respond on paper or a “graffiti wall” (i.e., white board). Example questions include “What are the greatest needs of the healthcare system related to sleep apnea and TBI?” and “What are the key things we need to consider to move results into real-world practice?” Qualitative content analyses using a rapid matrix approach were conducted from stakeholder feedback obtained during the two-day meeting, which included a guided review of emerging OSA research and discussion of potential implementation barriers of OSA assessment during inpatient rehabilitation.

**Results:** Improved screening and treatment practices for OSA were the greatest needs identified. To meet these needs, stakeholders identified the importance of improving patient, family, and staff understanding of OSA (e.g., health literacy) and other sleep disorders through education; inpatient rehabilitation access to resources (technology, sleep providers); and reimbursement for additional inpatient procedures.

**Conclusion:** Although treatment of OSA is crucial for recovery during inpatient rehabilitation following TBI, barriers to earlier recognition, diagnosis, and treatment of OSA exists across several different domains, including education, resources, and funding policies. Findings support future implementation efforts to translate evidence-based care into practice to improve patient outcomes.

**Support (if any):** PCORI-NCT03033901

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**807 DIAGNOSTIC PATHWAYS OF PATIENTS AUTHORIZED FOR OBSTRUCTIVE SLEEP APNEA TESTING AND TREATMENT: A RETROSPECTIVE CLAIMS ANALYSIS**  
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**Introduction:** Obstructive Sleep Apnea (OSA) has been shown to reduce health-related quality of life and is associated with cardiovascular disease and other negative health outcomes. However, many patients with suspected OSA are never tested, thereby remaining undiagnosed and untreated. In this study, we explore the diagnostic pathways and eventual treatment of individuals with suspected OSA.

**Methods:** We conducted a retrospective, observational study, linking claims and prior authorization data of a large, geographically diverse health insurer's commercial and Medicare Advantage members. Our sample included adults with suspected OSA and no prior OSA history, whose diagnostic testing had been approved through prior authorization (N=75,011). Using a 3-month time window following authorization, we searched for a claim to match the authorized service (home or laboratory sleep testing). We also looked for subsequent prior authorization for OSA treatment (Positive Airway Pressure (PAP) or oral appliance) and corresponding claims for those treatments within the 3-month authorization window.

**Results:** Among the study sample (N=75,011), 40,002 (53.3%) had home testing only, 17,319 (23.1%) had laboratory testing only, and 6,053 (8.1%) had a home test followed by a laboratory test. Only 476 (0.6%) had a home test after the date of a lab test. 11,161 individuals (14.9%) did not complete any sleep test. Of the 63,850 individuals with any sleep testing, 39,062 (61.2%) received prior authorization for initiating OSA treatment, and 36,158 (92.6%) of them had a corresponding claim for treatment.

**Conclusion:** One in eight adults with suspected OSA for whom diagnostic testing was authorized did not undergo testing; among those who tested, home testing was most common. While it is clinically appropriate to follow a negative home test with a lab test since a home test cannot rule out OSA (only confirm it), the study notes that a significant number of those with a home test require follow-up laboratory testing. Together, this represents an opportunity for reducing barriers to testing and improvement in home testing technology.

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**808 SLEEP AND FATIGUE MITIGATION: PAVING THE WAY FOR TRAINING HEALTH CARE TRAINEES**  
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**Introduction:** The health care workforce is undoubtedly prone to fatigue and sleep deprivation due to extensive hours, shift work and intense demands of the training. The physical and behavioral effects of sleep deprivation can compromise well being and also negatively impact clinical performance. ACGME has been actively engaged in efforts to promote protection of health care trainees from the deleterious effects of sleep deprivation but the grass root level educational efforts towards teaching trainees to mitigate sleep deprivation are lacking.

**Methods:** We conducted a 60 minute long “Sleep and Fatigue Training Session” with the goals of increasing the understanding of effects of sleep deprivation and training in countermeasures. The session was conducted as a part of the annual GME orientation session for all the incoming learners. 274 trainees (residents & fellows) participating from all the departments were divided into 25 small groups of 7–12 members each. Clinical vignettes, brief presentation and moderator facilitated interactive discussion were utilized as teaching tools. Handouts with strategies and resources for the trainees were disseminated. Pre and post session surveys were designed to assess trainees baseline understanding of sleep impairment, impact on performance, recognition of impact, possible countermeasures and the impact of module on the aforementioned parameters after the intervention.

**Results:** Based on the cumulative trend of participant’s responses obtained on a Likert scale of 1 to 5, results showed improvement in all the parameters including access to training (3.67 to 4.44), awareness (4.31 to 4.46), recognition (4.04 to 4.36), strategies (3.6 to 4.36), and resource availability (3.24 to 4.33). Attendees reported a cumulative score of 4.23/5 in terms of beneficial impact of the module. The resource availability parameter demonstrated the highest average increase (33.6%) after the intervention. The lowest increase in the cumulative trend was displayed (3.5%) in the self-awareness parameter.

**Conclusion:** The feedback from learners demonstrated that the interactive model of sleep training session was very favorably received with improved scores in all the parameters assessed. Our model paves the way for other institutes to adopt similar training sessions for learners.

**Support (if any):**

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**809 INNOVATIVE ELECTRONIC SLEEP MITIGATION TOOL FOR MEDICAL TRAINEES.**  
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**Introduction:** The ACGME (Accreditation Council for Graduate Medical Education) has been advocating for training of medical learners in sleep and fatigue mitigation, in attempt to enhance their wellbeing. While some educational programs include a one-time sleep didactic, prone to being overlooked, there is need for an educational resource which can be accessible to the learners throughout their training span. The trainees’ needs and readiness to learn may vary from time to
time, therefore, continued access to educational resources can be very beneficial.

Methods: An electronic tool was created on Coggle, comprising of educational resources and content on the basic tenets of sleep quality, regulation, effects of deprivation and strategies to mitigate these effects. Links to free resources made available by AASM, such as “Choose Sleep,” were also included. The sleep resources were then incorporated in the overall curriculum of Graduate Medical Education (GME) resources available to trainees, and was advertised in newsletters, incorporated in orientations (n=324) and wellness sessions (n=254). The GME Institutional Quality of Life data was obtained in 2018–2019 and in 2020 to ascertain baseline and post-intervention measures of wellness, workload and burn-out in trainees.

Results: Data collected in 2020, after introduction of Coggle, demonstrated: 1) A 4% increase of residents (n=1041) would rate their workload as “just right.” 2) A 9% increase of residents (n=1040) said their personal health and wellbeing was “very good” and “good.” 3) A 12% decrease of residents (n=1040) said they felt burned out at work. 4) A 5% decrease of residents (n=1037) said they felt they had become more calloused towards people since they first started training.

Conclusion: The analysis of learners’ feedback demonstrated that access to sleep training resources on a continuous, on-demand basis improved trainees’ personal health and wellbeing. The positive impact was sustained despite unprecedented stress caused by the COVID-19 pandemic. Future steps include: 1) Moving the electronic tool to a more advanced platform with analytical capabilities. 2) Obtaining longitudinal data to assess the impact of the electronic tool on medical trainees’ sleep parameters. 3) Sharing the electronic tool with other organizations to improve wellbeing of all medical trainees and health professionals.

Support (if any):

810 HOW MUCH DOES IT REALLY COST? BARRIERS, BOTTLENECKS AND BILLING IN SLEEP DIAGNOSTICS
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Introduction: Utilization rates of home sleep apnea tests (HSATs) versus in-lab polysomnograms (PSGs) vary greatly among healthcare institutions. HSATs can provide expanded testing capacity and offload operational bottlenecks in sleep labs, however, the financial benefit of this is not well quantified. Comparison of testing utilization and profitability between institutions can provide greater insight into decisions regarding sleep lab operations and expansion.

Methods: We analyzed profitability of HSATs and PSGs in 2018–2019 at two separate institutions with vastly different operational constraints and healthcare delivery models: Greater Los Angeles VA Healthcare System (GLA-VAHS) and University of California Los Angeles Health System (UCLA-HS). Both institutions own and operate independent sleep labs and offer HSATs for the diagnosis of sleep apnea. Profitability was calculated using contribution margin (CM) which factors out high fixed costs of healthcare infrastructure. CM was calculated by subtracting variable direct costs from revenue.

Results: The non-diagnostic HSAT rate was higher at GLA-VAHS compared to UCLA-HS (30.5% versus 13.1%). At both GLA-VAHS and UCLA-HS, HSATs were more profitable than PSGs on a per-unit basis (CM 47% for HSATs and 29% for PSGs at GLA-VAHS vs. 78% and 66% at UCLA-HS, respectively). Comparing the two institutions, PSGs were 14.8 times more profitable and HSATs were two times more profitable at UCLA-HS versus GLA-VAHS. When analyzed on a per-day basis, HSATs were more profitable at GLA-VAHS but PSGs were more profitable at UCLA-HS.

Conclusion: Reimbursement rates significantly impact institutional decisions to expand utilization of HSATs versus PSGs. Due to higher per-unit reimbursement rates, non-governmental and larger academic institutions may opt to aggressively expand sleep lab capacity. However, risks and benefits of such a strategy should be taken into account in light of changing market patterns and declining reimbursement rates for PSGs. Despite the seemingly higher profitability at the current time, future market volatility in PSG profitability may cause delayed amortization of costs for PSGs at large academic and private institutions compared to the relatively lower cost of expanding HSAT capacity. It may be beneficial for all types of institutions, regardless of current reimbursement rates, to expand HSAT capacity concomitantly with sleep lab expansion to mitigate financial risk.

Support (if any):

811 LESSONS FROM A PANDEMIC - STREAMLINING SLEEP APNEA CARE; IS THE FUTURE HERE?
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Introduction: Ready access to optimal care for sleep-related breathing disorders (SRBD) remains a major barrier to the vast majority of an estimated 25 million Americans with undiagnosed obstructive sleep apnea. This barrier includes lack of readily available sleep medicine expert contact, health care insurance navigation challenges and difficulties with continuity of care. Chronic pervasive gaps in sleep medicine care were exacerbated by the COVID-19 pandemic in 2020. While numerous models were previously proposed to bridge SRBD care gaps, sustained and quantifiable success has been elusive.

Methods: Deploying interactive technology and artificial intelligence, we designed and implemented a novel, user-friendly integrated medium named Ognomy - the Sleep Apnea App, to mitigate widespread SRBD care access gaps. Multi-faceted but unified open access was made widely available, allowing bidirectional patient-provider interaction through a Web App. Individuals or surrogates who suspect that they or dependents suffer from SRBD are able to readily establish secure access to Ognomy. Patients can independently download and interact with the application on-demand and around the clock.

Results: From April 2020 to date, more than seven thousand (7,726) Ognomy App downloads have been documented. Over a thousand (1,169) patient registrations have occurred on Ognomy. Five hundred seventy-four (49.1%) of Ognomy App registrants have since been provided hitherto difficult, cumbersome access to full care, by a board-certified Sleep Medicine provider. Four hundred eighty-nine (85.2%) of the 574 patients managed via Ognomy’s care provision chain proceeded to complete sleep diagnostic testing and follow-up.

Conclusion: Availability of a readily accessible and affordable multi-faceted platform for care of sleep-related breathing disorders will mitigate the burden of untreated SRBD in the United States and worldwide. Ognomy, a Sleep as a Software service, is a novel integrated tool, bridging chronic gaps in sleep apnea care. Measures that significantly alter the trajectory of Sleep Medicine care now and in the future, have the potential to systematically close existing SRBD care gaps worldwide. Innovative tools such as algorithmic scheduling, Blockchain utility for platform interoperability, facilitating insurance benefit verifications, deployed in tandem with delivery drone systems for home sleep testing, should enhance turnaround time and improve care currently available for SRBD.