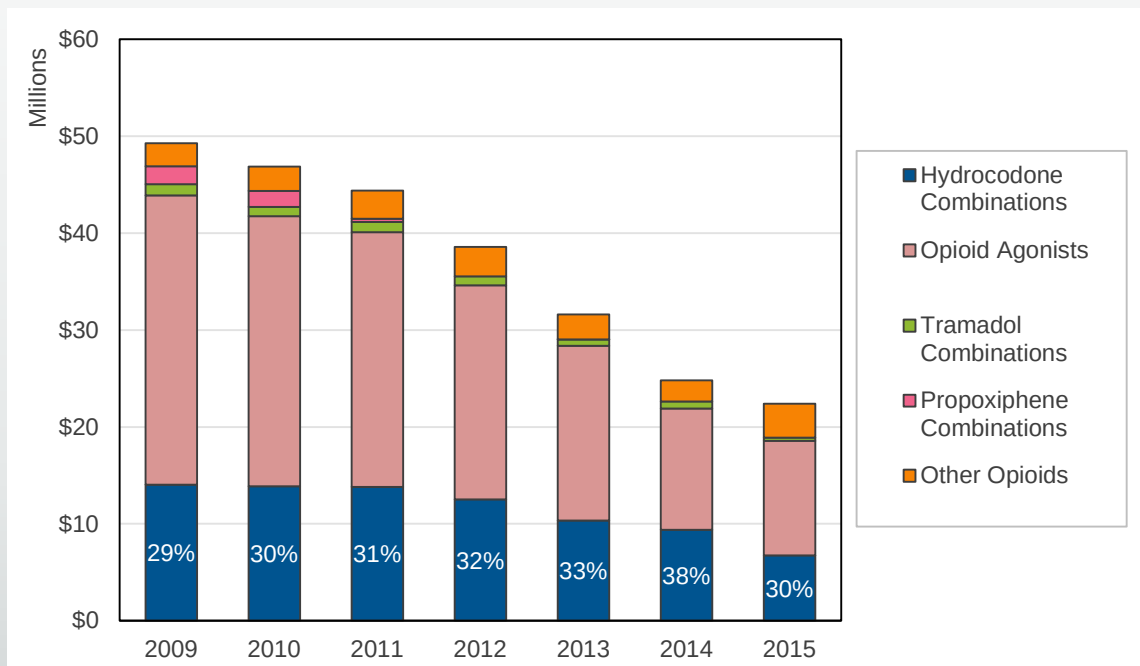
Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



OPIOIDS AND HYDROCODONE COMBINATION PRODUCTS

- ★ Hydrocodone combination products (HCPs) account for about 30 percent of all opioid costs.



Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



HYDROCODONE COMBINATION PRODUCTS

- ★ Hydrocodone combination products (HCPs) moved to Schedule II from Schedule III effective Oct. 6, 2014.
- ★ HCPs accounted for 60 percent of opioid prescriptions in FSY 2009, which decreased to 41 percent in FSY 2015.
- ★ The majority of HCPs are not “N” status drugs.
 - ★ N-drug HCPs: extended release formulas or Hydrocodone/ibuprofen

Drug subclass	2009	2010	2011	2012	2013	2014	2015
All opioids	518,463	501,824	493,037	447,645	389,106	359,973	280,449
Opioid Others	435,609	422,183	444,056	414,039	364,447	352,493	275,258
Opioid N-drugs	82,854	79,641	48,981	33,606	24,659	7,480	5,191
All HCPs	309,633	304,446	313,775	285,648	240,152	219,581	113,821
HCP N-drugs	5,312	6,101	6,121	3,887	2,183	554	120
HCP Others	304,321	298,345	307,654	281,761	237,969	219,027	113,701
HCP share of opioids	59.7%	60.7%	63.6%	63.8%	61.7%	61.0%	40.6%

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.



HYDROCODONE COMBINATION PRODUCTS

- ★ Cost of HCPs decreased by 28 percent from 2014 to 2015.
- ★ Cost shares of HCPs increased from 29 percent in 2009 to 38 percent in 2014, but decreased to 30 percent in 2015 after the schedule change.
- ★ Per-prescription cost of HCPs is lower than that of other opioids, but it increased by 37 percent from 2014 to 2015.

Drug subclass	2009	2010	2011	2012	2013	2014	2015
All opioids	\$49,294,159	\$46,871,013	\$44,404,100	\$38,583,173	\$31,608,779	\$24,795,735	\$22,388,681
Opioid Others	\$32,224,877	\$29,302,828	\$27,859,555	\$24,456,770	\$20,531,913	\$21,048,823	\$19,692,063
Opioid N-drugs	\$17,069,283	\$17,568,185	\$16,544,545	\$14,126,403	\$11,076,866	\$3,746,912	\$2,696,618
All HCPs	\$14,058,280	\$13,893,289	\$13,815,966	\$12,531,222	\$10,339,493	\$9,375,491	\$6,753,108
HCP N-drugs	\$414,488	\$434,269	\$414,092	\$309,509	\$245,383	\$59,241	\$24,695
HCP Others	\$13,643,791	\$13,459,020	\$13,401,874	\$12,221,713	\$10,094,110	\$9,316,250	\$6,728,413
HCP share of opioids	28.5%	29.6%	31.1%	32.5%	32.7%	37.8%	30.2%
Cost per Rx - all opioids	\$95	\$93	\$90	\$86	\$81	\$69	\$80
Cost per Rx - HCPs	\$45	\$46	\$44	\$44	\$43	\$43	\$59

Note: Service year 2015 data may be incomplete and subject to change.

Source: Texas Department of Insurance, Workers' Compensation Research and Evaluation Group, 2016.





TEXAS DEPARTMENT OF INSURANCE

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Per Chapter 405 of the *Texas Labor Code*, the Workers' Compensation Research and Evaluation Group at the Texas Department of Insurance is responsible for conducting professional studies and research on various system issues, including:

- the delivery of benefits;
- litigation and controversy related to workers' compensation;
- insurance rates and rate-making procedures;
- rehabilitation and reemployment of injured employees;
- the quality and cost of medical benefits;
- employer participation in the workers' compensation system;
- employment health and safety issues; and
- other matters relevant to the cost, quality, and operational effectiveness of the workers' compensation system.

