

# Clinically-Integrated Value-Based Care Promotes Efficient Access to Sleep Treatment

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## Introduction

Obstructive Sleep Apnea (OSA) is a highly prevalent sleep disorder in the general population with estimates ranging from 9 to 38%<sup>1</sup>.

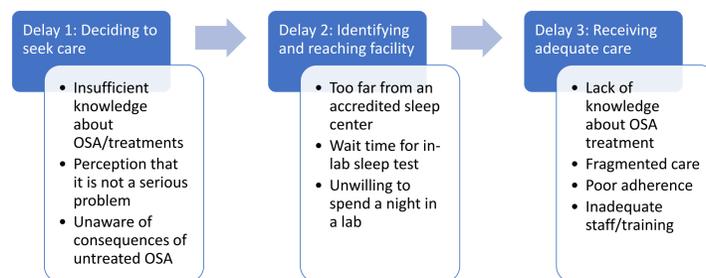
Despite the availability of an effective first-line treatment (positive airway pressure [PAP]), the public health burden remains high. This includes reduced health-related quality of life for the individual, elevated health care costs associated with managing the disease and comorbid conditions, and the cost of accidents stemming from untreated OSA.

A major problem is that accessing appropriate OSA care is often challenging and delayed. In particular, traditional sleep care models are cumbersome and inefficient because they require: 1) consistent referral to sleep centers; 2) patient burden of diagnostic testing; 3) coordination between providers, DME companies, and payors; and 4) the need for patient monitoring and ongoing support to adhere to treatment.

The Three Delays Model<sup>2</sup> depicts the latency to care and can be applied to the OSA care pathway (see Figure 1).

The purpose of this study is to examine real-world evidence (RWE) of an integrated value-based telehealth program for disrupting latency to care in OSA.

Figure 1



## Methods

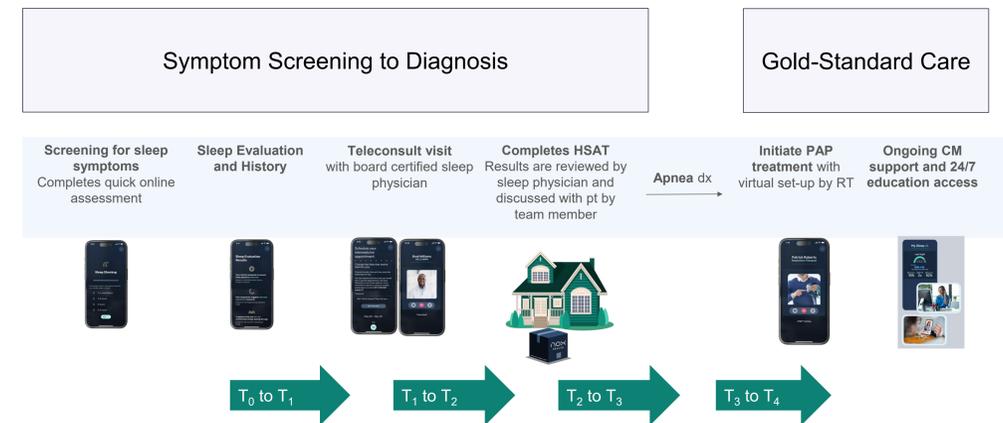
Data were captured from an electronic health record system used for OSA care management between 2021-2023.

2020 Rural-Urban Commuting Area (RUCA) Codes were used to classify geographic location based on the patient's home zip code.

Time to event of OSA care (in days):

- Sleep evaluation to telehealth consult with a physician
- Consult to completing Home Sleep Apnea Testing (HSAT)
- Completing HSAT to OSA diagnosis
- Positive OSA diagnosis to PAP initiation

Figure 2: OSA Care Pathway



## Results

Table 1: Participant Demographics

	Total (n=5806)		Rural (n=458)		Urban (n=5348)	
	(n)	%	(n)	%	(n)	%
<b>Gender</b>						
Male	3562	61.3%	312	68.1%	3250	60.8%
Female	2240	38.6%	146	31.9%	2094	39.2%
Unknown	4	0.1%	0	0.0%	4	0.1%
<b>Age Group</b>						
18-25	56	1.0%	2	0.4%	54	1.0%
26-35	658	11.3%	44	9.6%	614	11.5%
36-45	1494	25.7%	128	27.9%	1366	25.5%
46-55	1843	31.7%	137	29.9%	1706	31.9%
56-65	1432	24.7%	126	27.5%	1306	24.4%
>65	323	5.6%	21	4.6%	302	5.6%

**Total Time (Eval to PAP)**  
All: Median = 32 days  
Mean = 60.10 days  
  
Rural: Median = 30 days  
Mean = 53.26 days  
  
Urban: Median = 33 days  
Mean = 60.84 days

Table 2: Time to Event (days)

Group	N	Min	Q1	Median	Q3	Max	Mean	SD
<b>Evaluation to Telehealth consult</b>								
All	5806	0	3	5	12	365	14.50	34.80
Rural	458	1	3	6	12	282	13.31	27.39
Urban	5348	0	3	5	12	365	14.61	35.36
<b>Consult to HSAT</b>								
All	5073	0	0	2	5	346	5.60	15.99
Rural	412	0	0	2	4	189	4.56	11.85
Urban	4661	0	0	2	5	346	5.69	16.30
<b>HSAT sent to OSA Diagnosis</b>								
All	4546	2	7	9	12	265	9.82	6.93
Rural	381	3	7	9	12	85	9.78	6.24
Urban	4165	2	7	9	12	265	9.82	6.99
<b>OSA Diagnosis to Initiate PAP</b>								
All	3308	1	5	8	14	353	17.86	35.77
Rural	321	1	5	7	11	190	13.38	24.70
Urban	2987	1	5.5	8	14	353	18.34	36.73

## Conclusions

RWE supports this integrated value-based telehealth program for disrupting latency to care in OSA

Rural patients gain access to quality sleep care at a rapid and comparable speed compared to urban patients:

- **Sleep evaluation to PAP initiation** = 30 days for rural; 33 days for urban
- Time at each step was comparable between rural and urban

Traditional Model: **HSAT to PAP initiation** = 36 days<sup>3</sup>

### References:

1. Senaratna CV et al., 2017, *Sleep Med Rev.*

2. Thaddeus & Maine, 1994. *Social Science & Medicine.*

3. Wickwire et al., 2024, *JCSM*

### Disclosures:

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