Spotlight: Concomitant Use of Opioids and Benzodiazepines, Other Central Nervous System Depressants

In our recent study, *Interstate Variations on Use of Opioids, 4th Edition*, WCRI looked at the concomitant use of opioids and other central nervous system depressants such as benzodiazepines (Valium® and Xanax®), muscle relaxants (Soma® and Flexeril®), and sedatives (Ambien®) among injured workers.

Several clinical guidelines, including the recently released CDC guideline for prescribing opioids for chronic pain, caution about the potential dangers of taking these medications together. Concomitant use of opioids and other classes of medications with a sedating effect is associated with a heightened risk of respiratory depression and death. The FDA now requires boxed warnings on opioids, benzodiazepines, and other central nervous system depressants stating the serious risks when combining these medications.

As seen in the figure below, we found in the study period 2013/2015, 35 to 45 percent of workers with opioids had received at least one other central nervous system depressant prescription dispensed within one week of the opioid prescription fill in most of the 26 states studied. Moreover, in a few states, the concomitant use of opioids and other central nervous system depressants was noticeably higher compared to the other study states.

For example, in Louisiana, one in two injured workers had concomitant use of opioids and other central nervous system depressant drugs. A lower percentage (30-31 percent) of injured workers in Missouri and New Jersey with opioids concurrently received central nervous system drugs.

**Figure 5.1d** Percentage of Claims with Opioids That Had Concomitant Use of Central Nervous System Depressants, 2013/2015

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1 Patterns of Opioid Use and Risk of Opioid Overdose Death Among Medicaid Patients, Renu K. Garg, PhD, Deborah Fulton-Kehoe, PhD and Gary M. Franklin, MD, MPH study showed that the risk of opioid overdose death was 7 times higher for Medicaid patients with concomitant use of opioids and benzodiazepines and 12 times higher for those taking opioids, benzodiazepines and muscle relaxants together, compared to those without concomitant use of sedating drugs.

2 The underlying data include nonsurgical claims with more than seven days of lost time that had prescriptions filled by injured workers over the defined period and paid for by a workers’ compensation payor. 2013/2015 refers to claims with injuries occurring in October 1, 2012, through September 30, 2013, and prescriptions filled through March 31, 2015.

3 The 26 states are Arkansas, California, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Wisconsin. These states represent over two-thirds of the workers’ compensation benefits paid in the United States.
**Opioids and Benzodiazepines**

Concomitant use of opioids and benzodiazepines is known to be associated with adverse patient outcomes, as well as increased workers compensation costs. In fact, benzodiazepines were involved in 31 percent of opioid overdose deaths in 2011.¹ CDC guidelines recommend practitioners to avoid prescribing opioids and benzodiazepines together when possible due to the heightened risk of potentially fatal overdoses.

Despite these concerns, benzodiazepines and opioids were prescribed within one week of each other to 1 out of 15 injured workers with opioids in three states – Louisiana, Massachusetts and Wisconsin. By contrast, less than 1 percent of injured workers with opioids received benzodiazepines in Texas, where preauthorization is required prior to prescribing benzodiazepines.²

![Figure 5.1a Percentage of Claims with Opioids That Had Concomitant Use of Benzodiazepines, 2013/2015](image)

**Opioids, Muscle Relaxants and the “Holy Trinity”**

Opioids and muscle relaxants were frequently used concurrently by injured workers in all 26 states studied. Among injured workers with opioids, 28 percent (in Missouri and New Jersey) to 48 percent (in Louisiana) also filled a muscle relaxant prescription within one week of the opioid fill.

We also examined whether injured workers were receiving opioids, benzodiazepines, and muscle relaxants together. The combination of these three medications, referred to as the “holy trinity,” is frequently abused as they are known to increase feelings of euphoria. In most of the study states, only 1 to 2 percent of injured workers with opioids also filled benzodiazepines and muscle relaxants within one week of each other in all states except Texas, where the measure was .1 percent, and Louisiana where the measure was 3

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¹ Jones and McAnicnch (2015).
² Under the Texas formulary, preauthorization has been required for prescribing benzodiazepines since September 2011 for injuries after September 2011 and since 2013 for injuries before 2011.
percent. One caution: the actual prevalence of these combinations may be higher than reported because the only data captured in the report is medications paid for by workers’ compensation payors.

**The Role of Physician Dispensing**

In 7 states with frequent physician dispensing of opioids and muscle relaxants, the concomitant use of opioids and muscle relaxants was more prevalent when injured workers were dispensed these medications both at physician offices and pharmacies, which shows that the utilization of these potentially dangerous combinations is more prevalent among claims where pharmaceutical care is less coordinated. Injured workers who only received their opioid prescription at physician’s offices also had a higher rate of concomitant use of muscle relaxants than injured workers who filled opioid prescriptions only at pharmacies in many of these states.

For example, in California, 59 percent of injured workers who received opioids prescriptions from both physicians’ offices and pharmacies had concomitant use of muscle relaxants. The measure was 39 and 32 percent respectively among workers who only had physician-dispensed opioids and pharmacy-dispensed opioids.

**Chronic Opioid Use and Other Drugs**

Unsurprisingly, concomitant use of opioids and other drugs is more frequent among claims with chronic use. In 17 states with adequate data, we were able to identify injured workers with at least 60 days of opioids supplied during any 90-day period (our measure of chronic opioid use). Among these workers, prevalence of concomitant use of opioids with other central nervous system drugs was higher that the figure among all opioid users.

For example, in Massachusetts, opioids and benzodiazepine prescriptions were seen together in 9 percent of all claims with opioids. This figure rose to 28 percent among injured workers who received opioids continuously for over 90 days.

**Trends Across Study States**

Generally, we saw a downward trend in the percentage of injured workers receiving opioids that had concomitant use of opioids and other central nervous system depressant drugs between the 2010/2012 study period and 2013/2015 study period in half of the study states. Sizeable reductions were seen in Kentucky (7 percentage points) and Texas (5 percentage points). Contrary to the general trend, Nevada showed an increase of 7 percentage points.

**Conclusions**

Despite the reductions in prescription opioids dispensed for the treatment of workplace injuries, the dangers of opioid misuse resulting in overdose deaths and addiction continue to be a top priority public health problem in the United States. Moreover, the most recent trends in opioid related overdose deaths published by the CDC are worrying. Between 2010 and 2015, drug overdose deaths in the general population increased or remained the same across all states, and the dangers of combining opioids with other central nervous system depressants may put injured workers at harm.

WCRI has been studying the interstate variations of use of opioids and the longer-term use of opioids among injured workers since 2011. For the full report regarding the concomitant use of opioids and other
central nervous system depressants, as well as the latest finding on interstate variations of opioid use, please click here.