

COMORBIDITY IN WORKERS' COMPENSATION:

Preventing and Identifying Comorbidity to Reduce the Impact on Workers' Compensation Claims

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Comorbidity can have a significant negative impact on workers' compensation claims and is of concern as incidence appears to be increasing in the general population as well as workers' comp.¹ In general, comorbidity refers to when a person has one or more medical or psychiatric conditions or diseases that are present at the same time as the injury. An example of this is someone who has chronic low back pain and diabetes.

In addition to the injured worker's age, having a comorbid diagnosis in a claim is most predictive of lost time from work.² A large database of actual disability experience reports that certain comorbid conditions have a greater impact on return to work. For example, the median duration of disability for a lumbar strain is 10 days, and 26 days for depression with anxiety. When these two conditions co-exist, the median duration of disability jumps to 153 days.

A recent study found that workers' compensation claims with a comorbidity diagnosis that occurs within 12 months after injury have a higher number of transactions and double the medical costs over similar claims without comorbidity.³ Furthermore, the presence of comorbidity can confound diagnoses, complicate treatment of an injury, delay return to work and increase the overall duration of the claim.

To illustrate, consider an injured maintenance worker who fractured his ankle due to a fall. His recovery was complicated as a result of multiple comorbid conditions present at the time of the injury, including:

- Chronic lung disease
- High blood pressure
- Active smoker

Since the injured worker smoked and nicotine is a vasoconstrictor, he had a decreased ability to heal his wounds and recover from infections, leading to an eventual amputation of his leg. Additional diagnoses of depression, opioid addiction, obesity, insomnia and diabetes followed at 1½ years after surgery. His sedentary lifestyle and constant pain may have been contributory. Additional medications prescribed to treat these new conditions could have also hindered his ability to stay active and increased his risk of falling and reinjuring himself. His high blood pressure and chronic lung disease became uncontrolled due to significant weight gain.

Understanding the contribution of both pre- and post-injury comorbidity poses a major challenge for workers' compensation payers due to significant impact on the cost and duration of claims. To reduce the impact of comorbid conditions on the claim, payers should consider implementing tools and strategies to proactively identify and manage these claims.



The five most common comorbid diagnoses identified in the workers' compensation transactions study⁴ include hypertension, drug abuse (inclusive of alcohol and tobacco), diabetes, chronic pulmonary conditions and obesity.

Share of Claims with the Top Comorbidity Diagnoses Impacting Workers' Compensation (*2009 data)	
Hypertension	2.8%
Drug Abuse	2.1%
Diabetes	1.0%
COPD	0.5%
Obesity	0.3%

An analysis of the top "non-injury" therapeutic categories in our workers' compensation population supports these findings with blood pressure medications and respiratory drugs in the top ancillary categories. It also reveals utilization of additional categories that may point to psychological comorbidity as another important category bearing future study. Antidepressants, the top category used by almost 5% of our claimants, will be discussed below.

Top Ancillary Therapeutic Categories By WC Claimant Use and Script Count		
Therapeutic Category	Percent of Utilizing Claimants	Percent of Prescriptions
Antidepressants	4.49%	6.91%
Anti-anxiety Agents	2.62%	2.67%
Hypnotics	2.17%	2.63%
Ulcer Drugs	2.14%	2.37%
Antihypertensives	1.41%	1.65%
Antihyperlipidemics	0.96%	1.35%
Beta Blockers	0.93%	1.00%
Anticoagulants	0.62%	0.62%
Anti-emetics	0.54%	0.29%
Antipsychotics/Antimanics	0.48%	0.63%
Diuretics	0.47%	0.52%
Calcium Channel Blockers	0.47%	0.50%
Anti-asthmatic/Bronchodilators	0.39%	0.85%
Antidiabetics	0.13%	0.22%

Source: Healthcare Solutions, Data on file. 2013

Hypertension

The most prevalent comorbid diagnosis in this population and in the US population estimates is high blood pressure.¹ How might hypertension lead to complications or prevent recovery from a workplace injury? While uncontrolled hypertension is best known for an increased risk of stroke and heart attack, hypertension can complicate the safe completion of surgical procedures by decreasing cardiovascular stability and increasing the risk of a hypertensive emergency, defined as a "rapid and progressive decompensation of vital organ function caused by an inappropriately increased blood pressure."⁵

In addition, the need for pharmaceutical treatment of hypertension with one or more medications can complicate treatment of workers' compensation cases due to the presence of polypharmacy, i.e., taking multiple medications often from multiple providers. When patients are prescribed five or more medications, there is an increased risk of drug interactions and adverse drug reactions or side effects. This can lead to additional drug therapy prescribed to treat the adverse event as a new medical condition and quickly spiral out of control. The more drugs a patient is prescribed, the increased likelihood that there will be poor adherence with a large regimen of medications. Decreased adherence to appropriate medication therapy can worsen symptoms and lead to complications including increased use of medical resources, e.g., physician's office, emergency room or hospital visits.⁶

Drug Abuse

Substance use disorders over the previous year have been reported in 8% of adults in the United States.⁷ This is likewise problematic and can be a major road block in the injured worker's treatment and return to work. Several medications commonly prescribed in workers' comp (e.g., opiates, stimulants, anxiolytics) are at high risk for abuse leading to chronic, compulsive, and uncontrolled use; cravings and dose escalation; and continued use despite harm. Prescription and/or illicit drug abuse clearly presents obstacles to implementing a safe, appropriate pain management regimen for an injured worker.⁸ Substance use disorder outside of drugs or medications can also have negative effects on the injured worker's recovery. Tobacco use causes peripheral vascular damage,⁹ which can prevent solid spinal fusions¹⁰ and increases the length of time for a fracture to heal, as with our case example.¹¹ Alcohol use can increase drowsiness and other side effects when taken with the prescription drugs generally used in workers' compensation, for example.



Diabetes

Diabetes can significantly contribute to increased cost and claim duration, and was a comorbidity in ~20% of claims for sprains/strains, and musculoskeletal diseases in the NCCI study. Diabetes causes changes in blood supply, and it is known to inhibit the healing of wounds from burns, fractures and orthopedic surgery. Diabetic nerve pain can also cause delays in recovery if the pain prevents efforts at increased activity and if the drugs used to treat pain result in unwanted side effects.¹²

COPD

Chronic Obstructive Pulmonary Disease (primarily chronic bronchitis and/or emphysema) affects 5% to 10% of the population and is the 3rd leading cause of death in United States.¹³ Even though gender is evenly split in this study, males account for 65% of all claims. However, there is a higher-than-average proportion of females represented with chronic pulmonary disease than any other category.

The most common cause of COPD is tobacco smoking and genetic factors influence the risk. Unfortunately, smoking cessation as well as supplemental oxygen are the only medical therapies to reduce disease progression and mortality.¹⁴ Additional evidence also indicates that up to 19% of COPD cases are work related; occupations include the mining industry, construction and public works, iron and steel, textiles and grain. There have been many experimental studies that have shown that various chemicals can cause COPD. Even though there has not been a study to determine the disease contribution of smoking versus occupational exposure in COPD patients, adjustments for associations between the two have been done in epidemiological studies.^{15,16} As a result, occupation history should be taken into consideration when assessing COPD comorbidity.¹⁷

Obesity

Claims with obesity represent the greatest amount of lost-time, and obesity is the most prevalent comorbidity associated with 29% of both musculoskeletal (the most common type of injury^{18,19}) and sprain/strain type injuries.²⁰ It is estimated that approximately 75% of men and 64% of women in the US population suffer from being overweight (body mass index (BMI) ≥ 25.0) or being obese (BMI ≥ 30.0).²¹ Being overweight or obese affects 68% of adults and carries the increased risk of related comorbidity such as diabetes, cancer and cardiovascular diseases including hypertension, asthma, gall bladder disease, osteoarthritis and chronic back pain,²² which can significantly inhibit recovery from workplace injuries. In fact, obesity is known to present challenges as it relates to movement.²³ It can increase the chance of becoming injured and prolong optimal recovery since the ability to move is a key part of post-injury rehabilitation.

Depression

In addition to the top five comorbid conditions cited above, claims data analyzed during the creation of our annual *Drug Trends Report* shows significant presence of antidepressant medications.²⁴ While many antidepressants may be prescribed for treatment of chronic musculoskeletal and neuropathic pain conditions, and some have indications for anxiety and insomnia, there is a strong association between work-related injury and the development of clinical depression. The loss of work, financial security and productivity during the injury recovery period can lead to reduced self-esteem and the development of depressive symptoms.

Depression has been shown to affect 18% of patients within one year of suffering a minor injury. The sustained, negative impact of depression is seen in statistics showing injured workers with depression being 2.3 times more likely not to return to their pre-injury work status or pre-injury levels of function at one year post-injury.²⁵ As the claim ages with unresolved chronic pain, there is a significant increase in antidepressant use with over 22% of injured workers in our mature claims population prescribed an antidepressant.²⁶

Chronic disease and depression are interrelated. On average, one out of every three patients suffering from chronic pain also suffers from depression,²⁷ and 45% of those with one mental health disorder have at least one additional psychiatric comorbidity. In workers' compensation claims specifically, there is often treatment for anxiety disorders occurring with treatment for depression.^{28,29} Depression not only increases the risk for disease but worsens outcome of disease comorbidity.



Regardless of whether comorbidity occurs before the work-related injury or as a result of it, its presence can greatly complicate the claim.³⁰ A common perception is that a pre-existing comorbidity should not be covered under the claim. However, in some cases it may be worth addressing, particularly if the pre-existing condition is causing serious complications or preventing the repair and rehabilitation of the injury. Given the tremendous impact of lost time and medical costs associated with comorbidity, strong consideration should be given to the prevention and identification of comorbid conditions.



Prevention

Steps that can be taken to prevent comorbidity and morbidity include implementing wellness and health promotion programs at the workplace. Wellness programs can include on-site fitness facilities, group walks and hikes, employers paying for weight loss programs, availability of healthy snack and beverage options, accessibility to blood pressure monitors, and the like. Programs such as these have demonstrated a 4:1 return on investment as savings on health care dollars.³¹ Additionally, consideration can be given to an occupational ergonomics consultation. These services aim to prevent musculoskeletal disorders by fitting the job to the worker based on the tasks they perform and designing the work environment to reduce the risk of injury.

Identification

Typically, 85% of first time comorbidity diagnoses are made within the first year of the claim. When workers' compensation injuries do occur, it is vital to identify any existing comorbidity early in the life of the claim so steps can be taken to address them. This can be accomplished through the following ways:

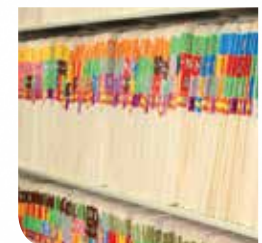
- Offer on-site acute care where comorbid screening can be performed immediately.³²
- Establish an early-intervention triage hotline that utilizes nurses to serve as a liaison for all services the injured worker will need during the course of injury treatment, and through which comorbidity assessment can be performed.
- Consider early referral to a nurse case manager when comorbidity is identified to mitigate the risk of associated complications that can delay healing and return to work.³³
- Communicate and obtain buy-in for expected recovery time from both injured worker and medical provider using disability experience data and tools such as ODG's Comorbidity Calculator.³⁴
- Implement a comprehensive drug formulary to trigger prior authorization for medications used to treat comorbid conditions.
- Establish drug utilization reviews to identify comorbidity through medication use, and initiate open dialogues with the treating providers to address options for managing these conditions.
- Share diagnosis codes by partnering medical benefits with pharmacy benefits to identify comorbidity.
- Adopt a medication therapy management (MTM) program that allows for scheduled review of care with a physician and/or pharmacist for injured workers utilizing multiple providers, in order to monitor treatment and progress and offer additional care and guidance to the injured worker.³⁵

With a strong correlation between the presence of comorbidity and increased cost and duration of claims, the benefits of addressing comorbid conditions are clear.³⁶ Regardless of whether a comorbid condition is causally related to the effects of the workplace injury or pre-existing, its presence prolongs or even prohibits full recovery and the eventual return to full function and work. It behooves both the employer and insurer to work collaboratively and with their managed care partner to implement reasonable and affordable solutions to better protect and care for employees and injured workers.



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