



HEALTH CARE

# Initiation of Screening for Obstructive Sleep Apnea In the Primary Care Setting

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## Abstract

Obstructive sleep apnea (OSA) is a chronic disorder that has been linked to the development of multiple comorbid conditions. Currently, the primary care community has conflicting recommendations by the American Academy of Sleep Medicine (AASM) and the United States Preventative Service Taskforce (USPSTF) with regards to routine screening for OSA<sup>1</sup>. This Quality Improvement project aimed to investigate the effects of implementing universal screening for OSA in adult patients at the Family Health and Wellness Clinic using the STOP-BANG screening questionnaire.

## Introduction

- OSA is a disorder characterized by upper airway obstruction leading to episodes of apnea or decreased inspiratory flow during sleep.
- The prevalence of OSA is increasing due to an aging population and growing rate of obesity<sup>2</sup>.
- Research has shown that OSA is associated with multiple adverse health outcomes including cardiovascular disease, stroke, and increased all-cause mortality<sup>3</sup>.
- Validated symptom screening questionnaires such as STOP-BANG can identify the need for a diagnostic polysomnogram<sup>4</sup>.
- At this time, AASM and USPSTF have differing position statements regarding screening for OSA. The former recommends that all adult patients should be asked about signs and symptoms of OSA, while the later states there are not enough studies of net benefit for screening unselected populations<sup>1</sup>.
- We believe that our clinic was only screening patients that had obvious signs of OSA and were diagnosing OSA too late in the disease process. By screening all patients utilizing a STOP-BANG, we will identify patients with low to intermediate risk of OSA.

## Materials & Methods

- A Plan-Do-Study-Act (PDSA) cycle was instituted to address the perceived deficit of OSA referrals and diagnoses at our residency clinic.
- Initial 12-month retrospective chart review of de-identified patient data was performed by the McLaren Bay Region Sleep Center to assess for total referrals for diagnostic polysomnography, true positive polysomnogram results for OSA, as well as total no-shows for diagnostic testing.
- Our clinic then initiated a policy change where all adult patients were given a STOP-BANG questionnaire at the beginning of their visit over the course of three months.
- Screening results were considered positive if the STOP-BANG score was greater than or equal to 3 and the patient had no documented history of OSA. Positive screens were subsequently referred for diagnostic polysomnography.
- After the designated 3-month period, the same data was again collected and compared to the pre-PDSA cycle data set.

## Results

- Data sets gathered prior to and after the policy change are outlined in table 1.
- Corresponding monthly averages over the specified time periods are displayed in Figure 1

Table 1: Data Sets

Outcome measures	Prior to Policy Change (Over 12 months)	After Policy Change (Over 3 months)
Total Patients Referred for Polysomnography	93	38
Total Patients Referred and Diagnosed with OSA	47	18
Total Number of No-Show Appointments	34	16

Figure 1

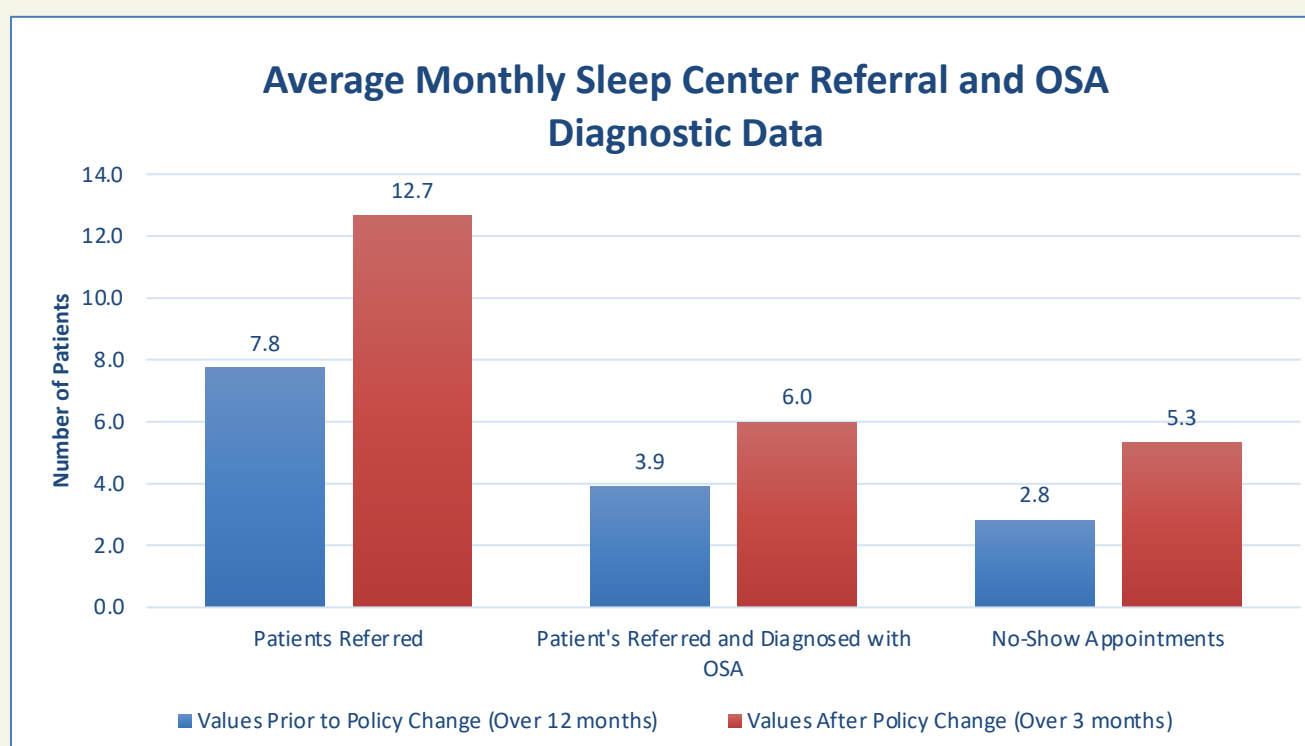
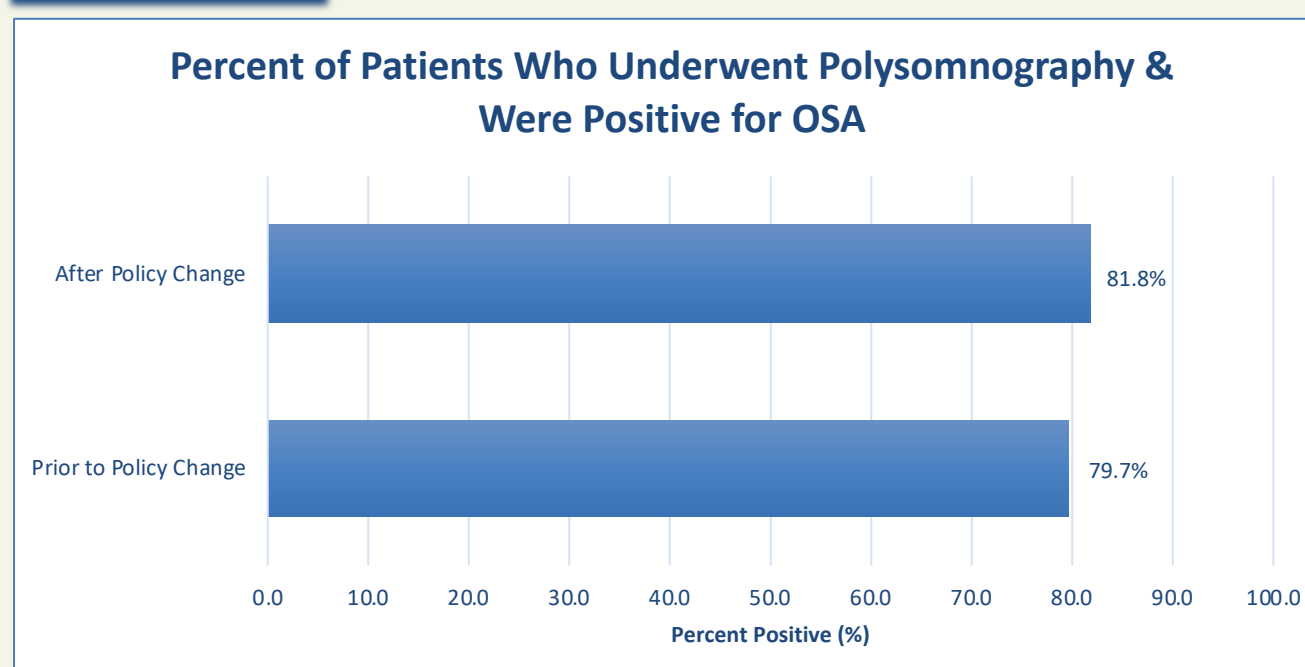


Figure 2



## Results Continued

- Our data shows an increased rate of referrals for diagnostic polysomnography after universal STOP-BANG screening administration.
- Our data reflects a 2.1% increase in percentage of patients who underwent polysomnography and were positive for OSA (Figure 2).
- With increased referrals, there was also an increase in the no-show rate for polysomnography recorded by the sleep center – with a 35% no-show rate prior to our policy change and 41% after our policy change.

## Discussion

- Post policy change, the number of referrals per month increased significantly with routine screening of all patients for OSA and allowed us to identify patients with low-intermediate risk for referral.
- Even with increasing the referrals of patients with low to intermediate risk of OSA, the percentage of patients positive for OSA on polysomnogram remains stable and, therefore, did not appear to result in unnecessary polysomnogram testing.
- Pre-PDSA cycle data was from a period prior to COVID-19 while after policy change was during the COVID-19 pandemic, which likely increased the no-show rate.
- This study had a small sample size and could be improved by extending the data collection period to increase the sample size.

## Conclusion

- Overall, our results suggest that routine screening of all adults at their health maintenance visit is beneficial and could identify OSA earlier, reducing adverse health outcomes.
- Larger longitudinal studies are warranted to help determine the impact of routine screening with validated questionnaires.

## References and Acknowledgements

Special acknowledgements to the McLaren Bay Region Sleep Center

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