Reductions in prescribing following legislative intervention to make gabapentin a controlled substance at the state level in the U.S.

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Gabapentin background

- Treatment of epilepsy and neuralgia
- Prescribed off-label
  - Anxiety
  - Treatment of substance use disorder
  - Physical pain
- Low addictive liability level
- Prescription required
Non-medical Use of Gabapentin

Abuse and Diversion of Gabapentin Among Nonmedical Prescription Opioid Users in Appalachian Kentucky

Law enforcement-derived data on gabapentin diversion and misuse, 2002-2015: diversion rates and qualitative research findings

Prescription Medication Misuse Among Opioid Dependent Patients Seeking Inpatient Detoxification

Gabapentin misuse, abuse and diversion: a systematic review

Potentiation of the Effect of Buprenorphine/Naloxone With Gabapentin or Quetiapine

To the Editor: Although it is an effective treatment for opioid dependence, buprenorphine/naloxone may be misused. We report here a case of potentiation of buprenorphine/naloxone with gabapentin and quetiapine.

Gabapentinoid Abuse in Order to Potentiate the Effect of Methadone: A Survey among Substance Misusers
Gabapentin legal environment

- Reclassified as a Controlled Substance
  - Kentucky: July 2017
  - West Virginia: June 2018
  - Tennessee: July 2018
  - Michigan: January 2019
  - North Dakota: April 2019
  - Virginia: July 2019
  - Alabama: November 2019

- Mandatory reporting to Prescription Drug Monitoring Programs in 11 additional states and the District of Columbia

Source: https://www.goodrx.com/gabapentin/is-gabapentin-a-controlled-substance

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Increase in gabapentin-related overdose deaths

- Overdose deaths in the U.S. involving gabapentin doubled from 2019-2020
- 90% of cases also involved opioids
- In combination with opioids, gabapentin is associated with:
  - Respiratory depression
  - Opioid overdose
Aim and Methods

• To examine changes in gabapentin prescribing in states that reclassified gabapentin as a controlled substance.

• Rates of prescriptions dispensed (per 100,000 population) were calculated by year/quarter.

• Data obtained from U.S.-based IQVIA™ Longitudinal Patient Data.

• Data from 3rd quarter 2016 through 4th quarter 2020 were analyzed using an interrupted time series model.
Kentucky

Prior to reclassification, the rate of prescriptions dispensed was decreasing.

Reclassification caused an immediate decrease in prescriptions dispensed ($p<.001$).

Post-reclassification slope of rate of prescriptions dispensed maintained a similar decline compared to pre-reclassification.
West Virginia

- Prior to reclassification, the rate of prescriptions dispensed was decreasing ($p=.003$).

- Reclassification caused an immediate decrease in prescriptions dispensed ($p<.001$).

- Post-reclassification the rate of prescriptions dispensed decreased at a slower rate compared to pre-reclassification.
Tennessee

- Prior to reclassification, the rate of prescriptions dispensed was increasing ($p = .033$).
- Reclassification caused an immediate decrease in prescriptions dispensed ($p < .001$).
- Post-reclassification the slope of the rate of prescriptions dispensed changed direction compared to the slope before reclassification ($p = .01$).
Michigan

Prior to reclassification, the rate of prescriptions dispensed was increasing ($p<.001$).

Reclassification caused an immediate decrease in prescriptions dispensed ($p<.001$).

Post-reclassification the slope of the rate of prescriptions dispensed was less than the slope compared to before reclassification ($p<.001$).
North Dakota

Prior to reclassification, the rate of prescriptions dispensed was trending upward (p=.062).

Reclassification did not cause an immediate decrease in prescriptions dispensed.

Post-reclassification the slope of the rate of prescriptions dispensed trended less than the slope compared to before reclassification (p=.065).
Virginia

Prior to reclassification, the rate of prescriptions dispensed was increasing ($p<.001$).

Reclassification caused an immediate decrease in prescriptions dispensed ($p<.001$).

Post-reclassification the slope of the rate of prescriptions dispensed was not different compared to before reclassification.
Alabama

Prior to reclassification, the rate of prescriptions dispensed was not significantly increasing.

Reclassification caused an immediate decrease in prescriptions dispensed ($p=0.021$).

Post-reclassification the slope of the rate of prescriptions dispensed was steeper compared to before reclassification.
Discussion

• In 6 of the 7 states, the reclassification of gabapentin caused an immediate decrease in prescriptions dispensed.

• Some of the most notable differences were Michigan and Tennessee which saw significant ongoing decreases in the rate of gabapentin prescriptions dispensed.

• Although reclassification in North Dakota did not cause an immediate decrease in prescriptions dispensed, post-reclassification the slope of the rate changed direction and prescriptions dispensed trended less.

• State-level scheduling likely reduced availability and diversion in these states, as well as non-medical use.
Limitations

• These analyses have some limitations worth noting:
  • Data were only available for analysis beginning in 2016 and thus there were fewer time points to analyze in Kentucky.
  • Similarly, data were only available through the 2020, thus limiting time points for analysis post-reclassification in several states (e.g., Alabama)
  • Quarterly data, compared to more frequently reported time points, further limit the analyses.
Future Directions

• Findings suggest that state-level reclassification of gabapentin has an immediate effect on prescribing.

• Future investigations should include:
  • State-level policy influence on co-prescribing of opioids and gabapentin
  • Potential reductions in opioid/gabapentin overdoses and fatalities
  • Risks and benefits of new policies for chronic pain patients