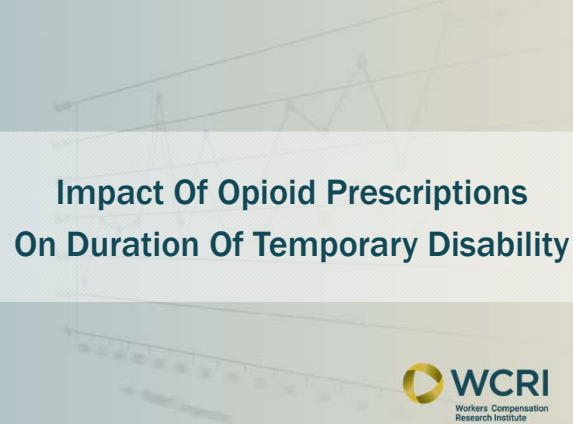





WCRI Research: Highlights and Trends in Workers Compensation

2018 Casualty Loss Reserve Seminar
September 6, 2018






Impact Of Opioid Prescriptions On Duration Of Temporary Disability



Prior WCRI Studies Show That Opioid Prescriptions Are Common In WC

- Between 52 and 85 percent of nonsurgical claims with pain medications had opioid prescription across 26 states
- Between 24 and 58 percent of workers with pain medications had two or more opioid prescriptions
- Between 4 and 18 percent of workers with opioids received opioids on a longer-term basis
- The impact of opioids on injured workers is not well understood

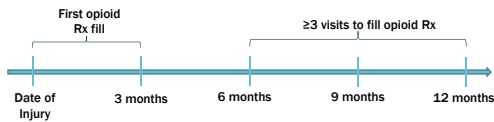
Sources: WCRI, *Interstate Variations In Use Of Opioids, 4th Edition (2017)*; *Longer-Term Dispensing Of Opioids, 4th Edition (2017)*

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This Study Examines Causal Impact Of Opioid Prescriptions On Temporary Disability Duration

- What is the effect of opioid prescriptions on duration of temporary disability benefits?
- What is the effect of multiple opioid prescriptions on duration of temporary disability benefits?
- What is the effect of longer-term opioid prescribing on duration of temporary disability benefits?

Definition Of Longer-Term Dispensing Of Opioids



Analysis Scope

- Workers with low back pain cases with more than 7 days of lost time injured 2009–2013 in 28 states
- Main outcome measure is duration of temporary disability benefits

We Control For Many Characteristics Of Workers, Employers, And Injuries

- Measures of injury severity
 - Score reflecting nature of surgical interventions
 - Score reflecting the nature of treatment for nonsurgical cases
- Worker and employer characteristics
 - Age, gender, marital status, tenure, and industry
- Location characteristics
 - Unemployment rate, educational composition, percent disabled, and rurality of an area

We Estimate Causal Effect Of Opioid Use By Using Methods That Mimic Random Assignment

- Estimating effect of opioid prescriptions is challenging since cases with opioids are different from cases without
 - Unobserved injury severity
 - Unobserved personal characteristics
- Hard to address without random assignment
- We use approach that explores differences in local prescribing patterns to mimic random assignment

We Address Selectivity Concerns By Using Differences In Local Prescribing Patterns

- Determined as percentage with opioid prescriptions (or with longer-term prescribing) among workers within an area
 - 62% of cases had opioid prescriptions in Philadelphia, PA; 71% had prescriptions in Harrisburg, PA
- Local areas defined as hospital referral regions—regional health care markets
- Local prescribing patterns are correlated with individual opioid prescribing measures

Impact Of Local Prescribing Patterns

WCRI
Workers Compensation Research Institute

Local Prescribing Patterns Are Strong Predictors Of Opioid Prescribing

Change In Individual Opioid Prescriptions Due To 10 ppt Increase In Local Prescribing

<i>Any Opioid Use</i>	
10 ppt increase in "any opioids" within local area	3.4 ppt

Based On OLS Estimates For Any Opioids Specifications. All Estimates Shown Are Statistically Significant At 1% Level. Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.
Key: ppt: Percentage Points

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Local Prescribing Patterns Are Strong Predictors Of Longer-Term Opioid Prescribing


Change In Individual Opioid Prescriptions Due To 10 ppt Increase In Local Prescribing

<i>Longer-Term Prescribing Of Opioids</i>	
10 ppt increase in longer-term Rx within local area	2.6 ppt

Based On OLS Estimates For Any Opioids Specifications. All Estimates Shown Are Statistically Significant At 1% Level. Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.
Key: Rx: Prescriptions

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Main Findings About Impact Of Opioid Prescriptions



TD Duration 251% Longer When Opioids Prescribed On Longer-Term Basis

Estimates For Duration Of Temporary Disability Benefits	Change In Duration Of TD Due To Opioid Use
Longer-Term Opioid Prescribing	251%**

** Statistically Significant At 5% Level. Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.

Longer-Term Prescribing Defined As Having Prescriptions Within The First Three Months After An Injury And Three Or More Visits To Fill Opioid Prescriptions Between The 7th And 12th Months After An Injury.

Key: TD: Temporary Disability

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We Find Little Impact Of “Any Opioids” Use On Duration Of Disability

Estimates For Duration Of Temporary Disability Benefits	Change In Duration Of TD Due To Opioid Use
Any opioids within 24 months after an injury	5%

Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.

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TD Duration 52% Higher Among Workers With At Least 3 Opioid Prescriptions, But...

Estimates For Duration Of Temporary Disability Benefits	Change In Duration Of TD Due To Opioid Use
3 or more opioid prescriptions relative to "no opioid prescriptions"	52%

Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.

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Effect Of 3 Or More Prescriptions Driven By Workers With Longer-Term Prescriptions

Estimates For Duration Of Temporary Disability Benefits	Change In Duration Of TD Due To Opioid Use
3 or more opioid prescriptions relative to "no opioid prescriptions"	52%
3 or more opioid prescriptions (excluding longer-term prescriptions) relative to "no opioid prescriptions"	17%

Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.

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TD Duration Three Times As Long When Workers Were Prescribed Large Opioid Amounts

Estimates For Duration Of Temporary Disability Benefits	Change In Duration Of TD Due To Opioid Use
Opioid amount (MEA) over 2,600 mg	288%**
Opioid amount (MEA) over 8,000 mg	223%**

** Statistically Significant At 5% Level. Regression Controls Include Worker, Injury, And Employer Characteristics, And State Dummies.

Key: MEA: Morphine Equivalent Amount.

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Major Findings

- Workers more likely to receive opioid prescriptions in areas where prescribing is more prevalent
- Longer-term prescriptions increase duration of temporary disability benefits
 - Workers with longer-term prescriptions had more than triple duration of temporary disability benefits when compared to workers without opioids
- Little statistical evidence of impact of small number of prescriptions over short period on duration of temporary disability benefits

About WCRI

- Independent, not-for-profit research organization providing high-quality, objective information about public policy issues involving workers' compensation systems
- Serve as a resource for public officials and stakeholders, but we do not make recommendations or take positions
- Studies are peer-reviewed with a focus on benefit delivery
- Diverse **membership support**, including government agencies, employers, insurers, labor unions, service providers, etc.

Other Areas of Research

- Access to Care
- Ambulatory Surgery Centers
- Comparing Group Health and Workers Compensation
- Drug Formularies
- Fee Schedules
- Litigation & Dispute Resolution
- Medical Prices & Utilization
- Outcomes for Injured Workers
- Physician Dispensing
- Provider Choice
- Return to Work
- Rx and Opioids
- State Comparison Studies on Income and Medical Benefits
- Treatment Guidelines

Recent Hospital Reimbursement Changes: Effects In FL, GA, IN, NC

WCRI
Workers Compensation Research Institute

Main Questions

- What was the specific policy change in reimbursement for hospital services in each of the selected states?
- How did the policy change to hospital reimbursement impact hospital costs and cost growth?
- Were there any unanticipated consequences from these reimbursement changes observed so far?


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Results From Recent Policy Changes In Hospital Reimbursement In Selected States

- **Florida (2015):** 3% decrease in hospital outpatient payments per service following change to fixed amount fee schedule from % of charges; Florida still highest of 18 states
- **Georgia (2014):** Overall decrease in hospital outpatient payments per claim; increase for treatment/operating/recovery room offset by decreases for other hospital outpatient services, consistent with Medicare OPSS method
- **Indiana (2014):** 4% decrease in medical payments/claim, driven by double-digit decrease in hospital payments after adoption of fee schedule; hospital payments/claim now typical
- **North Carolina (2013 and 2015):** Double-digit decrease in hospital outpatient and inpatient payments per claim in 2015 after change to Medicare-based fee schedule

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Georgia: Change From ICD-9-CM Approach To Medicare OPSS



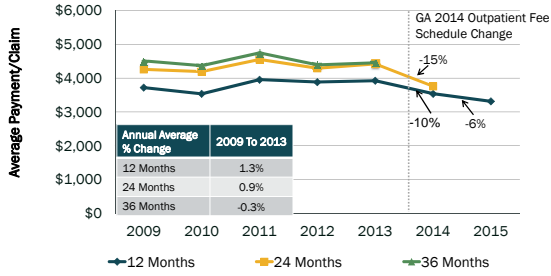
Georgia Outpatient Fee Schedule Change (Effective May 1, 2014)

- GA workers' compensation fee schedule rates for outpatient services changed from the ICD-9-CM approach to the Medicare Outpatient Prospective Payment System (OPSS) method
 - Maximum allowable rate was set at 225% of the final Medicare OPSS payments for each Ambulatory Payment Classification (APC) group (as of 1/1/2014)
 - The prior provision of allowing 62.23% of charges for procedures not on the ICD-9-CM list was eliminated
 - Within each APC, a rate is paid for the primary independent service, and payment for the supportive services is packaged into this APC rate
- Same method applies to hospital outpatient departments and ambulatory surgery centers (ASCs)

Key: ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification. Source: CompScope™ Medical Benchmarks For Georgia, 18th Edition (2017)
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Decrease In GA Hospital Outpatient Payments Per Claim At 12- And 24-Month Maturities After 2013



Annual Average % Change	2009 To 2013
12 Months	1.3%
24 Months	0.9%
36 Months	-0.3%

Claims With > 7 Days Of Lost Time. Not Adjusted For Injury/Industry Mix
Source: CompScope™ Medical Benchmarks For Georgia, 18th Edition (2017)
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Under Medicare Approach, Services Are Packaged Into A Facility Payment

- Under Medicare OPPS/APC approach, many services are packaged into the facility payment
 - Usual packaged services include: routine supplies, anesthesia, operating and recovery room use, implantable medical devices, and inexpensive drugs under a per-day drug threshold packaging amount
- As a result, we observed:
 - Payments per claim for facility services increased because of packaged services
 - Payments per claim for other outpatient services (mainly supplies and equipment, drugs, laboratory tests, and anesthesia) decreased, because these services were no longer separately reimbursed

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The Medicare OPPS Method Affects Other Types Of Services Differently

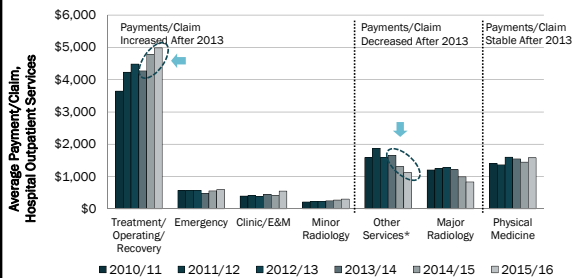
- Most emergency department visits, common major and minor radiology services can be reimbursed separately
- Physical therapy services and evaluation and management services are not paid under OPPS
 - Payments are subject to professional fee schedule

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Increase In Payments/Claim For Operating Room Offset By Decreases In "Other" Outpatient Services



* Other Services group includes supplies and equipment, drugs, and anesthesia.

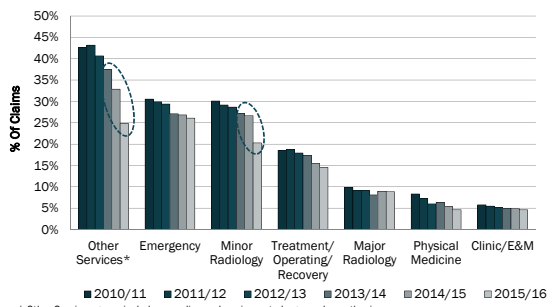
Key: E&M: Evaluation and management. Source: CompScope™ Medical Benchmarks For Georgia, 18th Edition (2017)

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% Of Claims With Hospital Outpatient Care In GA Decreased 2010 To 2015 For Most Service Groups



* Other Services group includes supplies and equipment, drugs, and anesthesia.
 Source: CompScope™ Medical Benchmarks For Georgia, 18th Edition (2017)
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Indiana: Adoption Of Medicare-Based Hospital Fee Schedule

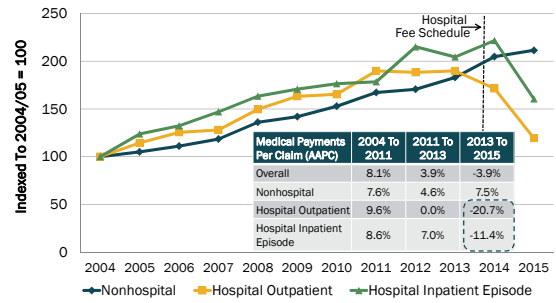
Higher And Growing Medical Costs In Indiana Addressed By 2013 Legislation (HEA 1320)

- Enacted hospital fee schedule at 200% of Medicare, effective 7/1/14
- Capped price of repackaged drugs at average wholesale price (AWP) set by original manufacturer, effective 7/1/13
- Capped price of implants at actual cost plus 25%, effective 7/1/13
- Reimbursement for ambulatory surgery centers (ASCs) and nonhospital services not regulated through a fee schedule
- SEA 294 attempted to correct HEA 1320 (effective 7/1/14) to include ASCs: Based on specific language of the legislation, hospital fee schedule does NOT apply to ASCs

Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)
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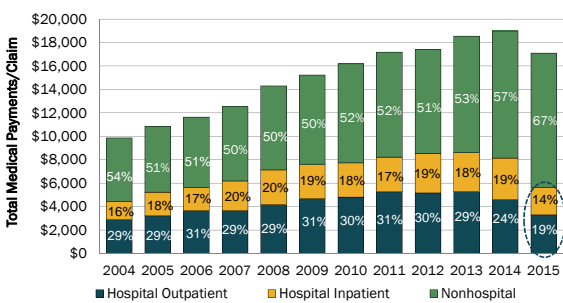
Payments For Hospital Care Drove Recent 4% Decrease In Indiana Medical Payments Per Claim



Key: AAPC: Annual average percentage change. Claims With > 7 Days Of Lost Time At 12 Months Of Experience, Not Adjusted For Injury/Industry Mix. Data shown for 2015 reflect up to 21 months of experience under the hospital fee schedule effective July 1, 2014. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)
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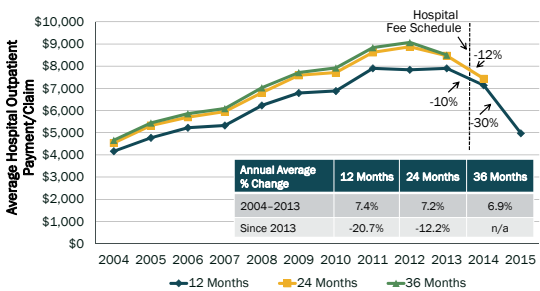
10 PPT Decrease In Share Of Indiana Medical Payments For Hospital Care In 2015



Claims With > 7 Days Of Lost Time At 12 Months Of Experience, Not Adjusted For Injury/Industry Mix. Percentages may not total 100 due to rounding. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)
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Indiana Hospital Outpatient Payments Per Claim Decreased By Double Digits Since 2013



Claims With > 7 Days Of Lost Time, Not Adjusted For Injury/Industry Mix. Data shown reflect up to 21 months of experience under the hospital fee schedule, implemented July 1, 2014. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)
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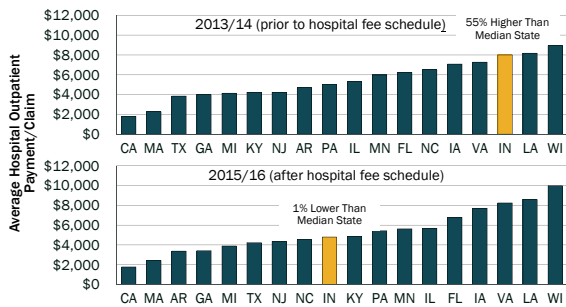


Payments Decreased For Most Indiana Outpatient Services; Operating Room Reflects Medicare OPPS

Change In Hospital Outpatient Metrics In Indiana	2013/14 To 2015/16		
	Annual Average % Or % Point Change		
	Payments/Service	Services/Claim	% Of Claims
Major Radiology	-44.0%	-2.7%	0.4 ppt
Minor Radiology	-23.2%	-3.7%	-5.6 ppt
Physical Medicine	-10.8%	-6.6%	-1.3 ppt
Clinic/Eval. & Mgmt.	-3.6%	3.9%	0.5 ppt
Treatment/Operating/Recovery Room	+15.2%	-21.3%	+0.2 ppt

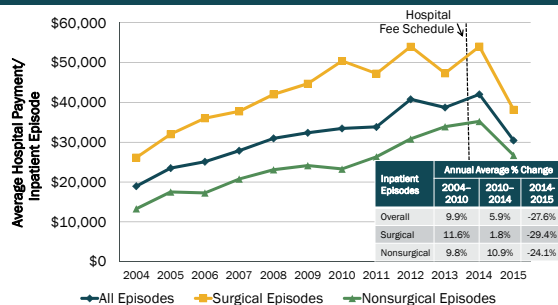
Note: 2015/16 results reflect up to 21 months of experience under the hospital fee schedule.
 Key: Eval. & Mgmt.: Evaluation and management, Claims With > 7 Days Of Lost Time At 12 Months Of Experience, Not Adjusted For Injury/Industry Mix. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)

Indiana Outpatient Payments Per Claim Typical In 2015, Were Among Highest Prior To Fee Schedule



Claims With > 7 Days Of Lost Time, Adjusted For Injury/Industry Mix. Indiana results for 2015 reflect up to 21 months of experience following the introduction of the hospital fee schedule. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)

Large Decrease In Indiana Hospital Inpatient Payments In 2015, Likely Reflects Fee Schedule



Claims With > 7 Days Of Lost Time At 12 Months Of Experience With Hospital Inpatient Episodes, Not Adjusted For Injury/Industry Mix. Data shown for 2015 reflect up to 21 months of experience under the hospital fee schedule. Source: CompScope™ Medical Benchmarks For Indiana, 18th Edition (2017)

2013 Interim FS Changes Likely Contributed To Hospital And ASC Cost Trends In NC After 2012

- Reimbursement changes
 - 2/1/13: Charges for inpatient, outpatient, and ASC services frozen at rates set by each hospital as of June 30, 2012
 - 4/1/13: Frozen rates cut by 15% for outpatient services and ASCs and by 10% for inpatient
 - 4/1/13: Payments for surgical implants capped at cost plus 28%
- Observations 2012 to 2014
 - Decrease in hospital outpatient payments for key services
 - Hospital outpatient facility payments decreased; ASC stable
 - Decrease in hospital inpatient payments per episode

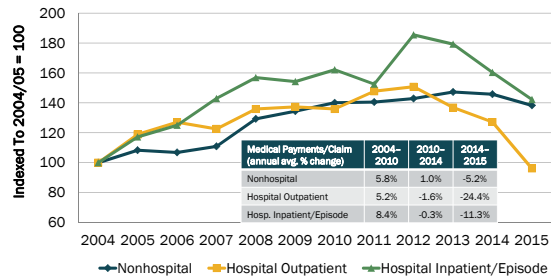
Source: CompScope™ Medical Benchmarks For North Carolina, 18th Edition (2017)

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Medical Payments Per Claim Decreased For All NC Providers In 2015, Especially Hospital Outpatient



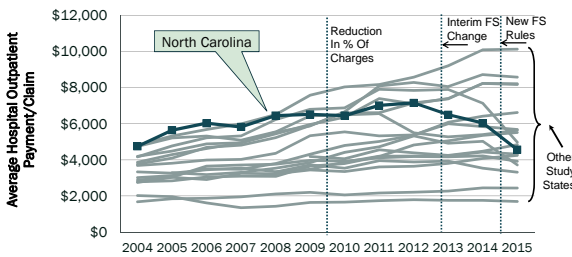
Key: avg.: Average. Claims With > 7 Days Of Lost Time At 12 Months Of Experience, Not Adjusted For Injury/Industry Mix. Source: CompScope™ Medical Benchmarks For North Carolina, 18th Edition (2017)

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Large Decrease In NC Hospital Outpatient Payments Per Claim After Fee Schedule Changes



Claims With > 7 Days Of Lost Time At 12 Months Of Experience, Not Adjusted For Injury/Industry Mix. Source: CompScope™ Medical Benchmarks For North Carolina, 18th Edition (2017)

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Observations About Policy Changes In Hospital Reimbursement

- Trends immediately following hospital reimbursement changes show payment decreases or slower growth in all 4 states, as expected
- Longer-term trends may be influenced by a number of factors, including the following:
 - Fee schedule updates (basis and frequency)
 - Frequency of WC medical care billed by hospitals
 - Reimbursement for medical care by nonhospital providers
 - Behavior changes in response to changes in WC hospital reimbursement (site of service, billing, networks, etc.)
 - Hospital reimbursement by payors outside of WC

Opioid Use Trends And Effective Population Health Management

Major Findings

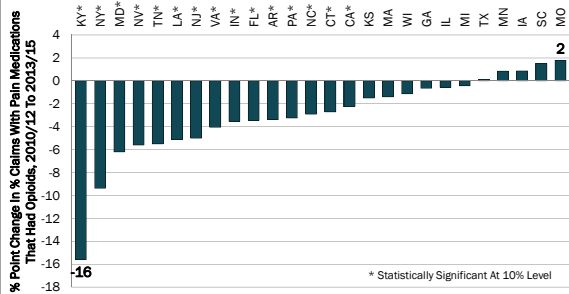
- Frequency and amount of opioids per claim decreased in most states over the study period
- More than 2 out of 3 injured workers with pain medications received opioids in majority of states
- Amount of opioids per claim continued to be higher in LA, PA; also higher in NY despite large decrease
- Opioids were frequently dispensed together with other sedating drugs
- Few injured workers with longer-term opioids received guideline-recommended services

Nonsurgical claims with more than 7 days of lost time with Rx paid under workers' comp

State And Federal Policies Addressing Opioid Prescribing And Dispensing

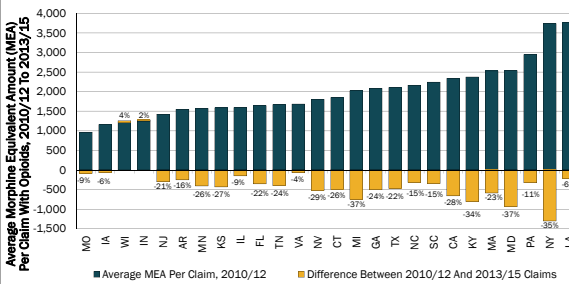
- Prescription drug monitoring programs (PDMPs)
- Treatment guidelines addressing opioids
- Drug formularies
- Limits on prescribing and dispensing of opioids
- Other policies addressing opioid prescribing
- Up-scheduling of hydrocodone-combination products
- CDC Guideline for Prescribing Opioids for Chronic Pain

Fewer Injured Workers With Pain Medications Received Opioids In Latest Study Period



2013/15: Nonsurgical Claims With > 7 Days Of Lost Time, Injuries Occurring From October 1, 2012, To September 30, 2013, Prescriptions Filled Through March 31, 2015; Similar Notation Used For 2010/12
 Source: WCRI. *Interstate Variations In Use Of Opioids, 4th Edition (2017)*

Significant Reductions In Amount Of Opioids Per Claim Seen In Most States



Source: WCRI. *Interstate Variations In Use Of Opioids, 4th Edition (2017)*

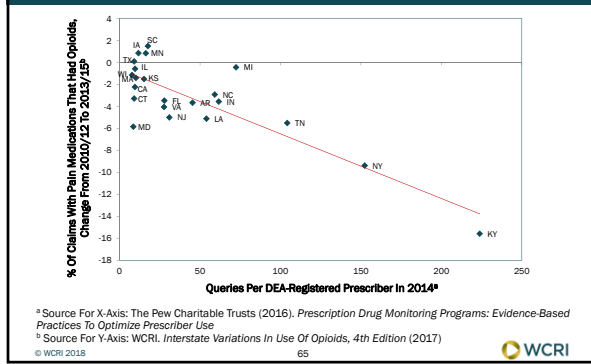
Several Reforms Coincided With Reductions In Opioids Filled Over The Study Period

	KY	NY	MD	MI	TN	MA	TX
Change In % Claims With Pain Medications That Had Opioids	-16 ppt	-9 ppt	-6 ppt	0 ppt	-5 ppt	-1 ppt	0 ppt
Change In Average Amount Of Opioids Per Claim	-34%	-35%	-37%	-37%	-24%	-23%	-22%
PDMP Use	✓	✓	✓	✓	✓	✓	
Chronic Opioid Guidelines		✓				✓	
Drug Formulary							✓
Quantity Limits	✓			✓	✓		
Provider Education CME	✓					✓	✓
Pain Clinic Regulations	✓				✓		✓

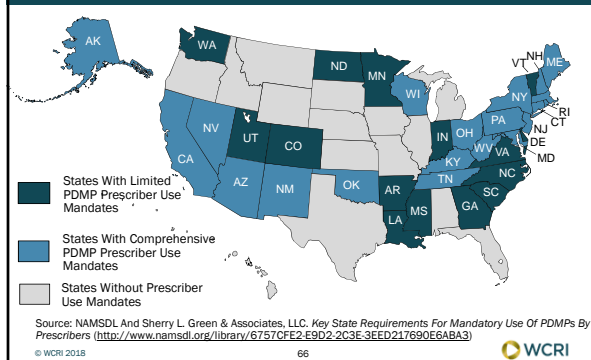
Key: CME: Continuing Medical Education. PDMP: Prescription drug monitoring program

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More PDMP Queries By Prescribers Correlated With Decreases In Opioid Dispensing



20 States Adopted Comprehensive PDMP Prescriber Use Mandates As Of 12/2016



IL: Workers With Physician- And Pharmacy-Dispensed Opioids Had Higher Rate Of Opioids & Muscle Relaxants

	% Of IL Claims With Opioids That Had Opioids, By Dispensing Point	% Of IL Claims With Opioids That Concomitantly Received Muscle Relaxants, By Dispensing Point
Pharmacy-Dispensed Opioids Only	61%	29%
Physician-Dispensed Opioids Only	28%	34%
Both Physician And Pharmacy-Dispensed Opioids	10%	52%

Similar patterns were seen in other states with frequent physician dispensing of opioids and muscle relaxants: CA, CT, FL, GA, MD, and PA

Source: WCRI. *Interstate Variations In Use Of Opioids, 4th Edition (2017)*

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Medical Treatment Guidelines For Chronic Opioid Management Recommend

- Urine drug testing
- Psychological and psychiatric evaluations and treatment
- Active physical therapy

Note: Guideline recommendations are based on widely-accepted medical treatment guidelines, including ACOEM, APS/AAPM, ODG, and state guidelines (CO, CT, LA, MA, UT, WA). See Appendix B of WCRI's *Longer-Term Dispensing of Opioids, 4th Edition*.

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Gap Observed Between Practice And Treatment Guideline Recommendations

	Median Of States Studied	Range Among States Studied
% Of Claims With Opioids That Had Opioids On A Longer-Term Basis	6%	3%–18%
Of These, % That Received Recommended Services		
Drug Testing	40%	22%–59%
Psychological Evaluation	7%	3%–30%
Psychological Treatment	3%	1%–12%
Active Physical Therapy	87%	73%–91%

Nonsurgical Claims With > 7 Days Of Lost Time That Were Identified As Receiving Opioids On A Longer-Term Basis, Injury Year 2012, Prescriptions Filled Through March 2014, Average 24 Months Of Experience
Source: WCRI. *Longer-Term Dispensing Of Opioids, 4th Edition (2017)*

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Recap

- Frequency and amount of opioids per claim decreased in most states over the study period
- More than 2 out of 3 injured workers with pain medications received opioids in majority of states
- Amount of opioids per claim continued to be higher in LA, PA; also higher in NY despite large decrease
- Opioids were frequently dispensed together with other sedating drugs
- Few injured workers with longer-term opioids received guideline recommended services

Note: Nonsurgical claims with more than 7 days of lost time with Rx paid under workers' compensation

Thank You For Your Attention

- For comments/questions about the findings, please e-mail Ramona Tanabe at rtanabe@wcrinet.org
- Don't miss our 35th annual conference, February 28-March 1, 2019, in Phoenix, AZ:
<https://wcrinet.org/news/events>
