TP during MT. 20 patients have died during follow up (none procedure-related) of which 11 still had their IPC *in situ*. Complications–2 blocked drains (not talc group, 1 case needing additional thoracocentesis), 2 leaking caps (replaced).

Discussion IPC insertion at MT with or without TP for cases of suspected TL appears to be safe, effective and obviates the need for further pleural intervention at a later date. This potentially has significant benefits to the patient as well as a reduction in overall healthcare costs to the NHS. Using the above criteria predicted TL in 78% of patients. This single centre observation needs to be investigated by a larger multi-centre study in patients with suspected TL at MT.

Abstract S83 Table 1.

Benign diagnosis (No.)	Malignant diagnosis (No.)
Pleuritis (7)	Malignant mesothelioma (4)
Pleural fibrosis (1)	Lung cancer (3)
Benign haemorrhagic (2)	Breast cancer (4)
	GI/renal cancer (5)
	Gynaecological cancer (2)
	Others (8)

Improving long term outcome in chronic respiratory failure

S84 THE EFFECT OF PATIENT VENTILATOR ASYNCHRONY (PVA) ON HEALTH RELATED QUALITY OF LIFE DURING INITIATION OF HOME MECHANICAL VENTILATION (HMV)

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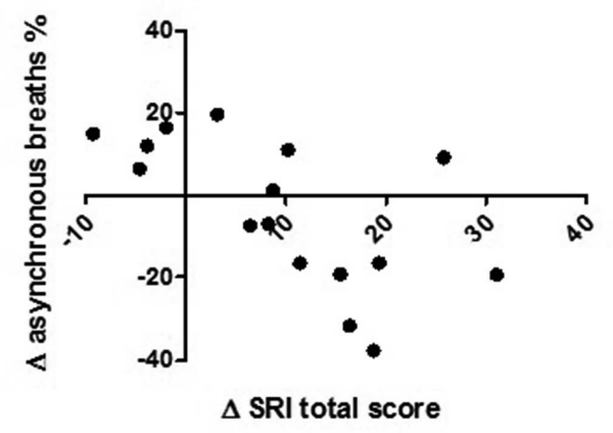
Introduction Poor patient-ventilator interaction has been shown to adversely affect respiratory muscle unloading, sleep quality, gas exchange and patient comfort whilst on ventilation. We hypothesised that nocturnal PVA during the first 3 months HMV initiation would have an adverse effect on patient health related quality of life.

Methods Recording neural respiratory drive, as assessed by the parasternal intercostal electromyogram, respiratory inductance plethysmography and mask pressure waveform we performed a comprehensive assessment of PVA overnight both on initiation of HMV and at 3 months. Asynchrony levels were recorded as a percentage of the total of number of breaths that were both requested and received by the patient overnight. The severe respiratory insufficiency questionnaire (SRI) was completed by patients at both of these hospital visits. Daytime arterial partial pressure of carbon dioxide (P_aCO_2) was also assessed.

Results 16 patients (8 male) admitted for initiation of HMV were recruited. 7 with neuromuscular or chest wall disease, 6 with chronic obstructive pulmonary disease and 3 with obesity related respiratory failure. Adherence to ventilation at 3 months was 6h 38m (1h35m-7h32m). There was an overall improvement in SRI scores of 9.5 (-0.7 to 18.2) points with the largest improvement observed in the anxiety component with an increase of 20 (5.6–35) points followed by the sleep component of 12.5 (3.6–28.6) points over the 3 months. A significant inverse correlation was observed with the change in asynchrony levels and the change in SRI scores over the 3 month assessment period (r_s = -0.70; p = 0.02; Figure 1). No significant correlation was observed between the change in P_aCO_2 and change in SRI score.

Conclusion Enhancing patient-ventilator interaction, in particular reducing patient-ventilator asynchrony, had a direct correlation with improving health related quality of life of patients receiving HMV. Importantly, the anxiety and sleep components of the SRI were the most improved over the 3 months of treatment indicating the enhancement in perceived sleep quality with the psychological benefit of HMV treatment.



Abstract S90 Figure 1. Change in PVA levels against change in SRI total scores during 3 months of HMV.

S85 INITIATION OF LONG-TERM NON-INVASIVE VENTILATION ENABLES SUCCESSFUL WEANING FROM PROLONGED MECHANICAL VENTILATION

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Introduction Prolonged mechanical ventilation is an increasing workload for intensive care units (ICU). Units distinct from ICU can provide step-down care for stable slow-to-wean patients and facilitate weaning by the use of long-term non-invasive ventilation (NIV). Development has been limited in the UK despite being recommended by the NHS Modernisation Agency in 2002 and reiterated by the NHS Commissioning Board in 2013. A unit opened at our hospital in September 2010 as part of a comprehensive complex home ventilation service.

Methods Review of completed in-patient episodes of transfers for weaning from invasive mechanical ventilation (IMV) from September 2010 to December 2012. Transfers following neurosurgery were compared with allcomers.

Results Thirty-nine patients were identified, mean age 54.2 (17.9) years, 24 male. Average length of stay (LOS) on the referring ICU was 49 days. Six had neuromuscular disease, nine COPD, 7 were obese or had chest wall disease, 14 ICU-acquired weakness and 3 used NIV prior to ICU admission. Thirty-five patients survived to hospital discharge.

Thirty-one patients were successfully decannulated and weaned from IMV, including the use of nocturnal NIV. Twelve required no ventilatory support, 19 were discharged using nocturnal NIV and 5 continued nocturnal IMV (one of own choice). Twenty-two were discharged directly home, 7 to rehabilitation or the referring hospital and 6 to long-term nursing care. Thirty-four patients were alive 6 months after hospital discharge.

Seven transfers had undergone neurosurgery, five having posterior fossa surgery. Compared with allcomers they were significantly more likely to have permanent bulbar dysfunction, require feeding gastrostomy, tracheostomy on discharge, have a longer LOS (106 vs 51 days) and were less likely to be discharged home. Long-term NIV was used in two neurosurgical patients compared with 17 allcomers.

Conclusions Patients with weaning failure can be effectively managed outside ICU. NIV enabled weaning in 50% of cases; consistent with published experience[1]. Six month survival is good and most are discharged directly home. Patients after neurosurgery present a specific challenge. NIV may not possible, and ongoing bulbar dysfunction may necessitate the retention of a tracheostomy for ventilation, airway protection and suction.

REFERENCES

1. Pilcher *et al. Thorax* 2005:187–192.

S86 CHANGE IN PATIENT DEMOGRAPHICS AND HOME MECHANICAL VENTILATION (HMV) SET UP FOR PATIENTS WITH CHRONIC RESPIRATORY FAILURE BETWEEN 2006 AND 2012

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Introduction HMV is standard therapy for long term management of chronic respiratory failure in patients with neuromuscular disease (NMD), chest wall disease (CWD), chronic obstructive pulmonary disease (COPD) and obesity related respiratory failure (ORRF). This study investigated changing trends in patient demographics and HMV ventilator set up over a 7-year period.

Methods Data from a bespoke discharge summary system (Carevue, Philips Corporation, US) of patients established on HMV from 2006 to 2012 were analysed. Patient demographic and anthropometric data, including spirometry and arterial blood gas values were analysed. Difference in length of stay (LOS) for non-invasive ventilation (NIV) set up and trends in the ventilator pressures was performed. A p-value <0.05 was considered significant.

Results 952 patients (518 male) were reviewed with a mean age of 57 ± 16 years. HMV set ups rose by 32.1% over the 7 years. The largest increase was observed in the ORRF group from 44% to 53% of the cohort. In comparison with 2006, NMD/CWD patients were started on HMV with lower arterial partial pressure of carbon dioxide (P_aCO_2) in 2012, whilst COPD patients were initiated on HMV at a higher P_aCO_2 (Table 1). LOS for elective NIV set up fell between 2006 and 2012 (4 (2–7) vs 2 (1–3) days; <0.0001). An increase in inspiratory positive airway pressure (IPAP) was demonstrated across all groups with a decrease in expiratory positive airway pressure (EPAP) demonstrated in NMD/CWD and COPD groups (Table 1).

Conclusions This study demonstrated an increasing demand for HMV in the UK. This was most marked in the ORRF group in line with rising levels of obesity. In 2012, NMD/CWD patients were being initiated on HMV earlier in the course of chronic respiratory failure, whereas COPD patients were being initiated when chronic respiratory failure was well established. A significant increase was observed in the inspiratory pressures delivered across all groups with a reduction in the expiratory pressures in the NMD/CWD patients as well as the patients with COPD. Efficiency of HMV set up has improved, as reflected by the reduced LOS and this is the result of a more structured clinical pathway.

Abstract S86 Table 1. Changes in spirometric measurement, arterial blood gas measurements and ventilator settings of patients initiating HMV between 2006 and 2012.

Analysed parameters	2006		2012		p value
	mean	SD	mean	SD	
FEV1 (L/s)	0.9	0.5	1.1	0.4	0.2
NMD/CWD	0.7	0.3	0.6	0.2	0.8
COPD	1.6	0.7	1.9	1.2	0.1
ORRF	1.1	0.5	1.4	0.4	0.04*
FVC (L)	1.2	0.5	1.4	0.5	0.4
NMD/CWD	2.0	0.8	2.4	1.4	0.1
COPD	9.9	1.4	9.8	2.5	0.9
ORRF	8.0	1.2	8.5	1.9	0.3
PaO_2 (kPa)	9.1	1.6	8.9	1.5	0.6
NMD/CWD	7.7	0.6	7.5	1.6	0.01*
COPD	7.5	1.1	8.6	1.2	<0.01*
ORRF	6.9	1.1	6.6	1.4	0.2
$PaCO_2$ (kPa)	30	3	33	5	0.04*
NMD/CWD	33	4	37	5	<0.01*
COPD	31	4	29	4	0.03*
ORRF					
HCO_3 (mmol/L)					
NMD/CWD					
COPD					
ORRF					
IPAP (cmH2O)	Median	IQR	Median	IQR	
NMD/CWD	16	14-18	20	17-24	<0.01
COPD	24	20-25	26	24-28	<0.01
ORRF	22	18-25	24	19-28	<0.05
EPAP (cmH2O)					
NMD/CWD	5	4-8	4	3-5	<0.01
COPD	6	5-10	4	3-5	<0.01
ORRF	12	10-16	12	10-19	0.1

*Significant difference (p value <0.05) between 2006 and 2012

S87 THE EFFECT OF ON PATIENT COMFORT AND NEURAL RESPIRATORY DRIVE (NRD) OF VENTILATOR TRIGGER DELAY DURING NON-INVASIVE VENTILATION (NIV)

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Introduction Optimising patient-ventilator interaction (PVI) has been shown to enhance patient comfort and respiratory muscle unloading. A major cause of poor PVI is ventilator trigger delay,