HSD79

Optimizing Workforce Efficiency and Reducing Waiting Lists Through Remote Monitoring in Obstructive Sleep Apnea (OSA) Care

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INTRODUCTION

- Obstructive Sleep Apnea (OSA) care places a significant burden on healthcare providers (HCPs) due to frequent in-person follow-ups and CPAP resupply processes.
- A budget impact model (BIM) presented at ISPOR EU 2023 demonstrated that remote monitoring can reduce this burden by decreasing the need for physical visits, translating into measurable HCP time savings.
- Based on these findings, we estimated that for every 1,000 patients managed remotely, 60 HCP working days could be saved. This study extends that analysis by developing a capacity model to quantify how these time savings affect patient throughput and waiting list reduction.

METHODS

- Developed an Excel-based capacity expansion model to simulate clinical impact of remote monitoring.
- Based on prior BIM comparing conventional OSA care vs. (AirView™) enabled remote pathway for 1,000 patients (60 HCP days saved)
- **Model outputs:**
  - Total HCP time saved,
  - Additional patients treatable/year,
  - Weeks required to clear waiting list.

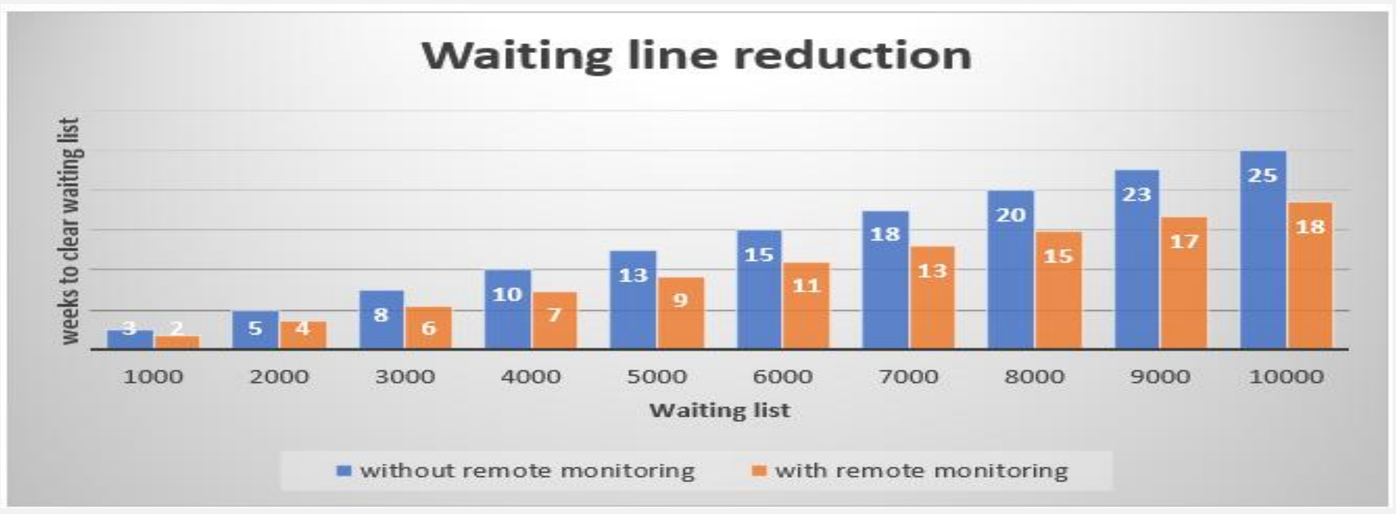
Scenario analyses included :

- Varying waiting list sizes
- Varying remote monitoring adoption levels

Assumptions	Input
Average time spent per patient (hr)	0.33
Patient pool treated	5000
Waiting list	2000
Number of HCPs	10
Annual working weeks	48
Working hr/week for HCP	37.5
Working days saved by Remote monitoring data from 5000 patients in cohort	298
Patient seen per HCP per week	40

RESULTS

- **Remote Monitoring Significantly Reduced Wait Times**
  - Figure 1: Shows reduction in weeks required to clear waiting lists with vs. without remote monitoring
  - Example: For a 5,000-patient waiting list, RM reduced clearance time from 13 weeks to 9 weeks — a 31% reduction.
  - The benefit grows with list size, saving up to 7 weeks for larger cohorts (e.g., 10,000 patients).

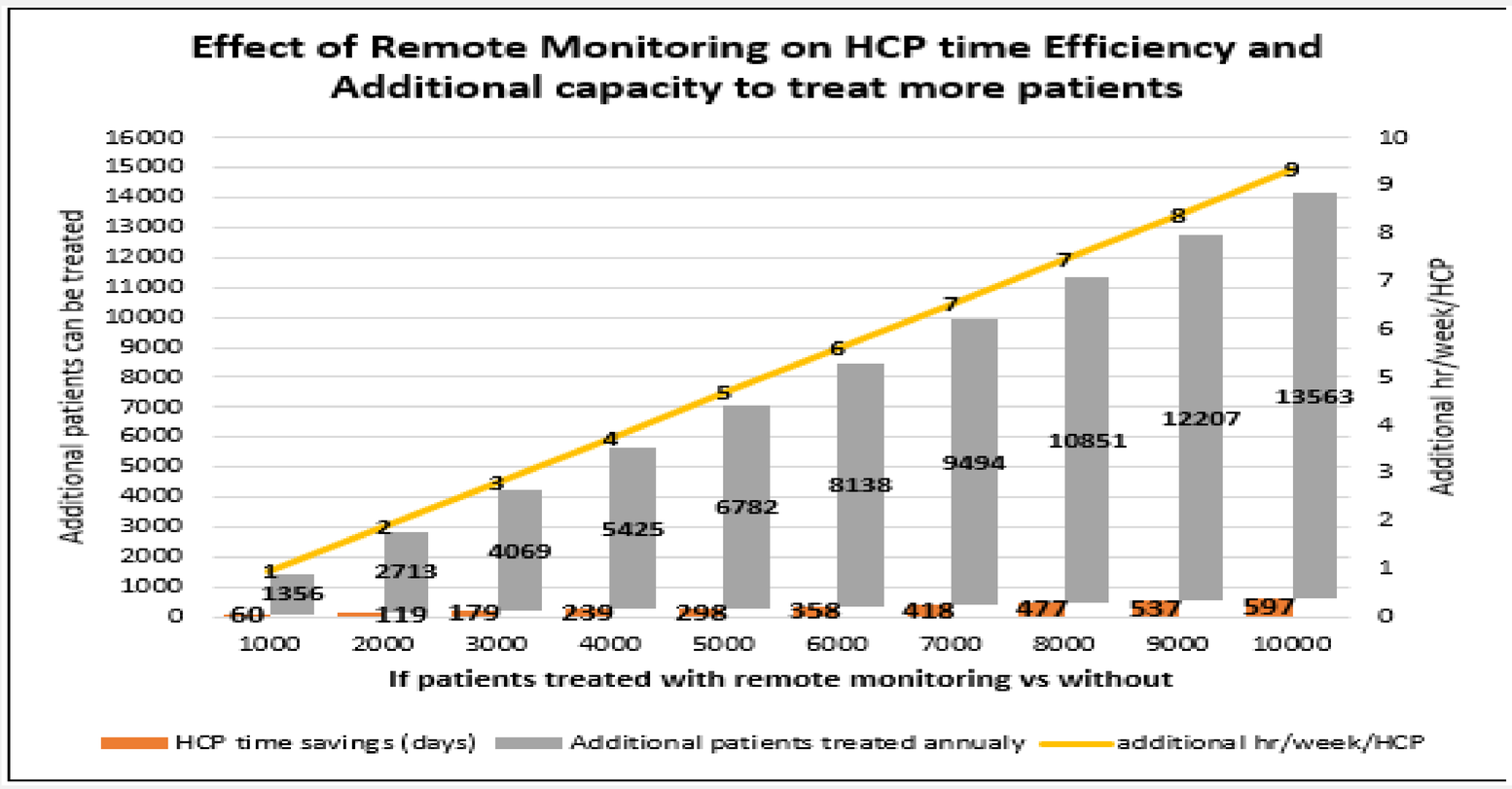


- **Wait Time Reduction Scales with Adoption**
  - Figure 2: Heatmap quantifies the reduction in weeks across various scenarios of RM adoption
  - For instance, treating 7,000 patients with RM in a 9,000-patient waitlist reduces wait time by 8.1 weeks.
  - Highest gains seen with larger waitlists and higher RM adoption.

Reduction in Waiting Time (Weeks) Based on Remote Monitoring Treatment

waiting list \ Patient treated with remote monitoring	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
1000	0.2	0.3	0.4	0.6	0.7	0.7	0.8	0.9	1.0	1.0
2000	0.3	0.6	0.9	1.1	1.3	1.5	1.7	1.8	1.9	2.1
3000	0.5	0.9	1.3	1.7	2.0	2.2	2.5	2.7	2.9	3.1
4000	0.7	1.2	1.7	2.2	2.6	3.0	3.3	3.6	3.9	4.1
5000	0.8	1.5	2.2	2.8	3.3	3.7	4.1	4.5	4.9	5.2
6000	1.0	1.9	2.6	3.3	3.9	4.5	5.0	5.4	5.8	6.2
7000	1.2	2.2	3.1	3.9	4.6	5.2	5.8	6.3	6.8	7.2
8000	1.3	2.5	3.5	4.4	5.2	6.0	6.6	7.2	7.8	8.3
9000	1.5	2.8	3.9	5.0	5.9	6.7	7.4	8.1	8.7	9.3
10000	1.6	3.1	4.4	5.5	6.5	7.4	8.3	9.0	9.7	10.3

- **Remote Monitoring Unlocks Substantial Additional Capacity**
  - Figure 3: Demonstrates HCP time saved, additional patients treatable, and weekly hours gained.
  - Treating 5,000 patients with RM saved 298 HCP days/year, enabling 6,782 more patients annually.
  - This equates to a gain of 5 additional hours per HCP/week. Scaling to 10,000 patients with RM saved 597 HCP days and added capacity for 13,563 patients annually.



CONCLUSION

- Remote monitoring significantly reduces HCP demand and increases care capacity.
- This model shows how time savings can scale to improve access and reduce waiting times, supporting broader adoption of digital, value-based care models in OSA management.

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