

Effect of IV Push Levetiracetam and Lacosamide Implementation on Turn-Around Times and Cost

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Background

- Recent data illustrates safety and efficacy of administering IV levetiracetam and lacosamide as an undiluted IV push in adults
- UChicago Medicine changed to administering levetiracetam and lacosamide as an IV push in March 2022 for all doses, as opposed to an IV piggy back prepared in the IV room
- Initially, IV push levetiracetam doses greater than 1500 mg were split into multiple syringes and administered separately

Objective

To assess if implementing IV push levetiracetam and lacosamide improved time to administration and reduced drug expenses, while maintaining safety

Methods

- Design: Retrospective, observational, chart review
- Data from 11 months pre and 10 months post implementation were analyzed
- Inclusion: Patients who received a one time IV push levetiracetam or lacosamide order
- Exclusion: Patients < 18 years old
- Primary: Time from order entry to medication administration
- Secondary: Pharmacy department drug acquisition costs
- Safety: Retrospective review of safety events submitted

IV = intravenous
ED: Emergency Department
NSICU = Neurosciences Intensive Care Unit
IQR = interquartile range
ADC = Automated dispensing cabinet
WAC = Wholesale acquisition cost
GPO = Group purchasing organization

Results

Levetiracetam

	Doses (n)	Median Time from Order Entry to Administration (minutes)	IQR (minutes)
One Time IVPB: January 1, 2021 - December 2, 2021			
All Adult Units	510	81	53 - 120
Adult ED	195	63	45 - 95
NSICU	50	95	69 - 137
One-Time IV Push Orders: March 28, 2022 - January 31, 2023			
All Adult Units	1797	24	10 - 55
Adult ED	596	19	8 - 43
NSCIU	80	49	17 - 82

Lacosamide

	Doses (n)	Median Time from Order Entry to Administration (minutes)	IQR (minutes)
One Time IVPB: January 1, 2021 - December 2, 2021			
All Adult Units	73	128	86 - 170
Adult ED	8	98	64 - 120
NSICU	21	130	102 - 166
One-Time IV Push Orders: March 28, 2022 - January 31, 2023			
All Adult Units	111	41	16 - 82
Adult ED	22	37	10 - 48
NSCIU	15	25	12 - 59

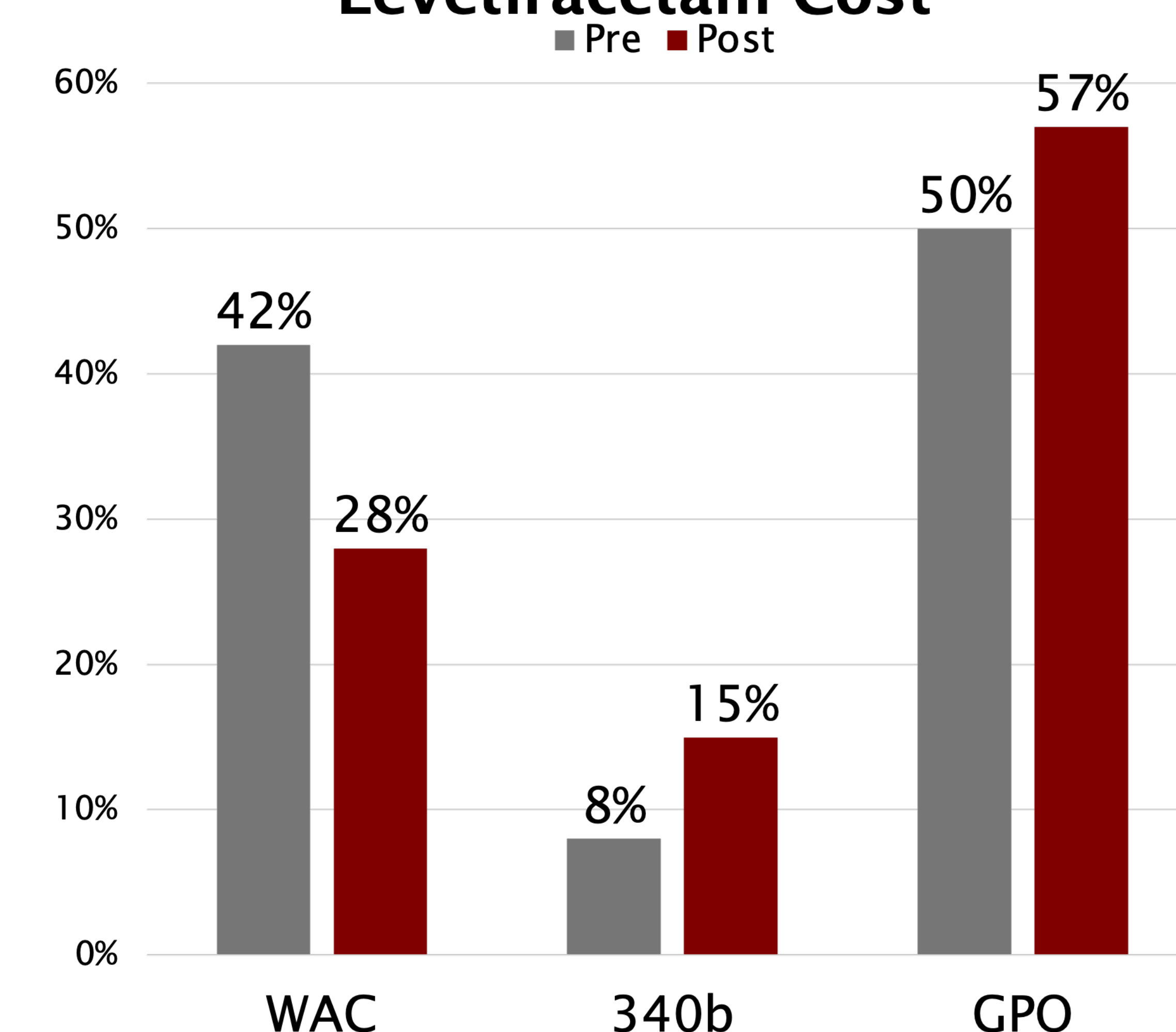
Levetiracetam Safety

	Events (n)
Delays due to ADC stock out	4
Full dose not administered	1
Ordering errors	3

No events for lacosamide reported.

- Ongoing ADC optimization
- Change to single syringe administration for all doses

Levetiracetam Cost*



*No difference in lacosamide costs found.

Conclusions

Implementation of IV push levetiracetam and lacosamide reduced time to administration and drug acquisition costs

Limitations

- Time to administration may have been confounded by change in IV push process after implementation
- Retrospective design limits assessment of overridden and re-dispensed doses

References

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Disclosures

The authors of this presentation have no financial interests with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.