Methods: Our multidisciplinary team used mixed-methods to develop and implement a sleep medicine neighborhood, an extension of the patient-centered medical home, which provides the infrastructure to coordinate care between PCPs, specialists, and other care providers. We then conducted a controlled, clustered trial within a large hospital-based primary clinic to assess the effectiveness of the neighborhood on processes of care.
Results: Prior to intervention, PCPs ordered 122 diagnostic sleep studies (both at-home and in-lab) in control clinics and 131 patients in intervention clinics over 12 months. During the 12-month intervention period, 179 studies were ordered in control clinics and 209 in intervention clinics. Testing was completed in 48.6% of patients from control clinics vs. 56.0% of patients from intervention clinics (p=0.15). Of those who completed sleep testing, median time from order to completion was 57 days vs. 48 days (p=0.048) in control vs. intervention clinics, respectively. Among patients diagnosed with OSA, evaluation by a sleep specialist occurred in 40.5% vs. 77.7% (p<0.001), and continuous positive airway pressure (CPAP) was prescribed in 54.2% vs. 72.9% (p=0.009) of patients originating from control vs. intervention clinics. Among those prescribed CPAP, the proportion initiating CPAP was 53.3% vs. 61.4% (p=0.03) in control vs intervention clinics.
Conclusion: Patients suspected of having OSA commonly experience delays in care during the complex and fragmented processes of diagnostic testing and CPAP initiation. A collaborative care program aimed at coordinating care between PCPs and sleep specialists can improve the timeliness of diagnosing OSA and ability to implement CPAP therapy, thereby improving the quality of OSA care.
Support (If Any): American Sleep Medicine Foundation; NIH UL1TR001102.

1065

OUTCOMES IN SLEEP APNEA PATIENTS WITH NOVEL ECONSULT REFERRAL PATHWAY

Singh A[1], Billinger J[1]
[1]OHSU, Portland, OR

Introduction: Improved efficiency of OSA has been shown to lead to decreased risk of cardiovascular disease processes. Access to our academic sleep medicine clinic is limited, with an average wait time of almost three months for new in-person patient visits. In 2017, an asynchronous electronic consult (eConsult) process was developed that allows a patient to be seen by their primary care provider, who can then request an electronic health record (EHR)-based internal referral. The chart is then reviewed by the sleep physician, who either makes recommendations within the EHR or schedules an in-person visit. Utilization of eConsults in other specialties has been shown to improve wait times to access specialist services as well as improved communication between primary care providers and specialists, but no study to date has examined sleep medicine or neurology.
Methods: A retrospective review was conducted on all patients referred to the sleep medicine clinic via the eConsult program from January to October 2017. Data regarding time from eConsult request to sleep provider response was extracted from our EHR. The average time from PCP referral to appointment in the neurology sleep clinic was compared to the average time from PCP referral to the response time by eConsult by the sleep medicine physician. Baseline blood pressure, weight, hospital admission status were compared to final status.
Results: PCPs submitted 142 eConsults to the sleep medicine service from January 2017 through October 2017. The median specialist response time was 2 days versus the average consult response time of 3 months.
Conclusion: PCPs submitted 142 eConsults to the sleep medicine service from January 2017 through October 2017. The median specialist response time was 2 days versus the average consult response time of 3 months.
Support (If Any): none.

1066

INTERRATER RELIABILITY IN TELEMEDICINE VS. IN-PERSON EVALUATIONS FOR OBSTRUCTIVE SLEEP APNEA

Yurcheshen M[1], Marsella J[1], Nguyen K[2], Marcus J[1], Marcus C[1], Dorsey E[1], Pigeon W[1]
[1]University of Rochester School of Medicine and Dentistry, Rochester, NY, [2]Saddleback Memorial Hospital, Los Angeles, CA

Introduction: Telemedicine holds great promise to change health care delivery for all of clinical medicine. There is a paucity of sleep medicine providers nationwide, and online consultations have the promise of reaching remote populations who have limited access to these specialists. Technology exists to conduct telemedicine consultation for patients with obstructive sleep apnea (OSA), but the accuracy of telemedicine evaluations is unknown.
Methods: The clinical trial is a prospective, researcher-randomized and blinded comparison study. The study goal is to determine how telemedicine evaluation compares to in-person evaluation in identifying risk for sleep disordered breathing. The primary objective is to measure the interrater reliability between a telemedicine and traditional clinician in judging pre-test probability for OSA. Goal recruitment is 90 subjects based on power calculations for substantial or excellent interrater reliability based on the true kappa statistic. Three board-certified/eligible sleep specialists recruit subjects from serial referrals in a university setting. The in-person researcher conducts a record review, interview, and upper-airway examination, and the randomized telemedicine researcher does so online. Clinical impressions of pre-test probability (low, moderate, or high) for significant sleep apnea are compared, as well as impressions on home sleep testing. Subject and provider satisfaction are also measured.
Results: 45 subjects have entered the study, and 24 have completed the entire protocol. Based on a sample size of 17 home sleep-study completers, we calculate an interrater agreement (kappa) value of 0.577 (standard error 0.21, 95% confidence interval 0.17–0.98) in determining the severity of OSA based on home sleep testing.
Conclusion: These results demonstrate a moderate agreement between in-person and telemedicine providers in determining the severity of sleep apnea on home testing in this sample. This suggests reasonable concordance in developing evaluation/management plans in-person versus online. Technical concerns as well as individual provider/researcher differences and a small sample size may account for differences in this outcome measure. Outcome studies in subjects with OSA managed with telemedicine are needed to develop reliable clinical telemedicine practices.
Support (If Any): The American Sleep Medicine Foundation supports this study with a Focused Project Award.

1067

PATIENT SATISFACTION AND PREFERENCES REGARDING A TELEMEDICINE EVALUATION FOR OBSTRUCTIVE SLEEP APNEA - AN UPDATE FOR 2017

Marsella JL[1], Nguyen KD[2], Marcus JA[1], Marcus CZ[1], Dorsey ER[1], Pigeon WR[1], Yurcheshen ME[1]
[1]University of Rochester School of Medicine and Dentistry, Sleep Medicine, Rochester, NY, [2]Saddleback Memorial Medical Center, Laguna Hills, CA

Introduction: Obstructive sleep apnea (OSA) is a common condition that is widely underdiagnosed. In adults ranging from 30 to 70 years of age, it is estimated that the prevalence of OSA is 26 percent. Many patients are undiagnosed, and access to evaluation is limited due to geographic concerns and the paucity of sleep specialists. Telemedicine visits may allow for greater access to this care. Patient-centered care and satisfaction surveys are an important way to better assess patient needs.
Methods: Subjects ranging from 30–70 years of age, with a variety of sleep concerns, were recruited from the University of Rochester sleep center as part of an inter-rater reliability study. Subjects were evaluated in-person and online. During the telemedicine encounter, a separate, randomized provider performed an independent evaluation for OSA via tele-video conferencing with the subject. Following this encounter, subjects were given a link to an online survey to complete regarding their experience.
Results: Of 50 subjects that were recruited to date, 28 (56%) successfully completed the telemedicine encounter and online survey. Of these patients, 82% had never before had a telemedicine encounter with a provider. However, 75% had communicated with their provider through a secure email program at some point and 32% did this routinely. The majority, 82%, of subjects felt comfortable conducting a new patient appointment for their sleep medicine concerns via telemedicine, and 75% thought telemedicine would make it easier to make their appointments. Only 7% of subjects surveyed would not be interested in having online appointments with their sleep medicine provider, and 64% would be interested if it were the same cost or even a little bit more than their current co-pay.
Conclusion: These results suggest that patients are comfortable with telemedicine appointments for evaluation of OSA, and find it convenient to make these appointments. Telemedicine may improve access for evaluation of OSA, without reducing patient satisfaction, especially if these appointments are financially comparable to an in-person visit.
Support (If Any): The American Sleep Medicine Foundation with a Focused Project Award.

1068

UTILIZING LEAN METHODOLOGY TO IMPROVE THE SLEEP STUDY RESULTS TURNAROUND PROCESS

Kunkel H, Mullen L, Robinson N, Thomas C, Morrow K, Kaiser M, Simakajornboon N
Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Introduction: Lean methodology has been used to review processes and eliminate duplicate and non-value added work. Our goal was to use lean methodology examine the administrative processes within the sleep program to improve information flow and right size he administrative staffing of the program. The process analyzed included the segment of work that occurred from the time the sleep report was interpreted by the sleep physician to the time it was released to the referring physician.
Methods: A team of stakeholders was assembled including administrative staff, the business director, the business manager and a quality outcomes manager. Lean methodology was used as the problem-solving method. A value stream map was constructed and process step time studies were completed. Variations and non-value added steps in the process were documented.
Results: Time studies revealed a lead-time of 36.5 minutes and processing time of 16.5 minutes per study resulting in 32.8 hours per week to complete this segment of the sleep study process. The value stream map was used to identify the following steps that could be reduced or eliminated: printing, manual documentation, standardizing physician styles in report processing; additionally we reassigned tasks to the most appropriate staff. Overall, lead-time and processing time were reduced by 17 and 5.25 minutes per sleep study, respectively, resulting in 13.7 hours of time saved per week.
Conclusion: We reduced lead and processing time by 42% and found that Lean Methodology was critical to allow the team to break down the process in order to see areas of duplication or non-value added time. This revealed opportunities to standardize the process and eliminate the non-value added steps reducing the overall FTE needed to complete the administrative process of the sleep reports.
Support (If Any):

1069

INCREASING PATIENT ACCESS: IN-LABORATORY PORTABLE MONITORING PROGRAM FEASIBILITY, DIAGNOSTIC AND TREATMENT OUTCOMES

Lastra AC, Baron KG, Arantes HB, Herdegen JJ
Rush University Medical Center, Chicago, IL

Introduction: Obstructive Sleep Apnea (OSA) increases morbidity, mortality, is underdiagnosed and undertreated. Polysomnography (PSG) is increasingly denied by insurers pushing portable monitoring (PM) at lower costs. Home testing relies on proper equipment placement and comes with the financial responsibility of taking equipment home. We offer technician-assisted in-laboratory PM. We evaluated PM reliability and outcomes among patients undergoing home PM (PM in-home) compared to in-laboratory (PM in-lab).
Methods: Outpatients ≥18 years-old screened by PM (ResMed ApneaLink Air) for OSA were included in a non-randomized observational study. Device failure (<4-hours recording, oximetry, flow or effort signals), apnea-hypopnea index (AHI), oxygen time <88% (SpO^2tm<88%) were compared between groups. Patient characteristics and follow up were analyzed.
Results: 76 participants were included (average age 47.4 ± 12.5 years, 35 females). The majority of studies were conducted at home (55 PM in-home; 21 PM in-lab). Approximately half of the sample was white (51.4%). Average BMI was in the obese range (BMI=37.4 ± 8.9 Kg/m^2) and AHI was moderate to severe (AHI=25 ± 21 events/hour). There was no difference in age, sex or race/ethnicity between groups. Medicaid insurance was more common in the PM in-lab group but the difference was not statistically significant (PM in-home=19% vs. PM in-lab 9.1%, p=NS). PM in-lab group had higher BMI (35.8 ± 8.9 vs. 41.4 ± 7.7 kg/m^2, p=.01) and were more likely to have diabetes (11.8% vs. 52%, p<.001). There were 13 device failures (17.1%). The PM in-home group had more failures (21.8% vs 4.8%, p=0.09). There was no difference between groups in AHI or SpO^2tm<88%. Three patients in the PM in-home and none in the PM in-lab needed follow-up PSG for negative results, all were diagnosed with OSA. Automatic continuous positive airway pressure (aCPAP) was utilized in 72.6% of patients with available data (n=62).
Conclusion: In-laboratory PM is feasible and may result in lower testing failure, increasing access to testing in patients whom in-home testing is not possible due to cost or preference. Use of in-laboratory PM could reduce barriers to SDB diagnosis and treatment, improve diagnostic reliability and increase laboratory capacity.
Support (If Any): None.

1070

OUTCOMES OF HOME SLEEP APNEA TESTING (HSAT) AND POLYSOMNOGRAPHY (PSG) IN VETERANS SEEN IN GROUP CLINICS VERSUS INDIVIDUAL VISITS

Dholakia S[1,2], Ciavatta M[1], Ioachimescu O[1,2]
[1]Veterans Affairs, Atlanta VA Medical Center, Decatur, GA, [2]Emory University School of Medicine, Atlanta, GA