Impact of Mandated Use of the Texas Prescription Monitoring Program on Carisoprodol Dispensing in Texas

College of Pharmacy
UNIVERSITY OF HOUSTON

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Zeng Z[1], Temedie-Asogwa T[1], Olateju O[1,2], Varisco T[1,2], Thornton JD[1,2]

[1]University of Houston College of Pharmacy; [2]The Prescription Drug Misuse Education and Research (PREMIER) Center, University of Houston College of Pharmacy, Houston, Texas, USA

Contact Information:
Zhen Zeng
University of Houston
Phone: 346-212-8236
Email: zzeng11@uh.edu

ABSTRACT

Objectives: Beginning 1st March 2020, Texas mandated prescribers and pharmacists to review the Prescription Monitoring Program (PMP) database before issuing selected controlled substances, including carisoprodol, to patients. However, the impact of this regulation on dispensing carisoprodol is unknown. This study aimed to examine whether the Texas PMP Mandate was associated with changes in carisoprodol dispensing in Texas.

Methods: Counts of carisoprodol prescriptions, patients filling, prescribers, and dispensaries were computed monthly from March 2019 to March 2021 using the Texas PMP database. Changes in the monthly count of patients, prescriptions, prescribers, and dispensaries before and after March 1, 2020, were estimated using autoregressive interrupted time series regression.

Results: In the pre-implementation period, there was a significant and sustained decrease in monthly counts of patients filling carisoprodol prescriptions (β = -581.6, P < 0.001); carisoprodol prescriptions (β = -626.7, P < 0.001), and prescribers (β = -67.9, P < 0.001), and dispensaries (β = -16.5, P = 0.004). The mandate resulted in an immediate but not statistically significant decrease in the counts for prescribers and dispensaries (P>0.05). Compared to the baseline, there was an increase in the number of patients filling carisoprodol (β=370.0, P=0.004), carisoprodol prescriptions (β=393.1, P<0.01), and prescribers (β=27.6, P=0.0469) post-implementation, resulting in a net decrease in carisoprodol-related activities at the rates of 211 patients, 233 prescriptions, and 40 prescribers per month respectively.

Conclusion: There is no sufficient evidence for the associations between the Texas PMP mandate and changes in carisoprodol prescribing and dispensing. Future research is warranted to continuously monitor the trend in carisoprodol dispensing and explore factors that may hinder the adoption of the PMP mandate by prescribers and dispensers in Texas.

BACKGROUND

- The inappropriate use of carisoprodol has been increasing in the US, and abuse of this substance poses an overdose risk which may lead to death.
- Beginning 1st March 2020, Texas mandated prescribers and pharmacists to review the Prescription Monitoring Program (PMP) database before issuing selected controlled substances, including carisoprodol, to patients.
- However, the impact of this regulation on dispensing carisoprodol is unknown.

OBJECTIVE

- This study aimed to examine whether the Texas PMP Mandate was associated with changes in carisoprodol dispensing in Texas.

METHODS

Study Design

- Measure the prevalence of an event at several equally spaced intervals in time pre- and post-interventions
- Between March 2019 and March 2021
- Baseline trend modeled between March 2019 and March 2020
- Outcomes: The changes in the monthly count of Carisoprodol prescriptions, patients filling carisoprodol, distinct carisoprodol prescribers, and distinct carisoprodol dispensaries after the Texas PMP mandate took effect, compared to before

Statistical analysis

- The autoregressive, segmented linear regression was used to measure the change in monthly patients, prescribers, dispensaries, and prescriptions 12 months after March 1, 2020
- Time segments:

  Pre-intervention: March 2019 – February 2020

  Wash-out period: February 2020 –April 2020

  Post- intervention: April 2020 – March 2021

Software: SAS 9.4

REFERENCES

- Texas Prescription Monitoring Program. Accessed February 16, 2022.
- Maxwell, J. C. (2006). Trends in the abuse of prescription drugs. The University of Texas at Austin: Gulf Coast Addiction Technology Transfer Center.

RESULTS

Figure 1. Change in Monthly Count of Patients Filling Carisoprodol Prescription

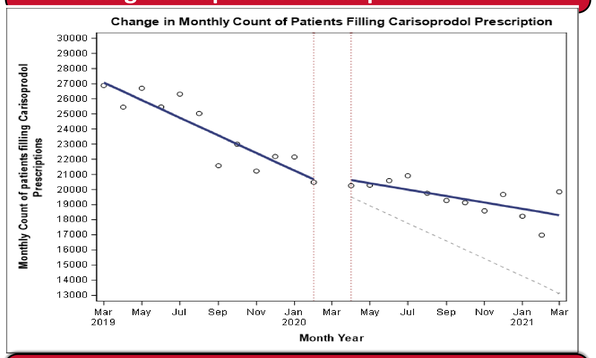

Table 1. Impact of Texas Mandate on Monthly Count of Patients Filling Carisoprodol

Impact of Texas Mandate on Monthly Count of Patients Filling Carisoprodol

Parameters	Estimate	P value
Intercept (baseline use)	27649	<.0001
Secular trend	-581.6	<.0001
Level Change (Immediate Impact)	746.6	0.3829
Slope Change (Trend Change)	370.0	0.0040

Figure 2. Change in Monthly Count of Patients Filling Carisoprodol Prescription

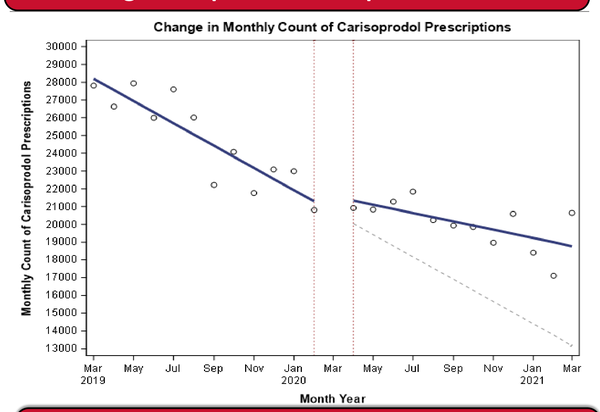

Table 2. Impact of Texas Mandate on Monthly Count of Patients Filling Carisoprodol

Impact of Texas Mandate on Monthly Count of Carisoprodol Prescriptions

Parameters	Estimate	P value
Intercept (baseline use)	28818	<.0001
Secular trend	-626.7	<.0001
Level Change (Immediate Impact)	897.5	0.3845
Slope Change (Trend Change)	393.1	0.0095

Figure 3. Change in Monthly Count of Patients Filling Carisoprodol Prescription

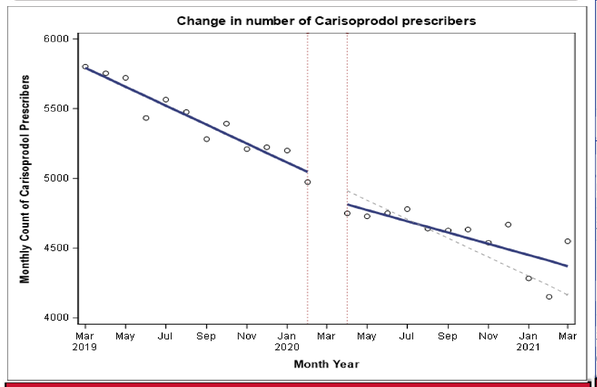

Table 3. Impact of Texas Mandate on Monthly Count of Patients Filling Carisoprodol

Impact of Texas Mandate on Monthly Count of Carisoprodol Prescribers

Parameters	Estimate	P value
Intercept (baseline use)	5861	<.0001
Secular trend	-67.9	<.0001
Level Change (Immediate Impact)	-124.8	0.2075
Slope Change(Trend Change)	27.6	0.0469

LIMITATIONS

- Lack of information on the query change of the Texas PMP after mandate
- Did not control COVID-19 or other concurrent policy change which may impact the results

CONCLUSIONS

- There is a need for continuous monitoring and exploration of the factors that may hinder the adoption of the PMP mandate by dispensers and prescribers in Texas.