Workers' Comp

# Pharmacy Patterns as Predictors of Workers' Compensation Claim Complexity

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Part 2: Pharmacy Patterns

## Every Prescription Tells a Story About Claim Trajectory — and Most Payers Aren't Reading It Until It's Too Late

Workers' compensation claims vary dramatically in complexity, duration, and cost. While some injured workers recover quickly with minimal intervention, others experience prolonged disability requiring extensive medical treatment. Pharmacy data provides a unique window into claim trajectory, often revealing patterns that predict complexity before other clinical indicators emerge.

This analysis examines how specific medication patterns correlate with claim severity, enabling more targeted case management and early intervention strategies that can reduce claim duration and improve outcomes for injured workers.

## Key Findings: Pharmacy Patterns Associated with Claim Complexity

## 1. When Opioids Set the Trajectory

The timing, duration, and dosage of opioid therapy strongly predict claim complexity. A study in the Journal of Occupational and Environmental Medicine found that claims involving opioid prescriptions within the first 90 days post-injury demonstrate significantly longer disability durations compared to non-opioid claims (Webster et al., 2007). Similarly, research in the journal Spine found that workers receiving opioids with daily doses >50 morphine milligram equivalents (MME or MED) within the first three months post-injury face substantially lower likelihood of returning to work (Franklin et al., 2008).



Our analysis reveals concerning patterns as claims age. High-dose opioid prescriptions (MED >90) appear in 14% of older claims (6+ years) compared to 5.4% of newer claims (<2 years) — a 2.6-fold increase. Average opioid dosing demonstrates similar growth, rising from 36 MED in newer claims to 52 MED in older claims (44.4% increase). This pattern intensifies with chronic opioid therapy (>90 days consistent use), which affects 39.4% of older claims versus 15% of newer claims — a 163% increase. Together, these patterns indicate progressive opioid exposure associated with prolonged disability and potential dependency, which complicates resolution and extends claim duration.

Claims with longer-term opioid prescriptions incur medical costs approximately three times higher than non-opioid claims. Our data shows older claims average more prescriptions (across all therapeutic classes), reflecting 18.6 scripts annually compared to 15.3 in newer claims — a 21.6% increase reflecting escalating treatment complexity. WCRI has documented similar patterns, noting substantially higher medical costs and indemnity payments for longer-term opioid claims (Thumula, Liu, and Wang, 2024).

## 2. Polypharmacy and Dangerous Drug Combinations

Claims featuring concurrent use of multiple medication classes, particularly high-risk combinations, consistently demonstrate greater complexity. Notably, polypharmacy — defined as regular use of five or more medications — is a key indicator of claim complexity. This pattern emerges early, as claims involving three or more concurrent therapeutic classes within the first six months post-injury are six times more likely to remain open at

18 months compared to those with simpler medication regimens. The health implications are significant, as polypharmacy is strongly associated with increased risk of adverse outcomes, including falls, frailty, disability, and mortality, with preventable adverse drug events estimated to account for 5%-28% of acute medical admissions (Varghese et al., 2024).



Our recent analysis reveals that this medication pattern increases dramatically with claim duration. At the prescription level, polypharmacy occurs 13.6 times more frequently in claims over six years old, affecting 56.9% of these claims versus 26.6% of newer claims. This elevated prevalence is mirrored in costs, with polypharmacy representing 40.7% of medication spend in older claims compared to just 20.3% in newer claims. This doubling of both prevalence and costs demonstrates how medication regimens grow increasingly complex as claims mature.

Dangerous drug combinations amplify these risks. The CDC highlights that concurrent opioid-benzodiazepine or opioid-muscle relaxant use significantly increases adverse outcome risk, including overdose (Dowell et al., 2022). Our analysis reveals opioid-benzodiazepine combinations are 17.3 times more prevalent in older claims. Multiple medications increase potential for drug-drug interactions, medication non-adherence, prescribing cascades, and care transition complications — particularly in older adults with age-related pharmacokinetic changes. This striking increase in dangerous medication interactions explains why longer-duration claims consistently demonstrate higher costs and complexity.

## 3. Topical Medications and the Cost-Benefit Disconnect

Topical medications have displaced opioids as the highest cost drug category in workers' compensation claims (Enlyte, 2025)**. In out-of-network pharmacy channels, topicals represent only 13.9% of prescriptions but account for 40.2% of spending.**

The most problematic segment — abusively-priced opportunistic products including private-label topical analgesics — often offer little-to-no clinical advantage over standard alternatives yet command premium pricing. WCRI has documented that physician-dispensed topicals are often priced 10-20 times higher than retail equivalents (Thumula, 2019).

This dramatic cost escalation directly impedes claim resolution. Research shows that as overall claim costs rise, return-to-work likelihood decreases and claim duration extends. Claims featuring these private-label topicals become entangled in excessive treatment patterns correlating with prolonged disability and increased litigation rates, creating substantial financial burdens that can derail otherwise straightforward claims.

## 4. Identifying Behavioral Health Complications Through Pharmacy Data

Psychotropic medications often signal underlying psychological factors that complicate recovery. Our analysis reveals antipsychotic medications appear 4.6 times more frequently in older claims (3.2% vs 0.7% of prescriptions) and represent 3.6 times more medication spend (5.4% vs 1.5%). This dramatic increase suggests psychological complications develop during prolonged recovery or are diagnosed as claims progress.

NCCI's research shows claims with mental health diagnoses are six times more expensive than those without; even after adjusting for medical conditions and surgery, they remain 2.5 times more costly (NCCI Insights, 2024). This aligns with our finding that older claims show higher psychotropic medication use alongside significantly more prescriptions overall, reflecting intensified treatment complexity.

The relationship between physical injury and mental health creates complex clinical pictures requiring intensive, prolonged intervention. Early psychotropic medication use indicates psychosocial complications requiring specialized intervention to prevent escalation. Research in the Journal of Occupational Rehabilitation demonstrates that early identification of psychosocial factors — including those indicated by psychotropic medication use — can prevent claim complexity and improve return-to-work outcomes (Farin et al., 2018).

## 5. The Multiplier Effect: How Prescription Choices Compound Costs

Pharmacy utilization patterns emerging directly from prescription history data drive claim cost escalation. Three key factors significantly impact pharmacy spending: specialty medications (including high-cost biologics up to $10,000 monthly) generating 2.7 times higher pharmacy costs; abusively-priced products representing 3.9% of prescription volume but 20.5% of spending and associated with doubled pharmacy expenses across the claim lifecycle; and polypharmacy resulting in tripled pharmacy expenses along with 15-25% longer claim durations.

Comparing claims by duration reveals the average cost per prescription increases 43.5% in older claims ($216.85 vs $151.12), while specialty medication spend grows from 1.1% to 21.1% — a 1,818% increase. These prescription-driven patterns demonstrate how initial medication choices set vastly different cost trajectories, underscoring the critical importance of early identification and targeted intervention.

**Claim Severity Stratification Analysis**

Pharmacy risk increases meaningfully with claim age, creating distinct risk profiles that warrant differentiated management approaches. Our analysis reveals that newer claims are overwhelmingly low risk, while older claims shoulder a disproportionate share of higher risk scores. Claims in the 2–5 year and 5–10 year age ranges account for nearly all observed “high” and “critical” risk classifications, reflecting indicators — such as high-dose regimens, concurrent high-risk medications, and early aggressive treatment initiation — documented in evidence-based literature as predictors of claim complexity. Importantly, risk escalation is gradual rather than abrupt, suggesting multiple opportunities for early intervention before claims progress to higher-risk tiers. These findings support a tiered management approach: prevention and education for newer claims, structured pharmacy review for mid-age claims, and sustained, coordinated clinical management for long-standing claims.

**When stratifying claims by severity or risk score, distinctive patterns emerge:**

### Low Severity Claims

- Typically involve acute injuries with clear treatment pathways
- Limited to 1-3 therapeutic classes
- Minimal or no opioid utilization
- Predominant age range: 30-45 years
- Short duration of therapy (6-9 months)
- Average monthly pharmacy spend: <$150
- Average total claim cost: ~$3,000

### Moderate Severity Claims

- Often involve more complex injuries requiring multiple treatment approaches
- Average of 3-5 therapeutic classes
- Short-term, lower-dose opioid utilization common
- Higher prevalence of comorbidities (16-21% of claims)
- Predominant age range: 45-60 years
- Moderate duration of therapy (6 months-2 years)
- Average monthly pharmacy spend: $150-$700
- Average total claim cost: ~$35,000

### High Severity Claims

- Complex injuries often involving multiple body systems
- Average of 5+ therapeutic classes
- Long-term opioid therapy more common
- Higher incidence of psychotropic medication use
- Significant comorbidity presence (30-50% of claims)
- Higher representation of workers aged 50+
- Extended therapy duration (4-8+years)
- Average monthly pharmacy spend: $800-$2,500+

- Average total claim cost: ~$85,000

## Implications for Claim Management

Understanding these pharmacy patterns enables more targeted early intervention strategies:

1. **Early Triage to Case Management:** Claims exhibiting warning signs in pharmacy patterns would benefit from additional clinical oversight. Pre-emptive referral to nurse case management provides specialized clinical expertise to coordinate care, monitor medication regimens, and facilitate appropriate treatment pathways before complexity escalates
2. **Risk Stratification:** Early pharmacy patterns can inform predictive models to identify claims at risk for complexity, allowing for appropriate resource allocation
3. **Medication Review Programs:** Implementing structured medication reviews for claims showing emerging indicators of complexity can help prevent adverse outcomes
4. **Alternative Pain Management:** Early introduction of non-opioid pain management strategies for at-risk claims may reduce dependency and improve outcomes
5. **Psychosocial Intervention:** Timely identification of psychological factors through medication patterns allows for appropriate mental health support
6. **Network Optimization:** Directing care to providers and pharmacies who demonstrate appropriate prescribing and dispensing patterns can significantly reduce claim complexity

## Conclusion

Pharmacy utilization patterns provide valuable actionable insights into potential claim complexity. By identifying these patterns and implementing targeted interventions, payers and employers can potentially reduce claim duration, lower costs, and — most importantly — improve outcomes for injured workers.

Understanding the relationship between medication use and claim complexity represents a significant opportunity to enhance workers' compensation claim management through data-driven, proactive approaches that benefit all stakeholders in the system.

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