offered a group session for respiratory polygraphy with the CNS. Patients completed a short symptom questionnaire and Epworth Sleepiness Score. These measures allowed the Consultant clinic template to increase capacity from 6 to 9 patients (50% increase). Furthermore if CPAP is indicated set up is on the same day now as the CNS attends clinic too.

Results This new pathway improved RTT from a median of 121 days to 35 days. There was also significant improvement in diagnostic clinic outcomes from 18% to 88% (figure 1)

Conclusion Implementation of this new OSA pathway incorporating a symptom questionnaire and early diagnostic testing has enabled a significant increase in clinic capacity achieving an improvement in RTT of 70%. Earlier treatment commencement will also lead to quicker resolution of day time somnolence limiting the time during which patients must abstain from driving and the resulting negative impact on their livelihood and lifestyle. At a time when healthcare budgets demand more for less we have demonstrated the efficacy of this new pathway.

REFERENCE

1. <https://www.brit-thoracic.org.uk/document-library/clinical-information/sleep-apnoea/impress-service-specification-for-investigation-and-treatment-of-osas/>

Abstract P213 Figure 1 Days between referral and first seen date for all referrals to sleep clinic since April 2016.

P214

REMOTE MONITORING IN THE EARLY STAGES OF CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) INITIATION IN OBSTRUCTIVE SLEEP APNOEA (OSA) ALLOWS EARLY DETECTION OF POOR COMPLIANCE AND MASK PROBLEMS

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Background OSA is an increasingly recognised disease and successfully treated with CPAP. There are ever increasing demands on sleep services in the UK, in terms of provision, compliance and safety. One possible solution is the use of remote monitoring soon after CPAP set-up to determine usage patterns, residual apnoea-hypopnoea index (AHI) and mask problems. We have analysed our remote monitoring database to assess new patients with OSA set-up on CPAP.

Method Retrospective data was collected from patients with OSA commenced on CPAP from start of June 2017 for thirty days. All patients referred to the Aintree University Hospital

Sleep service had a cardio-respiratory sleep study and subsequently, if appropriate, referral for CPAP. All patients with OSA were commenced on a Resmed Airsense S10 device with humidification, using a predictive algorithm, and had an assessment for an appropriate interface. All data was collected with patient consent using Resmed Airview.

Results Data was available in 71 patients (male 70%) for at least two weeks within this time period. Mean CPAP usage was 5 hours 4 mins with 84.5% using full face masks. Mean Residual AHI was low at 8.5 with small numbers of residual central events recorded (Table 1). See Table for more details

Conclusion Remote monitoring provides a large amount of useful data which can potentially help improve CPAP provision in the UK. There is large proportion of patient with nocturnal hypoventilation, and despite effective treatment with CPAP, a group with a residual increase in AHI. Non-compliance and mask leak are identified issues and twenty patients used CPAP for less than an hour a night, with seven of those not at all. Remote monitoring allows early detection of non-compliance and an opportunity for earlier intervention to improve management in this patient group

Abstract P124 Table 1 Patient characteristics and effect of CPAP on OSA

Variable (Units)	n=71 Mean(SD)	Range
Age (years)	53.2 (12.4)	26–80
BMI (Kg/m ²)	36.8 (8.1)	24–65
ESS	13.0 (5.5)	2–23
Pre-treatment ODI (events/hour)	34.5 (20.0)	7.1–83.4
Pre-treatment AHI (events/hour)	36.1 (23.5)	5.7–104
Pre-treatment central events (events/hour)	2.5 (4.6)	0–23.9
Time spent below 90% SpO ₂ (%)	29.8 (26.3)	0–98.9
CPAP pressure (cm/H ₂ O)	9.6 (1.5)	6–14
Time used (hours: minutes: seconds)	05:04:15 (02:49:46)	00:00:00 – 09:33:00
Residual AHI (events/hour)	8.5 (10.7)	0–44.1
Residual Central events (events/hour)	1.0 (3.0)	0–20.1
Mask leak (litres/minute)	26.0 (24.6)	0–75.9

P215

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) VERSUS AUTO-CPAP (APAP) FOR THE INITIAL TREATMENT OF OBSTRUCTIVE SLEEP APNOEA SYNDROME: CLINICAL EFFICACY AND COST

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Introduction and Objectives APAP has been shown to be an effective way of titrating CPAP levels. Systematic reviews have shown similar treatment effects for APAP and CPAP. APAP devices are increasingly used for outpatient initiation of CPAP and subsequent long term use. In this service evaluation we assessed the clinical effectiveness and cost implications of APAP pressure titration followed by switching to long term CPAP.

Methods We collected data on 93, newly diagnosed patients with OSAS, starting on PAP, at baseline and at a 3 months follow-up visit. Patients initiated on APAP in an outpatient setting were asked to return in 2 weeks' time to swap APAP for CPAP, set at average pressure estimated by APAP. The

Abstract P215 Table 1

Outcome	Baseline	3 months	P value
ESS	12 (9-16)	5 (3-10)	0.001
ODI	23 (11-45)	2.9 (1.7-5.4)	0.001
Mean SpO ₂ (%)	94 (92-95)	96 (95-97)	0.001
BMI (kg/m ²)	35 (30-41)	-	-
Compliance (hr)	-	5.5 (3.70-6.95)	-
% of patients using CPAP≥4 hours	-	74	-

Data are presented as median and interquartile range (IQR). A p value of <0.05 was deemed statistically significant.

compliance, Epworth Sleepiness Scale (ESS) score and physiological indices; mean nocturnal SpO₂, 4% oxygen desaturation index (ODI), from nocturnal oximetry were collected at 3 months. Cost of device CPAP vs. long term APAP were compared. We also compared outcomes between patients with mild and moderate/severe OSA (ODI≥15).

Results Following 3 months of treatment patients had clinically and statistically significant improvements in measured parameters aside from change in weight (Table 1). There was no significant difference in CPAP compliance between patients with mild and moderate/severe OSA, 5.6 (3.2–6.9) vs. 5.3 (3.7–7.0) hours/night respectively, $p=0.9$. We found 74% of patients with mild OSA and 75% of patients with moderate/severe OSA used CPAP for ≥4 hours. Patients with mild OSA were sleepy with median ESS 12 (10–15) and treatment with CPAP led to significant reduction to ESS 8 (4–11), at 3 months. No patients asked to be transferred back to APAP. Transferring patients to CPAP, after initial APAP pressure titration, led to a calculated cost saving of £1 98 144 p/a, estimating that 1536 new patients initiate CPAP each year.

Conclusions - Auto CPAP titration pathway is effective in terms of the outcomes measured.

- Good compliance with significant reduction in ESS has been shown in patients with mild OSA, confirming that appropriately selected mild OSA patients can benefit from CPAP.

- Transferring patients from APAP to long term CPAP can lead to significant cost reduction.

P216 ACCURACY OF SLEEP POSITION DETECTION BY SLEEP POSITIONAL TRAINERS

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Introduction Positional Obstructive Sleep Apnoea (P-OSA) – where apnoeas or hypopnoeas occur predominantly or exclusively in the supine sleep position – is common. 5% of patients attending our service for home sleep studies meet

current diagnostic criteria. Sleep positional trainer (SPT) devices provide vibro-positional feedback to minimise supine sleep time. As discomfort difficulties which limited previous positional therapy approaches are potentially avoided, SPT devices may be a worthwhile alternative to CPAP therapy for P-OSA patients. Accuracy of SPT's positional analysis has however not been benchmarked. We compared positional analysis from 2 SPT devices with that from polygraphy equipment and sleep video recordings.

Methods 21 patients attending for home (Somnoscreen, S-Med) or in-hospital (S-Med +video) sleep study wore additional collar (Nightshift, NS) and/or belt (Nightbalance, NB) SPT device, with vibration positional feedback disabled. %sleep time supine for each device was determined. Concordance analysis evaluating sleep position registered by each device for 15 min epochs of sleep was performed from the NS, S-Med and video sleep positional analysis reports (this data is not reported by the Nightbalance device software).

Results Despite standard instructions, device setup failure occurred with NS device in 6 patients and NB device in 9 patients. Bland-Altman plots (figure 1) demonstrate reasonable but incomplete agreement between SPT devices, S-Med and video for %sleep time supine. Kappa analysis demonstrated poor overall sleep positional concordance for NS vs S-Med ($k=-0.002$), NS vs video ($k=0.196$) and S-Med vs video ($k=0.092$). Individual patient data analysis demonstrated complete sleep time concordance between NS vs S-MED or video, and S-Med vs video in some patients but consistent concordance for all 3 modalities in any individual was not seen, and there was complete discordance between modalities in other patients. Mismatch between head and torso sleep position accounted for some of these differences.

Conclusion In a real world setting we identified difficulties with SPT device setup and incomplete accuracy for sleep positional analysis by both SPT and home polygraphy equipment. Further consideration of cost-effective diagnostic precision, patient selection for SPT therapy, SPT device choice and setup and clinically relevant monitoring is required before SPT therapy is adopted.