Spoken sessions

and 18.6 (6.5)%, $p = 0.028$ and $p = 0.035$; NRDI 480.4 (256.0)/min, 314.7 (125.6)/min and 379.5 (138.0)/min, $p = 0.22$ and $p = 0.012$; Figure 1).

There were no significant differences in cardiac function between baseline and 3M-FU (TAPSE: 2.6 (0.6) mm vs. 2.4 (0.4) mm, $p = 1.00$) or systolic pulmonary artery pressures (sPAP 36.7 (15.2) mmHg vs 35.8 (16.2) mmHg, $p: 0.50$). The TAPSE score in compliant patients seemed to improve ($n = 3$; 2.3 (0.6) mm vs. 2.7 (0.3) mm) while non compliant patients experienced a deterioration ($n = 3$; 2.7 (0.5) mm vs. 2.2 (0.4) mm).

Conclusions NIV improves NRD and respiratory parameters in patients with OHS. However, cardiac function does not improve over a three-month period despite the significant improvements in ventilation. These results are influenced by treatment adherence.

Abstract S56 Figure 1 EMG para%max improves following setup of NIV And at 3 month in OHS: (*) $p < 0.05$

S57 QUALITATIVE ASSESSMENT OF THE EXPERIENCE OF TELEMONITORING IN VENTILATED PATIENTS WITH MOTOR NEURONE DISEASE

¹H Ashcroft, ¹H Ando, ²R Halhead, ¹B Chakrabarti, ³CA Young, ⁴R Cousins, ¹RM Angus. ¹Aintree University Hospital NHS Foundation Trust, Liverpool, UK; ²Docobo Ltd, Leatherhead, UK; ³The Walton Centre NHS Foundation Trust, Liverpool, UK; ⁴Liverpool Hope University, Liverpool, UK

10.1136/thoraxjnl-2016-209333.63

Background The National Institute for Health and care Excellence (NICE) has recently issued recommendations on the care of people with motor neurone disease (MND), promoting tailored care for each patient, Guideline 42, 2016. Previous studies suggest remote monitoring offers a facility to regularly monitor and interact with patients, providing timely interventions so it may facilitate delivery of the recommendations. The efficacy of this approach is dependent upon acceptability of telemonitoring to patients.

Aim To understand the experiences of using telemonitoring in ventilated patients with MND.

Methods Semi-structured interviews were conducted with seven patients (male = 5; mean age = 63 yrs). The median illness duration was 14 m (range = 7 m–13 yrs 7 m) and the median non-

invasive ventilation (NIV) usage was 12 m (range = 0 m–3 yrs). Participants used a telemonitoring device (Docobo CAREPORTAL[®]) for six months, completed weekly nocturnal pulse oximetry and symptom-related questions. Five caregivers were present at the interviews and provided their feedback. Interviews were audio recorded and transcribed verbatim. Thematic analysis was conducted to find overarching themes. The interpretation was reviewed and supported by a multidisciplinary team examination. **Findings** Five themes were identified: Technical Challenges, Increased Self-Awareness, Taking Initiative, Benefits of Timely Intervention, and Reducing the Unnecessary. Whilst participants expressed general ease of Careportal[®] use, technical issues included; messaging system challenges, oximetry transmission, device fault, mobile signal loss. No other negative experience of using Careportal[®] was reported. Overall, participants expressed how telemonitoring enabled symptom awareness and interpretation. The device also enabled the participants to raise their concerns and/or requests to the healthcare professionals via the messaging system, and this was depicted as a sharp contrast to current communication with hospitals. Timely interventions were observed as a result of regular monitoring, contributing to both physical and psychological well-being of the participants. It was also suggested that using Careportal[®] could reduce unnecessary cost/time and hassles created by attending hospital appointments. **Conclusions** Telemonitoring enabled participants to be actively involved in their care and they felt that the interventions were timely delivered to meet their needs. The findings suggest potential benefits of utilising Careportal[®] in routine care as a contact point to accommodate different individual's needs.

Supported by an SBRI Grant

S58 THE USE OF REMOTE MONITORING TO ASSESS VENTILATOR ADHERENCE AND OUTCOMES WITHIN A REGIONAL HOME MECHANICAL VENTILATION SERVICE

¹YM Gn, ²R Moses, ²A Vyas. ¹Manchester Medical School, Manchester, UK; ²Lancashire Teaching Hospitals NHS Foundation Trust, Preston, UK

10.1136/thoraxjnl-2016-209333.64

Introduction Home mechanical ventilation (HMV) is a recognised evidence-based intervention for patients in chronic respiratory failure (CRF). However there is a paucity of evidence on the adherence to this treatment. This study examined the adherence of HMV and evaluated the clinical outcomes associated with adherence in a variety of patient populations – namely neuromuscular disease, chest wall disease, obesity hypoventilation syndrome and chronic obstructive pulmonary disease (COPD).

Methods A retrospective study was carried out between May to June 2016. Adherence data was downloaded through remote monitoring. Primary outcomes included changes in blood gases at 3 and 6 months, and hospital admissions 12 months pre- and post-ventilation. Qualitative outcomes were obtained through a questionnaire conducted via telephone interviews.

Results 62 patients were included in this study. Patients undertaking remote monitoring of HMV demonstrated an adherence rate of 90.3%, defined as more than 4 hours of ventilator use/night (mean [SD] = 7h 17min [2h 53min]). No significant difference in adherence was found between patients of different aetiologies. The blood gases improved significantly at 3 months compared to baseline ($p < 0.05$). However, there was a universal trend for these parameters to return to baseline at 6 months regardless of the underlying disease. HMV reduced hospital admissions by

1.07 (1.27) per individual per annum ($p < 0.0001$) and was most significant in the COPD group ($p = 0.005$). All patient groups indicated that HMV improved their quality of life.

Conclusion This study has demonstrated that contrary to existing evidence, the adherence to HMV was extremely good across all diseases. Remote monitoring may play a role in this increased adherence. Although HMV contributed to improvements in blood gases at 3 months, there was a universal trend for these parameters to return to baseline at 6 months in all disease states despite good adherence. Our data therefore suggests that early follow-up is essential to detect deterioration and support the need for palliation. Nevertheless HMV remains an effective treatment to reduce hospital admissions and improve quality of life, if patients are adherent to the intervention.

S59 UTILITY OF AN AUTO-TITRATING PROTOCOL FOR THE SETUP OF NOCTURNAL NON-INVASIVE VENTILATION

C Carlin, G McDowell, C Williams, A Brown, C Canavan, R Tourish. *Department of Respiratory Medicine, Queen Elizabeth University Hospital, Glasgow, UK*

10.1136/thoraxjnl-2016-209333.65

Background The prevalence of conditions requiring nocturnal breathing support is increasing. Evidence is accumulating that early delivery of optimised nocturnal non-invasive ventilation (nNIV) improves acceptability and longer term NIV usage. The AVAPS-AE (adaptive volume assured pressure support with auto-EPAP) mode of the Respironics A40 ventilator offers prospects of fully auto-titrated NIV. After obtaining initial experience, we adopted use of this ventilator mode for initial nNIV titration in patients with nocturnal hypoventilation (excluding those with neuromuscular disorders), with aim of improving service efficiency and patient outcomes.

Methods Patients with nocturnal hypoventilation disorders (majority obesity-related) attend our tertiary inpatient breathing support service. In early 2014 we established a protocol for auto-NIV setup which consists of first night sleep study with morning capillary blood gases (+ancillary cardiorespiratory investigations if indicated), second night on AVAPS-AE mode NIV and then transition on third night to fixed ST mode bilevel NIV based on the A40 ventilator report, supported by appropriate improvement and then stability in sleep quality, daytime symptoms, ventilator integration, overnight transcutaneous and morning blood gas measurements.

Results Between March 2014 and June 2016 103 patients received AVAPS-AE mode ventilation for initial setup or re-titration of nNIV. The majority of patients tolerated auto-NIV setup protocol well, and were discharged on 'fixed' NIV using a less expensive generator with the A40 derived settings, and did not subsequently require ventilator adjustments. Auto-NIV derived settings typically indicated higher backup rates and unpredictable IPAP/EPAP requirements compared with previous experience. 21 patients continue on AVAPS-AE mode NIV long term based on high pressure support or labile ventilation requirements with

suboptimal clinical parameters on fixed NIV. Mean length of stay for breathing support assessment has been reduced by >1 day since the adoption of auto-NIV setup protocol, and clinic follow up has also been rationalised.

Conclusions Auto-NIV setup protocol achieves significant service efficiencies. This patient cohort will continue to be studied to judge other clinical benefits, but prospective clinical trials with AVAPS-AE or similar ventilator modes for acute NIV and elective outpatient nNIV are justified.

Advances in Thoracic Surgery

S60 LUNG CANCER SURGICAL SURVIVAL AND VOLUME IN ENGLAND

¹D West, ²P Beckett, ³A Khakwani, ³R Hubbard, ²R Dickinson, ²I Woolhouse. ¹*Society of Cardiothoracic Surgeons, London, UK*; ²*Royal College of Physicians, London, UK*; ³*University of Nottingham, Nottingham, UK*

10.1136/thoraxjnl-2016-209333.66

Introduction The National Lung Cancer Audit has collected data for over 10 years demonstrating gradually rising resection rates in the UK. The Clinical (formerly Consultant) Outcomes Programme (COP) is an NHS England initiative, managed by HQIP, using national audit data to publish quality measures at the level of individual consultants. The lung cancer COP focusses on activity at individual surgeon level, and on survival at unit level. The first lung cancer COP in 2014 demonstrated overall 30 and 90-day survival of 97.8% and 95.5%.

Methods Data submitted to the NLCA for patients having curative-intent surgery who underwent surgery in 2013 was sent to the clinical lead at each surgical unit for validation and addition of responsible surgeon GMC number, with the option to add surgical cases if they were not included in the supplied dataset. Date of death was derived by a link to the Office of National Statistics. Units reporting unadjusted survival proportions more than three standard errors outside the national mean ("alarm" level) at 30 or 90 days were identified as statistical outliers.

Results All of the 28 surgical units in England participated in the audit, submitting a total of 4892 cases. Median annual unit activity was 156 resections (IQR 99–221, range 39–481). Median annual activity for individual surgeons was 39 (IQR 20–52, range 1–152). Overall 30-day survival was 98% and 90-day survival was 96%. There were no units with statistical outliers at the alarm level at 30-days and 90-days (see Figure).

Conclusion Volume of activity varies widely by unit and individual surgeon. Survival after lung cancer surgery is very high, is improving, and is not statistically significantly different across the surgical units in England. This suggests that lung cancer teams may still be risk averse when considering surgical treatment of their patients. Reasons why patients die between 30 and 90 days is worthy of further investigation. Case-mix adjustment will be needed to allow robust comparisons between units.