Supplementary tables

Table S1 – Centers' characteristics – data obtained from the pre-study survey (n=15)

Is there an outpatient consultation exclusive to HMV?	Yes	12 (80%)
	No	3 (20%)
Number of weekly hours dedicated to HMV outpatient consultation	<5	4 (33.3%)
	5-10	4 (33.3%)
	>10	4 (33.3%)
Number of patients on HMV in the previous year	<50	1 (6.7%)
	50-100	5 (33.3%)
	100-200	5 (33.3%)
	>200	4 (26.7%)
Percentage of patients on HMV for obstructive disease	<25%	1 (6.7%)
	25-50%	8 (53.3%)
	> 50%	6 (40%)

Notes: These centers are located in 5 different Nomenclature of territorial units for statistics (NUTS) II regions (out of the 7 NUTS regions in Portugal): *Norte* [6 centers], *Centro* [3], *Área Metropolitana de Lisboa* [4], *Alentejo* [1] and *Região Autónoma dos Açores* [1].

Table S2 - Comparison of patients' clinical and ventilatory characteristics related to smoking status.

Smoking status (n=568)	Never smokers (n=97)	Ever smokers (n=471)	
Age (years)	79 [73-85]	70 [63-77]	p<0.001*
BMI (kg/m^2)	32.0 [27.0-37.0]	28.0 [24.0-33.0]	p<0.001*
FEV1 (% predicted)	48.0 [37.0-58.0]	36.0 [28.0-51.0]	p<0.001*
FEV1/FVC	0.60 [0.51-0.65]	0.51 [0.37-0.61]	p<0.001*
IPAP (cmH$_2$O)	20.0 [18.0-23.0]	18.0 [16.0-22.0]	p=0.006*
EPAP (cmH$_2$O)	7.0 [6.0-8.0]	6.0 [6.0-8.0]	p=0.022*
Months on HMV	28.0 [15.0-48.0]	26.0 [13.0-58.0]	p=0.3
Ventilator usage (h/d)	8.0 [7.0-10.0]	8.0 [7.0-10.0]	p=0.3
paCO$_2$ (mmHg)	45.0 [43.0-48.0]	45.0 [42.0-51.0]	p=0.4
HCO$_3$ (mmHg)	29.0 [27.0-31.0]	28.0 [26.1-31.0]	p=0.08

Abbreviations: BMI, body mass index; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; IPAP – inspiratory positive airway pressure; EPAP – expiratory positive airway pressure; HMV – home mechanical ventilation; PaCO2 – arterial partial pressure of carbon dioxide; HCO3 - serum bicarbonate.
All data presented as median and 1st and 3rd quartiles. Mann-Whitney tests were used to compare distributions between two groups
* Statistically significant difference (p<0.05)

Table S3 - Comparison of patients' clinical and ventilatory characteristics in relation to body mass index categories

Body mass index (n=568)	BMI≥30 kg/m² (n=245)	BMI<30 kg/m² (n=323)	
Age (years)	71.0 [64.0-79.0]	72.0 [65.0-79.0]	P=0.3
FEV1 (% predicted)	49.5 [36.0-60.0]	34.0 [26.0-45.0]	p<0.001*
FEV1/FVC	0.58 [0.47 vs 0.64]	0.46 [0.35-0.60]	p<0.001*
IPAP (cmH₂O)	18.0 [16.0-23.0]	20.0 [16.0-22.0]	p=0.35
EPAP (cmH₂O)	8.0 [6.0-9.0]	6.0 [6.0-8.0]	p<0.001*
PS (cmH₂O)	11.0 [9.0-14.0]	12.0 [10.0-16.0]	p<0.001*
Months on HMV	33.0 [15.0-63.0]	24.0 [12.0-47.0]	p=0.001*
Ventilator usage (h/d)	8.0 [7.0-10.0]	8.0 [7.0-10.0]	p=0.05
PaCO₂ (mmHg)	44.0 [41.0-48.0]	47.0 [43.0-51.0]	p<0.001*
HCO₃ (mmHg)	28.0 [26.0-30.0]	29.0 [27.0-32.0]	p<0.001*

Abbreviations: BMI, body mass index; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; IPAP – inspiratory positive airway pressure; EPAP – expiratory positive airway pressure; PS – pressure support; HMV – home mechanical ventilation; PaCO2 – arterial partial pressure of carbon dioxide; HCO3 - serum bicarbonate.
All data presented as median and 1st and 3rd quartiles. Mann-Whitney tests were used to compare distributions between two groups
* Statistically significant difference (p<0.05)

Table S4 - Comparison of patients' clinical and ventilatory characteristics in relation to sleep apnea

Sleep apnea (n=373)	Moderate to severe OSA (AHI≥15 events/hour) (n=172)	No or mild OSA (AHI<15 events/hour) (n=201)	
Age (years)	71.0 [65.0-78.0]	72.0 [64.0-79.0]	p=0.3
BMI (kg/m²)	33.0 [29.0-38.0]	27.0 [23.0-31.0]	p<0.001*
FEV1 (% predicted)	53.0 [41.0-62.5]	34.0 [28.0-48.0]	p<0.001*
FEV1/FVC	0.60 [0.48-0.65]	0.51 [0.37-0.60]	p<0.001*
IPAP (cmH₂O)	18.0 [16.0-22.0]	20.0 [16.0-22.0]	p=0.006*
EPAP (cmH₂O)	8.0 [6.0-9.0]	6.0 [6.0-8.0]	p<0.001*
Months on HMV	29.5 [14.0-63.5]	32.0 [15.0-60.0]	p=0.5
Ventilator usage (h/d)	8.0 [6.0-9.0]	8.0 [7.0-9.0]	p=0.16
PaCO₂ (mmHg)	43.0 [39.0-48.0]	46.0 [43.0-51.0]	p<0.001*
HCO₃ (mmHg)	28.0 [26.0-29.0]	28.0 [27.0-32.0]	p<0.001*

Abbreviations: BMI, body mass index; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; IPAP – inspiratory positive airway pressure; EPAP – expiratory positive airway pressure; HMV – home mechanical ventilation; PaCO2 – arterial partial pressure of carbon dioxide; HCO3 - serum bicarbonate; OSA – obstructive sleep apnea; AHI - Apnea Hypopnea Index.
All data presented as median and 1st and 3rd quartiles. Mann-Whitney tests were used to compare distributions between two groups
* Statistically significant difference (p<0.05)

Table S5 - Comparison of patients' clinical and ventilatory characteristics in relation to duration of HMV

Duration of HMV (n=569)	>6 months (n=509)	≤6 months (n=60)	
Age (years)	72.0 [65.0-79.0]	70.0 [63.0-79.0]	p=0.14
BMI (kg/m^2)	28.0 [24.0-33.0]	29.0 [24.0-32.0]	p=0.40
FEV1 (% predicted)	38.0 [28.0-53.0]	44.5 [33.0-51.0]	p=0.10
FEV1/FVC	0.53 [0.38-0.62]	0.51 [0.43-0.61]	p=0.45
IPAP (cmH$_2$O)	20.0 [16.0-22.0]	17.5 [16.0-20.0]	p<0.001*
EPAP (cmH$_2$O)	7.0 [6.0-8.0]	6.0 [5.0-7.0]	p<0.001*
BURR (cpm)	15 [14-16]	15 [14-16]	p=0.20
Ventilator usage (h/d)	8.0 [7.0-10.0]	7.0 [4.5-8.0]	p<0.001*
PaCO$_2$ (mmHg)	45.0 [42.0-50.0]	48.0 [43.3-52.2]	p=0.03*
HCO$_3$ (mmHg)	28.0 [26.9-31.0]	29.0 [28.0-32.0]	p=0.02*

Abbreviations: BMI, body mass index; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; IPAP – inspiratory positive airway pressure; EPAP – expiratory positive airway pressure; BURR – backup respiratory rate; HMV – home mechanical ventilation; PaCO2 – arterial partial pressure of carbon dioxide; HCO3 - serum bicarbonate.
All data presented as median and 1st and 3rd quartiles. Mann-Whitney tests were used to compare distributions between two groups
* Statistically significant difference (p<0.05)

Table S6 - Comparison of patients' clinical and ventilatory characteristics in relation to ventilator pressures

Ventilator Pressures (n=569)	IPAP ≥20 cmH$_2$O (n=277)	IPAP <20 cmH$_2$O (n=292)	
Age (years)	72.0 [65.0-78.0]	71.5 [64.0-79.0]	p=0.4
BMI (kg/m^2)	28.0 [24.0-34.0]	29.0 [24.0-33.0]	p=0.4
FEV1 (% predicted)	34.0 [26.0-48.0]	44.0 [33.0-56.0]	p<0.001*
FEV1/FVC	0.47 [0.36-0.59]	0.58 [0.45-0.64]	p<0.001*
Months on HMV	36.0 [15.0-72.0]	21.5 [12.0-39.5]	p<0.001*
Ventilator usage (h/d)	8.0 [7.0-10.0]	8.0 [6.2-9.0]	p<0.001*
PaCO$_2$ (mmHg)	47.0 [44.0-52.0]	44.0 [41.0-48.0]	p<0.001*
HCO$_3$ (mmHg)	29.0 [27.1-31.0]	28.0 [26.0-31.0]	p=0.002*
Exacerbations in the previous year	0 [0-1]	1 [0-2]	p=0.01*

Abbreviations: BMI, body mass index; FVC, forced vital capacity; FEV1, forced expiratory volume in one second; IPAP – inspiratory positive airway pressure; HMV – home mechanical ventilation; PaCO2 – arterial partial pressure of carbon dioxide; HCO3 - serum bicarbonate.
All data presented as median and 1st and 3rd quartiles. Mann-Whitney tests were used to compare distributions between two groups

* Statistically significant difference (p<0.05)