

# The utility of the PAP NAP for increasing patient utilization of positive airway pressure therapy

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## Background

### • Problem Statement:

- An estimated 9-38% of adults have obstructive sleep apnea (OSA), and about 80% is undiagnosed.
- OSA has been linked to excessive sleepiness, neurocognitive impairments, reduced quality of life, diabetes, heart disease, stroke, hypertension, and motor vehicle and workplace accidents
- Approximately 85% of people with diagnosed OSA receive PAP and only 35-60% remain compliant long term
- Many factors impact CPAP use: disease and patient characteristics, titration procedures, device factors, side effects, psychological and social factors

- **Project AIM:** Evaluate whether a daytime, abbreviated cardio-respiratory sleep study (AKA the PAP NAP - developed to help improve adherence in patients with OSA and insomnia and other psychiatric disorders in a protocolized, reimbursable method) improves patient's PAP adherence.

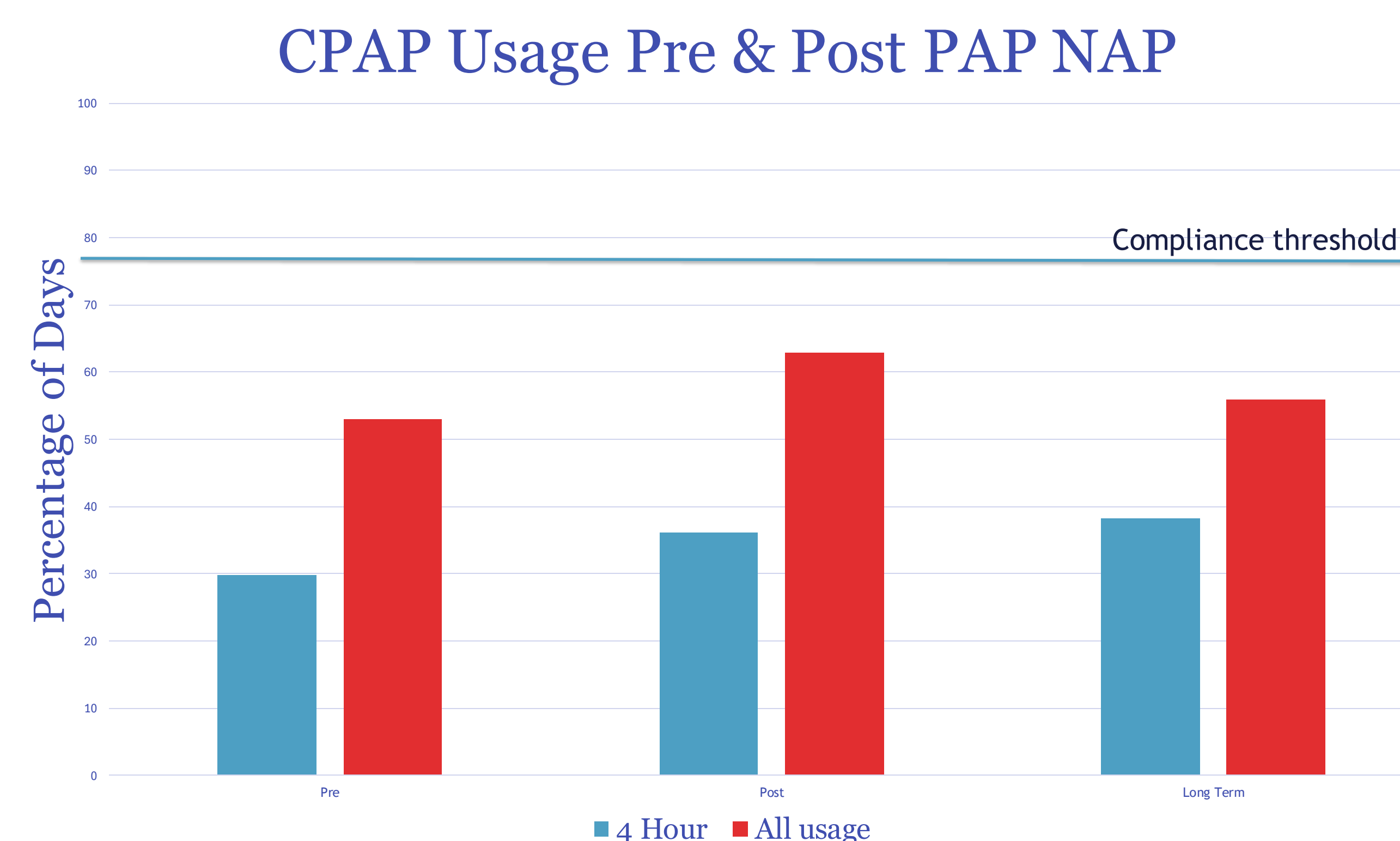
## Methods

- This is a retrospective study at a single institution of the PAP NAP procedure at our sleep laboratory between 2019 and 2022. The electronic medical record and PAP provider interfaces were queried for demographics, medical and sleep history, sleep study data, and PAP usage for patient who had a PAP NAP ordered. Patients were grouped by those who completed the PAP NAP and those who did not. Initial follow-up (or 30 days after order if the procedure was not completed) and most recent available follow-up data was collected.

## Baseline Metrics, Intervention, and Results

Baseline Characteristics				
Variable	All (n=36)	PAP NAP (n=28)	Control (n=8)	p value
Mean BMI (kg/m <sup>2</sup> )	35.1	33.27	56.2	0.02
Mean AHI (events/hour)	38.7	33	58.4	0.58
Compliant at baseline	18.9%	25%	0%	0.015
Percent of days >4 hours	29.1	29.9	26.2	0.827
Baseline days with any usage	53.7	53.0	56.8%	0.835
History of Insomnia	29.7%	39.3%	0%	<0.001
History of Anxiety	16.2%	17.9%	12.5%	<0.001

Compliance Before and After PAP NAP				
Variable	All	PAP NAP	Control	p value
% baseline compliant	19.4%	25% (n=7)	0% (n=0)	0.015
% short term compliant	22.2%	21.4% (n=6)	25% (n=2)	0.192
% long term compliant	19.4%	25.0% (n=7)	0% (n=0)	0.068



## Conclusions

- While there was an initial increase in the percentage of nights PAP was used at all or for at least 4 hours, this does not represent a clinically meaningful difference as very few patients increased usage enough to meet the standards of adequate PAP use.
- 5 patients with excellent compliance prior to PAP NAP had poor mask fit, large leak, and/or high residual AHI – 3 of the 5 patients had improvement in leak and/or AHI
- Patients did not complete PAP NAP mostly because of lack of insurance coverage.

## Linkage to Healthcare Disparities & Future Directions

- There is evidence that low socioeconomic status may be related to risk of OSA and there may be racial differences in PAP adherence. Our group is also presenting CPAP adherence differences among our clinic patients' socioeconomic status, determined by area deprivation index. This suggestion of health inequality among patients with OSA deserves targeted interventions.
- The PAP NAP, while possibly only helpful in certain instances, may be a more convenient option in troubleshooting PAP compliance and treatment issues. Further work needs to be done to look at differences among patient groups and payor status.
- There may be a role for PAP NAP use in patients who are already compliant but have problems with tolerance, mask fit, or high residual disease. This area should be further explored as it was a small portion study.

## References

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