

COLLEGE OF PHARMACY
The UNIVERSITY of OKLAHOMA HEALTH SCIENCES

PRESCRIBING PATTERNS OF OPIOIDS AND BENZODIAZEPINE PRESCRIPTIONS WITH OR WITHOUT GABAPENTIN IN AN OKLAHOMA MEDICAID POPULATION FROM 2020 TO 2024


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05/16/25

Abstract: #29
IRB Approved

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Disclosures


- Chinemerem Opara
- Conflict of Interest: None
- Sponsorship: None
- Proprietary information or results of ongoing research may be subject to different interpretation
- Speaker's presentation is educational in nature and indicates agreement to abide by the non-commercialism guidelines provided



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Objectives

- Analyze the prescribing trends of opioids, benzodiazepines, gabapentinoids, and naloxone among Oklahoma Medicaid member
- Assess trends of current co-prescribing patterns, specifically combinations of opioids, opioids with benzodiazepines, and opioids with both benzodiazepines and gabapentin



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Background


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Background

- Opioids remain a cornerstone in the management of pain
- Benzodiazepines (BZDs) are utilized as sedatives in intensive care units and treatment of insomnia
- Both opioids and BZDs exert their effects on the central nervous system, which can lead to respiratory depression
- Overdose death rate among patients co-prescribed opioid and BZDs is ten times higher compared to those who are prescribed opioids alone
- Between 2001 and 2016, the concurrent prescription of opioids and BZDs and the concurrent use of opioids and BZDs with gabapentinoids (GABAs) resulted in higher risk of mortality and ED visit

1. Ramdin C, Moss G, Nelson LS, Meunier-Amorim M. Opioid and Benzodiazepine Co-Prescribing Trends from the Emergency Department from 2012 to 2019: A National Analysis. J Emerg Med. 2024 Jan;64(1):1-8.

2. Liu LC, Durr A, Montgomery S, Dorval B, Baker LC, Mackay S. Association between concurrent use of prescription opioids and benzodiazepines and overdose: retrospective analysis. BMJ. 2017 Mar 14;354:g760.



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Background


- The U.S. Food and Drug Administration (FDA) took a critical step in 2016 by issuing a black box warning highlighting the significant risks associated with the concurrent use of opioids and BZDs
- In 2017, the CDC estimated that 5.7% of opioid-related deaths involved a triple combination of an opioid, a BZD, and a GABA
- Addressing the rates at which prescribers co-prescribe opioids, BZDs, or GABAs to patients is crucial for mitigating the risk of adverse events
- The concurrent use of these drugs can lead to significant health complications, including increased risk of overdose and other serious side effects

3. Liu LC, Durr A, Montgomery S, Dorval B, Baker LC, Mackay S. Association between concurrent use of prescription opioids and benzodiazepines and overdose: retrospective analysis. BMJ. 2017 Mar 14;354:g760.

4. Centers for Disease Control and Prevention. Association of Opioid and Concurrent Benzodiazepine, Barbiturate, Sedative, or Calmodin Receptor Antagonist Use in Medication-Related Deaths and Inpatient Admissions: A Sentinel-Cross-Sectional Study, 2008 to 2013. Subst Use Misuse. 2016 May;51(5):624-632.

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Methods



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Study Objectives


- 1 Evaluate the associations between health resource utilization outcomes including ED visits and hospitalizations among adult Oklahoma Medicaid members with concurrent prescribing of opioids and BZDs, with or without gabapentinoids from 2020-2024
- 2 Assess trends of naloxone use among adult Oklahoma Medicaid members with concurrent prescribing of opioids and BZDs, with or without gabapentinoids from 2020-2024



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Study Outcomes


- The outcomes to be investigated include:
 - ❖ Emergency Department (ED) visits
 - ❖ Inpatient hospitalizations
 - ❖ Length of stay
 - ❖ Demographics (age, sex, race, member residence)
 - ❖ Provider type (physician specialty, nurse practitioner, physician assistance)
 - ❖ Clinical case mix (i.e., comorbidities)
 - ❖ Year



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Study Design


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 - Historical cohort from July 1, 2020-June 30, 2024
 - Utilized Oklahoma Medicaid administrative claims which included provider information, Medicaid member eligibility and demographics
 - Inclusion criteria:
 - Members ≥18 years of age covered by Oklahoma Medicaid, with a paid prescription claim of either a BZD or a gabapentinoid and an opioid.
 - ≥6 months Medicaid eligibility
 - Exclusion Criteria:
 - Dual eligible for both Medicare and Medicaid
 - IHS members



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Statistical Analysis

- Descriptive statistics was utilized to summarize the data
- Inferential analysis will include regression modeling to examine the adjusted risk for health service utilization outcomes
- The adjusted odds, incidence, or exponentiated ratios formed from the model will be reported with 95% confidence intervals
- The alpha level for inferential statistical significance will be set at 0.05



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Results



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Results

	Opioid Alone (n = 32,915)	Opioid + BZD (n=6,115)	Opioid + BZD + GABA (n = 4,861)
Age, in years	32.2 ± 12.8***	37.5 ± 12.9***	43.6 ± 11.5***
Female Sex	75.9%***	78.8%***	65.1%***
Race, White	64.2%	74.9%	77.5%
Black	17.5%	11.3%	12.0%
Asian/Pacific Islander	1.1%	0.5%	0.4%
Native American	11.5%	8.8%	7.0%
Other	5.6%	4.6%	3.1%
Own Residence	93.6%	89.9%	84.8%
Nursing Home	1.4%	3.8%	6.2%
Other Residence	5.0%	6.3%	9.0%

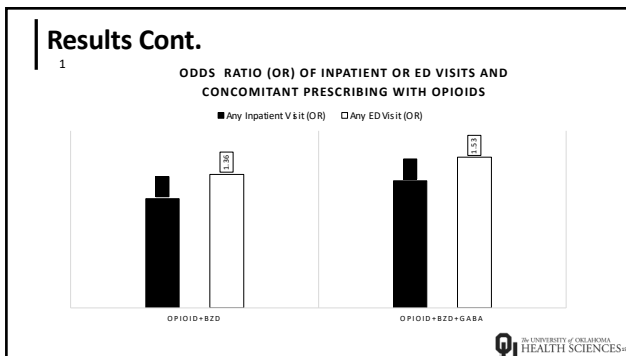
***p<0.001

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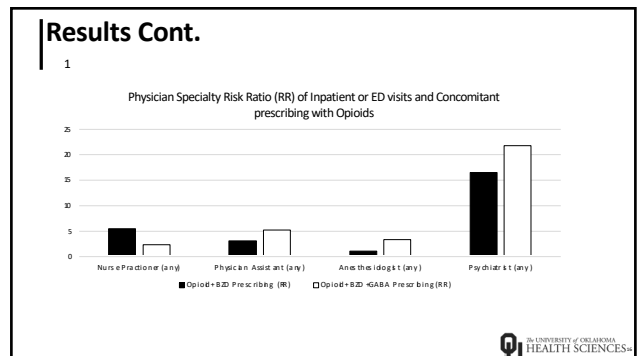
Results Cont.

	Opioid Alone (n = 32,915)	Opioid + BZD (n=6,115)	Opioid + BZD + GABA (n = 4,861)
Nurse Practitioner (any)	10.6%	43.8%	65.1%
Physician Assistant (any)	6.1%	18.1%	31.3%
Anesthesiologist (any)	3.2%	6.0%	23.6%
Psychiatrist (any)	1.1%	15.4%	23.5%
Devo-Charlson Score	0.9%	1.5%	2.8%
Any ED Visit	56.9%	72.1%	83.8%
Any Hospitalization	30.1%	33.7%	45.4%
Inpatient Length of Stay	2.6 ± 3.8	2.4 ± 4.9	2.9 ± 5.7

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Results Summary

- From 2020-2024 43,891 members used opioids:
 - 75% were opioid-only
 - 13.9% with benzodiazepines
 - 11.1% with both BZDs and GABA
- The age ranges was 32-44 years, mostly female, white, and living independently.
- Females had higher odds of using a combination of opioids + BZDs or opioids + BZDs+ GABA
- In early October of 2024, the Oklahoma Health Care Authority (OHCA) sent out 170 letters to Fee-For-Service Oklahoma Medicaid providers and 531 members
- Providers with six or more members who fall into this category will be scheduled for future Academic Detailing (AD) visits


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Naloxone Results Summary

- The proportion of naloxone Rx with each prescription claim
 - Opioid=5.0%
 - Opioid + BZD=11.5%
 - Opioid + BZD + GABA=25.2%
- Opioid + BZD + GABA were associated with a 17 percent higher odds of receiving a paid pharmacy claim for any naloxone (p < 0.01)
- A naloxone prescription was associated with a 46 percent higher odds of inpatient admission (p < 0.001)
- Opioid + BZD, Opioid + BZD + GABA, and naloxone Rx were associated with 30, 59, and 37 percent higher odds of ED visit (p < 0.001)

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Conclusions



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Conclusion

- Co-prescribing of Opioids and BZDs with or without GABA was associated with higher incidence of inpatient and ED visit
- Naloxone prescriptions were more prevalent in opioid+BZD+GABA and opioid+BZD compared to opioid alone
- Nurse practitioner and physician assistant were amongst the highest co-prescribing providers for opioid+BZD+GABA



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Limitations



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Limitation

- Claims data do not capture important details such as the indications for prescribing, patient history, illness severity, or medication adherence
- The datasets incorporated a broad array of ICD codes for conditions like cancer, sickle cell anemia, and seizures, which often require the use of opioids and benzodiazepines
- Prescribing practices and healthcare utilization could have been impacted by external factors during the study period, such as the COVID-19 pandemic, potentially influencing the observed trends.




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Future Direction

Enhancing naloxone access as a critical component of overdose prevention


"Promote safe prescribing and appropriate deprescribing by fostering collaborative relationships with providers and pharmacists through academic detailing focused on high-risk medication combinations."



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Self-assessment Questions

1. Based on the study, which of the following statements best reflects the current prescribing trend of opioids among Oklahoma Medicaid members?
 - a. Opioids are prescribed more frequently than any other medication class.
 - b. The combination of opioids and benzodiazepines has the highest co-prescribing rate.
 - c. Opioids are prescribed less frequently compared to other controlled substances.
 - d. Benzodiazepines are prescribed more often than opioids.



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Self-assessment Questions

2. Based on this study, which type of prescriber has the highest rate of co-prescribing opioids, benzodiazepines, and gabapentinoids?

- a. Anesthesiologists
- b. Psychiatrists
- c. Physician Assistants
- d. Nurse Practitioners



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