at least two co-morbidities requiring treatment. 3 were immunosuppressed on longterm steroids. Only 1 patient reported foreign travel in the preceding month. Clinical, biochemical and radiological findings are shown in Table 1. Urinary legionella antigen was detected in all patients. Sputum PCR for legionella pneumophilia was positive in 8 cases and identified a single strain present in all samples (ST1268). Mean length of stay was 8.9 days. 6 patients (30%) required admission to intensive care for respiratory support; 2 were invasively ventilated. 18 patients were discharged home, 2 died. 65% had follow-up chest xrays showing improvement or resolution of consolidation. All cases were from the Stoke area. The HPA investigation detected the same legionella pneumophilia strain in a display spa pool at a retail unit, as found in the sputum. As no other tested sites were found to have this strain, it is very likely this was the origin of the local outbreak. All cases had visited the retail unit prior to their hospital admission.

Conclusion LP remains a possible diagnosis in any case of community acquired pneumonia. This outbreak is a reminder that patients do not always present following the classic travel history. The diagnosis needs to be considered and vigilance in microbiological testing is necessary to identify potential cases.

Screening and management of obstructive sleep apnoea

P249 OBSTRUCTIVE SLEEP APNEA OUT PATIENT SCREENING STUDY

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10.1136/thoraxjnl-2013-204457.401

Introduction Obstructive sleep apnea (OSA) is increasingly being recognised as an important health care issue. Incidence and prevalence of OSA are gradually increasing worldwide. There is increasing evidence that OSA is being considered as an independent risk factor for hypertension, diabetes mellitus, cardiovascular diseases and stroke, leading to increased cardio-metabolic morbidity and mortality. Many questionnaires are available for OSA screening. Many studies done in peri-operative population showed that the STOP-BANG questionnaire (Snoring, Tiredness, Observed apnea, high blood Pressure, BMI > 30, Age > 50, neck Circumference, Gender male) is the simplest, with a high positive predictive value. A sleep study is advised for anyone who has 3 or more positive variables from STOP-BANG. The purpose of our study was to analyse the STOP-BANG questionnaire's validity for OSA screening in the primary care setting.

Abstract P249 Table 1.

No. of positive variables	No. of patients (% of total)	Who got sleep study (% in group)	OSA confirmed (% of pt. with Sleep study in group)
3	124 (31%)	16 (12.9%)	10 (62.5%)
4	180 (45 %)	26 (14.4%)	15 (57.7%)
5	54 (13.5 %)	28 (51.8%)	21 (75%%)
6	32 (8 %)	23 (71.8%)	18 (78.2%)
7	10 (2.5%)	7 (70%)	6 (85.7%)

Increasing positive variables translated into more patients with confirmed sleep apnea when tested with sleep study.

Currently, there is no available screening tool for OSA in outpatient setting.

Methods Study involved a retrospective chart analysis from outpatient clinics. Patients from neurology and sleep clinic were excluded. Electronic medical record was used for patient selection. We randomly selected the first 400 patients who had 3 out of 8 variables from STOP-BANG.

Results Out of 400 selected patients, 124 (31%) had 3 variables, 180 (45%) had 4 variables, 54 (13.5%) had 5 variables, 32 (8%) had 6 variables & 10 (2.5%) had 7 variables. Neck circumference was not documented in the charts so the 8th variable was not available.

Out of 400 patients with 3–7 positive STOP-BANG variables, only 25% (100/400) received a sleep study and 73% (73/100) were diagnosed with OSA.

Conclusion Primary care physicians should screen all high-risk patients using STOP-BANG questionnaire. STOP-BANG is an affirmative screening tool in peri-operative population and our study indicates that it can also be an efficient screening questionnaire in primary care clinics. However more studies are needed to testify it. OSA is an easily diagnosable condition but often overlooked. Early recognition and treatment of obstructive sleep apnea may prevent adverse health consequences.

P250 REVIEW OF REFERRALS TO SLEEP CLINICS IN GLASGOW

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10.1136/thoraxjnl-2013-204457.402

Aim There is increasing pressure within Sleep Services in NHS GGC. To manage the service appropriately we felt that robust and evidence based referral guidance should be available for potential referrers. We sought to develop these by analysing content of current referrals to the service, to establish whether there was any link with clinic outcome.

Method Referrals to sleep services were audited throughout NHSGGC for the month of November 2012. We looked for information that would be helpful in pointing toward a diagnosis of OSAS. This was; the presence of snoring, witnessed apnoeas, daytime somnolence, Epworth sleepiness score (ESS) and BMI. We also looked at the outcome of the consultation in terms of whether or not further investigation was required and whether or not the patient was discharged after the first clinic appointment.

Results There were 156 referrals received. 66% were from GPs. Referral from other respiratory departments constituted 17% of referrals, from ENT departments 8%, with 9% of referrals coming from various other medical specialties.

The presence of snoring was recorded in 60% of all referrals, witnessed apnoeas in 58%, daytime sleepiness in 67%, ESS in 30% and BMI in 31%. Only 55% of all referrals included 3 or more of the above pieces of information. Occupation/driving status was recorded in only 17% of all referrals.

63% of all patients went on to have a sleep study performed, with 36% being discharged after the first clinic appointment. There appeared to be a relationship between what was recorded in the referral letter and 'clinic outcome.' When 3 or more of snoring, witnessed apnoeas, daytime sleepiness, ESS and BMI had been recorded in the referral letter, only 19% of patients were discharged after the first clinic visit without further investigation. This figure rose to 39% when less than 3 of the above

items were recorded. This trend appeared more marked specifically looking at GP referrals (20% vs 46%).

Conclusions This analysis of referrals would suggest that the quality of referral letters is linked to clinic outcome. Referrals containing very little information resulted in more patients being discharged directly from the clinic without investigation. Referral guidelines for general practice will hopefully improve the quality of referrals.

P251 PREVALENCE AND TREATMENT OUTCOME OF OBSTRUCTIVE SLEEP APNOEA (OSA) DIAGNOSED FOLLOWING PREOPERATIVE SCREENING COMPARED WITH GP OR OTHER CLINICIAN REFERRAL

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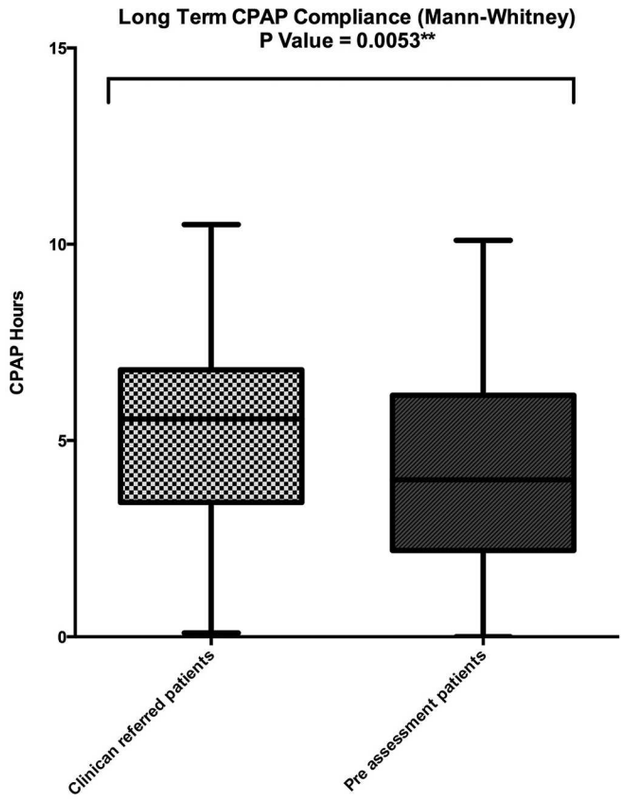
Introduction OSA is very prevalent and has potential implications perioperatively. Preoperative screening may identify high risk patients and treatment with CPAP may reduce perioperative complications, though this is unproven. We evaluated the treatment outcome and long term compliance with CPAP in patients diagnosed through preoperative screening and compared it with patients diagnosed with OSAS following GP or other clinician referral.

Method Over 2 years (October 2009–2011) 1412 patients (males-62%) had sleep studies (oximetry or respiratory variable). 44% were referred from the preassessment clinic following screening for possible OSA. The prevalence of sleep disordered breathing, the Epworth Sleepiness Score (ESS) and among those referred for a CPAP trial the outcome, long-term compliance and average use per night were compared between preassessment and clinician referred patients.



Abstract P251 Figure 1.

Results The prevalence of OSA was 62% and 58% in the clinician referred and preassessment patients respectively. There was a significant difference in age (61 +/-16 v/s 55 +/-13, P = <0.0001) and ESS (11 +/-6 v/s 8 +/-5, P = <0.0001) between the two groups. Clinician referred patients were more likely to be commenced on CPAP (P = <0.0001, OR- 2.79). Preassessment patients with mild OSA who were prescribed CPAP were more likely to fail the CPAP trial (P = 0.01, OR-3.02) and were less likely to continue CPAP treatment after one year (P = 0.02, OR-2.1). No difference was seen between the groups in patients with moderate or severe OSA. There was a significant difference in the median CPAP usage, 5.5 hours v/s 4 hours (Mann Whitney, P = 0.0053, figure-1). Both groups reported a significant improvement in ESS with CPAP (Δ ESS-5 and Δ ESS-4, P = <0.0001) between the clinician referred and preassessment patients respectively.

Conclusions The prevalence of OSA was similar in patients referred following preoperative screening or from another clinician, but preassessment patients were younger and less symptomatic. There was no difference in short or long term CPAP use in patients with moderate or severe OSA, but preassessment patients with mild OSA were less likely to use CPAP in the short or longer term. Opportunistic screening of patients awaiting surgery is worthwhile, independently of any effect of CPAP upon surgical outcomes.

P252 RESIDUAL DROWSINESS AND CPAP COMPLIANCE IN OSAS PATIENTS AND THE DVLA- ON BEHALF OF THE BRITISH THORACIC SOCIETY SLEEP APNOEA SAG

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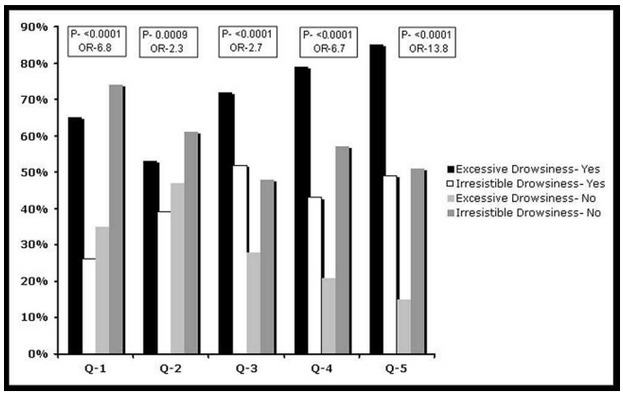
Introduction Clinicians are often asked to complete forms about patients with OSAS by the DVLA. We evaluated the current practice of assessing residual drowsiness, CPAP compliance and whether objective testing is undertaken by clinicians to assess an individual's fitness for driving.

Methods Clinicians who complete the DVLA medical forms (SL1 and SL1V) were invited to participate in a web-based survey. Respondents were presented with five vignettes of patients with OSAS offered CPAP and to answer the questions posed by the DVLA about residual drowsiness ("excessive" (SL1) or



Abstract P252 Figure 1.