patients often reside outside of formal health-care environments. Tracheostomy tubes generally need to be changed monthly. Our unit undertakes the majority of tube changes in the patient's home. There are little data evaluating the safety of this procedure outside of the hospital.

Method We conducted a retrospective review of domiciliary tracheostomy tube changes on ventilator dependent patients. Concurrently all HMV-UK network centres were sent a basic electronic survey. Data collection took place during December 2014.

Results E-Surveys were sent to 37 centres. Responses were received from 12 (32%). 75% (n = 9) of those responding undertake the majority of tracheostomy changes in the community, 1 centre brings patients into hospital. 2 others do not routinely manage T-HMV patients. Tube changes undertaken at home, are frequently but not exclusively completed by trained professionals including care support workers. 5 areas reported that family members undertake some domiciliary tube changes.

The notes of 11 ventilator dependent T-HMV patients were reviewed. Each patient had a mean 9.2 domiciliary tube changes undertaken by the respiratory outreach team. 72% (n = 66) of changes took place without complication or incident. Of the 26 changes which had documented complications, 69% related to minor bleeding only, 3 described moderate bleeding. 5 changes were associated with incidents. 3 of these related to difficulty inserting a new tube with 1 patient requiring a smaller diameter replacement tube. 1 patient, erroneously, had a wrong diameter tube inserted, this was not replaced as the patient found it more comfortable and continued to ventilate effectively. 1 change was associated with loss of speech for 24-hours post procedure. Nobody was admitted or harmed as a direct result of a tube changed at home.

The notes of a further patient were reviewed. Approximately 50 domiciliary tube changes were undertaken by her brother without supervision or involvement of health care workers. There were no documented complications or admissions as a result of these changes.

Conclusion Domiciliary tracheostomy tube change by trained personnel on ventilator dependent patients is safe and effective.

Abstract P193 Figure 1 Chart detailing the outcome of 92 domiciliary tracheostomy changes on ventilator dependent patients

P194

INPATIENT ADJUSTMENT OF SUB-OPTIMAL HOME MECHANICAL VENTILATION (HMV) – AN EFFECTIVE USE OF RESOURCES?

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10.1136/thoraxjnl-2015-207770.331

Introduction HMV can be initiated and monitored as either inpatient or outpatient. There is little evidence for best practice in this field and inpatient ventilation beds are a scarce resource. We evaluated patients, with sub-optimal HMV, admitted to our tertiary unit for adjustments to consider whether these admissions were successful, and hence an effective use of resources.

Methods Patients were identified from our ventilation unit's database. Notes, oximetry and ventilator download from pre-admission, pre-discharge and post-discharge were retrospectively analysed.

Results In a 6-month period (June–December 2013) 30 patients were admitted to our unit for adjustments of HMV. 43% were female. Obesity related sleep disorder formed the majority of underlying conditions (53%), with musculoskeletal deformities (20%) and neuromuscular conditions (10%) also frequently seen. Median length of stay was 2 days. HMV was discontinued during admission in 2 cases in line with patient wishes.

19 (63%) were deemed to have had successful admissions, defined as normalisation of at least one abnormal ventilation parameter (pCO₂ >6.0, desaturations >14/hr, time below 90% of >30 min, mean saturations of <88%, usage >6 hrs, leak <50 L/min). Of the 19 successful admissions, 6 showed sustained improvement post-discharge. 11 (37%) admissions were deemed unsuccessful, poor baseline usage and missed outpatient appointments were observed in this group. Noteworthy improvements were made to oximetry parameters during admission, although not all of these were maintained post-discharge (Table 1).

Abstract P194 Table 1

N = 30	Oximetry		
	Desaturations >14/hr	>30 mins <90%	Mean saturations <88%
Pre admission	8 (27%)	23 (77%)	9 (30%)
Pre discharge	2 (7%)	6 (20%)	3 (10%)
Post discharge	4 (13%)	18 (60%)	2 (7%)

Ventilator leak and usage information was available for 22 (73%) patients. Excess leak (50 >L/min) was seen in 10 patients pre-admission, only 1 patient had excess leak post-discharge. Pre-admission usage of <2 h/night was seen in 6 patients, only 1 showed sustained improvement in usage. 8 patients were admitted with usage of 2–4 h, 4 improved post discharge usage to >6 h and only 1 showed deterioration in usage.

Conclusion Admitting patients for adjustments to HMV can improve ventilation parameters yet only some of these improvements are maintained after discharge. There appears to be a subset of patients who do not benefit from inpatient admissions, particularly patients with poor baseline usage. We suggest careful selection of patients to ensure effective use of limited resources.

P195

DEMOGRAPHICS AND OUTCOMES OF NIV IN MND: A FRONTLINE PERSPECTIVE

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10.1136/thoraxjnl-2015-207770.332

Introduction Non-invasive ventilation (NIV) in motor neurone disease (MND) is an evidence-based therapy, recommended by NICE. A single centre randomised trial of 41 patients underpins much of current practice,¹ it was suggested our patient cohort may differ from those in the original trial work.

Methods Retrospective review of all patients offered NIV from 01.01.2013 to 30.06.2015. Data was taken from the initial neurology referral, and NIV set-up. Demographics were compared with the Newcastle study¹ (Table 1). Twelve month survival, and/or death post NIV initiation were assessed.

Abstract P195 Table 1 NIV trials for MND (January 2013–June 2015)

	Sleep and Ventilation Service Trial of NIV (n=51)	Bourke et al (2006) NIV group (n=22)
Age, years	66.4 (9.9)	63.7 (10.3)
Age > 75 years	8 (15.6%)	Excluded in study protocol
Sex, male	30 (59%)	14 (64%)
Bulbar signs at trial NIV	29 (57%)	-
PaO ₂ , kPa	9.2 (2.8)	10.0 (1.8)
PaCO ₂ , kPa	6.3 (1.3)	6.1 (1.1)
Body-mass index	23.8 (4.7)	21.6 (3.6)
Mean sleep SpO ₂ , %	89.4 (3.3)	92.7 (4.0)
% Sleep SpO ₂ <90%	29.6 (30.5)	27.2 (40.0)
ALSFERS-R score [x/48]	30.6 (9.0)	-
Carers required at home	15 (29%)	-
Oxygen issued with NIV	8 (15.6%)	-
IPAP, cmH ₂ O	14 (4.3)	15 (-)
EPAP, cmH ₂ O	5 (1.4)	4 (-)
Face / Nasal Interface	6 / 45	-

Legend: Data are number (%) or mean (SD). PaO₂ = arterial partial pressure of oxygen, PaCO₂ = arterial partial pressure of carbon dioxide. ALSFRS-R = Amyotrophic Lateral Sclerosis Functional Rating Scale – Revised (score/48). IPAP = Inspiratory Positive Airway Pressure, EPAP = Expiratory Positive Airway Pressure.

Results Sixty-three patients were offered trial of NIV; 5 declined admission, and 7 declined NIV. Fifty-one patients were discharged with NIV, of whom 4 rapidly discontinued ventilation. Forty-seven patients were followed as NIV users, 35 for at least a year or to death.

Fifty-seven percent were documented as having bulbar symptoms, the severity of which were not formally assessed. Twenty-nine percent received formal carer support at NIV initiation. Of the 35, 24 (68.6%) died within one year of NIV commencement, and median survival for all deaths was 177 days (range 4–630 days). Patients who died were significantly more likely to have bulbar dysfunction (18/24, $p = 0.003$) with a trend to reduced survival, median 149 vs. 239.5 days non-bulbar ($p = 0.09$). Twenty patients are alive at data collection, current median survival 292 days (range 7–793 days) and this data will affect results. Those with carers in place had a significantly lower ALSFRS-R (26.3 vs 32.4, $p = 0.008$) and shorter median survival (135 days). Of those dying or surviving at least a year, 22/35 (63%) were issued with cough-assist support (18/22 mechanical in/exsufflation).

Conclusions Our cohort and outcomes are similar to those in the Bourke trial. Patients with bulbar disease, and/or pre-existing care input may have worse survival. Current users will be followed up to complete the dataset for survival. The impact of bulbar disease, cough augmentation² and carer need remain uncertain. Ways to better assess and support these groups should be sought, and adequately powered randomised trials in these areas developed.

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P196

A LOCAL DOMICILIARY NON-INVASIVE VENTILATION (NIV) SERVICE REDUCES LENGTH OF HOSPITAL STAY FOR PATIENTS UNABLE TO WEAN FROM NIV

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10.1136/thoraxjnl-2015-207770.333

Background NIV is a clinically proven treatment for acute hypercapnic respiratory failure.¹ Most patients are fully weaned from NIV before discharge from hospital but some with chronic ventilatory failure require long term NIV at home. Historically, these patients would need to wait for inpatient transfer to a tertiary centre for NIV titration. Due to the high demand for tertiary centre beds, this could take days to weeks. By this time, patients would frequently be optimised and stable on domiciliary NIV settings and only require transfer for equipment issue. A local domiciliary NIV service was commissioned in April 2012 to provide an integrated secondary care and community service closer to home and to reduce delayed discharge.

Method Data were collected prospectively from 83 consecutive patients between October 2006 and May 2014 (395.6 weeks) from patients on a respiratory ward, unable to fully wean and requiring domiciliary NIV on discharge.

Results See Table 1.

Abstract P196 Table 1 Length of stay before and after the initiation of a local NIV service

	Pre-local NIV service n = 56	Post local NIV service n = 27
Length of stay (days)	16 (3–97)	12 (3–48) t-test $p = 0.273$
Data are median (range).		

Discussion Length of stay was reduced by an average of 4 days after the local domiciliary NIV service was initiated. Although this difference did not reach statistical significance it is certainly clinically significant, with huge pressure on clinicians to discharge patients in a timely manner. By managing the majority of these patients locally, it is hoped that the resources of the tertiary centres would be freed up to accept the very complex cases that still require tertiary centre input.

Conclusion The provision of a local Domiciliary NIV service reduces length of stay by reducing waiting times for inpatient transfer to tertiary centres.

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