On line supplemental material

Statistical Analysis

The study was powered to detect a difference in readmission rate of 15%, with 40% in the UC group and 25% in the ER group. This would require 152 in each group (power 80%, 2-sided alpha=0.05). With the expected mortality (20%) for an intention to treat analysis the numbers planned to be recruited was 190 per group (380 in total). An error in the original protocol stated that the recruitment target was 474. This was based on the same power calculation but for a per-protocol analysis and therefore accounting for an additional 20% attrition in subject drop out (304*0.8*0.8). As the pre determined analysis was intention to treat the final recruitment target was 380. For multiple imputation of the functional data, 40 imputed datasets were calculated using chained equation with added constraints for minimum and maximum values. Observed data at all time points were used as predictors for missing data, as well as age, gender, and home oxygen use. Analyses using imputed data and observed data were compared to check that results were similar. Data were considered to be missing at random. The numbers of missing values for each variable are presented in the supplement (table S1). A number of secondary outcomes were described in the study protocol but not presented in this main analysis paper. These include the following analyses and reasons for not presenting.

1. Muscle cross sectional area – Only performed at one site.
2. Other quality of life questionnaires – These have not been included for reasons of space and duplication of output.

3. Physical activity – Currently data being cleaned and analysed.
4. Qualitative and health economic data – Still being analysed
5. Blood biomarkers – Not yet analysed.
6. Muscle biopsies were not obtained for practical and resource reasons.

Table S1: Exercise performance and quadriceps strength comparing original and imputation data

	Usual Care				Intervention			
Measure	Original		Imputed		Original		Imputed	
	Mean	n	Mean	n	Mean	n	Mean	n
ISWT								
Discharge	104	167	102	193	94	167	94	196
6 Weeks	158	117	140	193	144	118	135	196
3 Months	163	114	149	193	140	108	138	196
12 Months	182	85	146	193	157	84	129	196
ESWT								
Discharge	136	162	132	193	126	162	124	196
6 Weeks	212	117	203	193	254	118	233	196
3 Months	268	114	252	193	268	105	257	196
12 Months	247	83	197	193	305	84	237	196
QMVC								
Baseline	13·39	188	13·32	193	12·84	187	12·87	196
Discharge	14·19	164	13·95	193	13·65	164	13·76	196
6 Weeks	14·75	117	14·02	193	14·53	117	14·04	196
3 Months	14·99	115	13·96	193	13·87	106	13·74	196
12 Months	15·77	85	14·57	193	14·98	84	14·56	196

Table S2: Cause of death

Cause of Death	Usual care (n=31)	Intervention (n=49)
Pneumonia/Chest Sepsis	10 (32.3%)	14 (28.6%)
COPD	5 (16.1%)	10 (20.4%)
MI/Acute Heart Failure	4 (12.9%)	6 (12.2%)
Unknown	3 (9.7%)	6 (12.2%)
ILD	3 (9.7%)	2 (4.1%)
Lung Cancer	3 (9.7%)	2 (4.1%)
Bowel Cancer	1 (3.2%)	2 (4.1%)
Arrythmia	0 (0.0%)	2 (4.1%)
Bowel obstruction	0 (0.0%)	2 (4.1%)
Bowel Ischaemia	0 (0.0%)	1 (2.0%)
Urinary Sepsis	1 (3.2%)	0 (0.0%)
AAA	1 (3.2%)	0 (0.0%)
Thyroid cancer	0 (0.0%)	1 (2.0%)
Laryngeal Cancer	0 (0.0%)	1 (2.0%)

Table S3: Reason for withdraw from trial during intervention period (reason given by 42/61 of subjects)

Reason	Usual Care	Intervention
Unable to cope with assessment	3	0
Not enough time to participate	1	0
Diagnosed with cancer	2	3
“Too much”	3	5
No longer wanted to do	8	7
Arthritis limiting intervention	0	1
Developed other acute co-morbidities preventing participation in trial	2	7
Total	19	23