Suppl Table 1: Interventions and/or components included or excluded as self-management

Intervention/component	Included / Excluded	Comments
Adherence to Medication	Include	Education about taking treatment correctly, promoting adherence
Ambulatory Oxygen	Exclude	Unless it concerns education or support to take prescribed treatments such as ambulatory oxygen
Breathing Techniques	Include	E.g. pursed lipped breathing
Bronchial Hygiene Techniques	Include	Mucus/airways clearance
Case Management	Exclude	Unless elements of self-management
Community Matrons	Exclude	Unless elements of self-management
Complementary Therapies	Exclude	Exclude anything on acupuncture and massage etc.
Early recognition of Symptoms/Action plans	Include	Must be self-monitoring, not external-monitoring by external agency, unless there is a teaching / training element (e.g. patient being taught how to recognise the symptoms and act accordingly)
Education	Include	Any topics
Exercise	Include	Any type of exercise.
Hospital at Home	Exclude	Unless elements of self-management
Inhaler Technique	Include	Including assessment of inhaler technique
Integrated Care	Exclude	Unless elements of self-management
Nutritional Programmes	Include	Include anything which encourages / helps people to maintain good nutrition or modify their diet. Exclude anything to do with (proprietary) supplements, dietary programmes or trials of effectiveness.
Patient empowerment	Include	As recommended by patient advisory group
Pulmonary rehabilitation	Exclude	
Relaxation	Include	Any types
Respiratory muscle training	Include	Including both inspiratory and expiratory muscle training
Smoking Cessation	Exclude	Unless as a component of a larger package (not as a single active intervention)

Stress Management	Include	Any types including counselling
Support groups	Include	As recommended by patient advisory group
Telecare	Include	Exclude if purely tele-monitoring; Not just about contact. Include if there is an encouragement/support component, e.g. help to promote adherence to medication.

Suppl table 2 Full detail of characteristics of included studies including Behnke et al exercise trial[21,22]

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
Behnke 2000[21] Germany RCT	Inclusion: Severe COPD; Patients admitted due to acute exacerbation Exclusion: Unstable cardiac disease, cor pulmonale or other co morbidities preventing exercise participation e.g. orthopaedic inabilities or peripheral vascular disease	N = 46 Recruited in hospital 4-7 days post hospital admission Of 30 completers: **Mean age (years) (SD):** Int: 64.0 (1.9) Cont: 68.0 (2.2) **Sex (male) n (%):** Int: 12 (80.0) Cont: 11 (73.3) **Mean FEV_1% predicted (SD):** Int: 34.1 (7.4) Cont: 37.5 (6.6)	**TRAINING (**n = 23) **Conventional therapy:** usual medication and 30 minutes daily breathing exercises **10-day hospital based training** including daily 6-minute treadmill and 5 self-controlled walking sessions Followed by 6 months **individually tailored home-based walking programme;** three times a day Diaries of exercise 2-weekly visits for 3 months then monthly telephone calls for 3 months	**CONTROL (**n = 23) **Conventional therapy:** usual medication and 30 minutes daily breathing exercises **10-day hospital based training** including daily 6-minute treadmill and 5 self-controlled walking sessions Advised to perform **exercise at home without specific instruction**	**Mortality -** (6 months) **QoL** – CRQ (3 and 6 months) **Exercise capacity** – 6 MWD treadmill (1, 2, 3 and 6 months) **Dyspnoea** –Baseline /Transitional Dyspnoea Index (every visit post-discharge) **Lung function** FEV_1, FVC, TLC, ITGV, DLco, RV (day 0 and 11, 3 and 6 months) **Blood gas analysis, BP, Heart Rate** (day 1 and 11 and 6 months)
Behnke 2003[22] Germany RCT	Inclusion: Severe COPD; Patients admitted due to acute exacerbation Exclusion: Unstable cardiac disease, cor pulmonale or other co morbidities preventing exercise participation *e.g.* orthopaedic inabilities or peripheral vascular disease	N = 46 Follow up of 26 of 30 patients who had participated in Benke (2000) 6-month trial Of 26 completers: **Mean age (years) (SD):** Int: 64.0 (7.5) Cont: 69.0 (6.9) **Sex (male) n (%):** Int: 11 (76) Cont: 9 (75) **FEV_1% predicted (SD):** Int: 34.9 (7.1) Cont: 37.5 (6.9)	**TRAINING (**n = 23) **Conventional therapy:** usual medication and 30 minutes daily breathing exercises **10-day hospital based training** including daily 6-minute treadmill and 5 self-controlled walking sessions **18-month home-based training programme;** three times a day for 15 minutes based on 125% of 6-MWD for 3-months and then advised to continue regular exercise Diaries of exercise 2-weekly visits for 3 months then monthly telephone calls for 3 months	**CONTROL** (n = 23) **Conventional therapy:** usual medication and 30 minutes daily breathing exercises No exercise training instructions in hospital or home No visits, but did receive monthly phone calls	**QoL** – CRQ (6, 12, 18 months) **Exercise capacity** – 6 MWD treadmill (6, 12, 18 months) **Dyspnoea** – Borg Scale at rest. Baseline /Transitional Dyspnoea Index (6, 12, 18 months) **Lung function** FEV_1, VC, TLC, ITGV, DLco, RV (6, 12, 18 months) **Hospital admissions** (6 month periods for 18 months) **Activity data** (training group only) (each month) **Inhaler & medications use**
Lee 2002[20] Hong Kong Cluster RCT	Inclusion: COPD; aged 65+ years; present residents of participating nursing home; at least 1 admission in previous 6 months Exclusion:	N = 45 nursing homes N =112 patients Patients recruited from the geriatric units of two hospitals with main diagnosis of COPD and soon to be discharged	**CARE SUPPORT TO NURSING HOME** (n = 48 completers) Support to nursing home staff provided by community nurses **Visit 1:** within 1 week of discharge. -Assessment of health status	**CONTROL** (n = 41 completers) Usual community nursing eg wound /catheter management	**Hospitalisation** (6 months) COPD re-admissions COPD hospital days Days to first re-admission **ED Visits** (6 months) COPD ED visits Days to first ED visit

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
	Terminal illness (not expected to survive >6 mths) Communication problems	Of 89 completers: **Mean (SD) age (years):** Int: 81.08±6.03 Cont: 79.68±6.53 **Sex (male) n (%):** Int: 27 (56.3) Cont: 20 (48.8) **Mean FEV_1% predicted (SD):** Int: 30.64 (10.12) Cont: 31.08 (13.25) **Severity n (%):** **Mild (≥50%)** Int: 3 (6.3%) Cont: 4 (9.8%) **Moderate (35-49%)** Int: 12 (25.0%) Cont: 11 (26.8%) **Severe (<35%)** Int: 33 (68.8%) Cont: 26 (63.4%)	-Plans individualised care -Educates nursing home staff -Provides written information sheets -Teaches patients appropriate care procedures (e.g. drug and diet regime, breathing exercises, use of inhalers) **Weekly visits** by same community nurse for one month to reinforce recommended care and education. **Monthly visits** by same nurse to provide on-going support and education to the staff. Between visits and as necessary community nurse would additionally provide -advice via telephone -visit This may include advice on need for ED visit or admission. If re-admitted protocol and visits recommenced on discharge back to the home		**Functional status** (6 months) Barthel Index **Respiratory status** (6 months) FEV_1 % predicted **Psychological status** (6 months) GHQ –total and subscales **Patient satisfaction** (6 months) 13 item Likert scale. Not administered to control arm. **Nursing health staff satisfaction** (1 month) 11 item Likert scale. Not administered to control arm.

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
Egan 2002[26] Australia RCT + qualitative element (n=18)	Inclusion: COPD; 18 years or older; history of chronic bronchitis (with infection), emphysema, chronic obstruction, chronic asthma, or combination; admission to respiratory unit bed within 72 hours of hospital admission Exclusion: Cognitive function insufficient to complete questionnaire	N = 66 Patients admitted with COPD to a major private hospital. Recruited during admission. **Mean age (years):** Int: 67.8 Cont: 67.2 **Sex (male) n (%):** Int: 12 (36) Cont: 20 (60) **FEV_1% predicted:** Not reported Severe (FEV_1<35% predicted) Int: 19 (57.6%) Cont: 19 (57.6%) Mild/moderate (FEV_1 35-50% predicted) Int: 14 (42.4) Cont: 14 (42.4)	**CASE-MANAGEMENT** (n = 33) Nursing assessment and review-comprehensive – to identify physical, psychological, social, spiritual, resource needs. Standardised clinical pathway of care during hospital admission. Coordination between medical, nursing and allied health personnel by case- manager. Coordinated case management with patient and carer education on managing the disease, medication, rehabilitation, available community services and arranged discharge planning. Regular phone calls to patient and carer at 1 week and 6 weeks.	**USUAL CARE** (n = 33) Nursing assessment (not clear). Standardised clinical pathway of care during hospital admission. No contact with case manager, no case conferences and no post discharge follow up.	**Hospital re-admission** - (3 months) **QoL** – SGRQ and Subjective Well-being Scale (1 and 3 months) **Social support survey** – (1 and 3 months) **Anxiety and depression** – HADS (1 and 3 months) **Patient satisfaction –** qualitative semi structured interview with 18 participants (3 months)
Hermiz 2002[28] Australia RCT	Inclusion: COPD; 30-80 years; patients attending hospital emergency department or admitted with COPD Exclusion: Resided outside region; insufficient English skills; resident in nursing home; confused or demented	N = 177 Patients attending hospital emergency department or admitted with COPD. Not clear exactly when recruited but visit 1 occurred 1 week after discharge. **Mean age (years):** Int: 67.1 Cont: 66.7 **Sex (male) n (%):** Int: 41 (48.8) Cont: 43 (46.2) **FEV_1% predicted:** Not reported	**HOME VISITS** (n = 84) **Two home visits (community nurse)** **Visit 1:** within 1 week of discharge. -Assessment of health status and pulmonary function -Education (verbal and written) on disease - Advice on smoking cessation, management of ADL, energy conservation, exercise, medication, health maintenance, early recognition of signs that require medical intervention. - Care plan sent to GP - Referral to services/contact with GP if necessary **Visit 2:** (1 month post discharge) Progress review Patient encouraged to refer to education booklet for guidance.	**USUAL CARE** (n = 93) **Usual care (GP)**	**Mortality -** (3 months) **Readmissions or ED visits** (3 months) **GP consultations or nurse home visits** (3 months) • GP prescribed drugs • GP arranged follow up • GP provided patient with education • GP provided carer with education **QOL**- SGRQ (3 months) **Behaviour change** (3 months) Smoking habits Immunisations Knowledge/understanding Help seeking **Patient satisfaction** (3 months)

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
Dheda 2003[25] UK RCT	Inclusion: Diagnosis of COPD; first admission of COPD Exclusion: Another dominant medical condition; mandatory reason for hospital follow up e.g. suspected cancer; already under outpatient follow up; refused consent	N = 33 First admission of COPD Not clear when recruited but implies at discharge (data may be completers only – not clear): **Mean age (years) (SD):** Int: 68.4 (5.8) Cont: 71.3 (8.4) **Sex (male) n (%):** Not reported **Mean FEV_1% predicted (SD):** Int: 44.7 (21.8) Cont: 39 (11.9) Disease severity (BTS Guidelines) Int: 20% mild, 20% moderate, 60% severe Control: 20% mild, 27% moderate, 53% severe	**HOSPITAL OUTPATIENT FOLLOW-UP** (n = 15) **Visit to respiratory nurse and/or chest physician**: (n= 4+) over six month period (3, 6, 8, 12 or 16 weeks) - Review of inhaler technique and peak flow diary - Medication assessment -Smoking cessation advice -Advice about nutrition and exercise -Introduction to patient support group	**PRIMARY CARE FOLLOW-UP** (n = 18) **Visit primary care teams as required.**	**Hospital admissions** (6 months) **Exacerbations (2 or more)** (6 months) **QOL**- SGRQ, SF-36 (6 months) **Lung function** – FEV_1 **Oxygen saturation** **Pharmacological prescriptions -** oxygen, nebuliser, theophylline, bronchodilators
Hernandez 2003[29] Spain RCT	Inclusion: COPD exacerbation; absence of any criteria for imperative hospitalisation as stated by the British Thoracic Society Guidelines Exclusion: Not living in the area or admitted from a nursing home, lung cancer, and other advanced neoplasm, extremely poor social conditions, severe neurological or cardiac comorbidities, illiteracy, no phone.	N = 222 Patients with COPD exacerbation. Recruited at emergency room of two tertiary hospitals. **Mean age (years) (SD):** Int: 71 (9.9) Cont: 70.5 (9.4) **Sex (male) %:** Int: 96.7 Cont: 97 **Mean (SD) FEV_1 litres (% predicted):** n/a at baseline	**HOME-BASED HOSPITALISATION** (n = 121) Assessed by specialised team in ER. **At discharge** Standard pharmacological treatment was used in accordance with national guidelines. Non-pharmacological treatment 2-hour including -education on knowledge of disease, -adherence to treatment, recognition/prevention of triggers of exacerbations -selection of appropriate equipment, -smoking cessation, -patient empowerment with activities of daily living, breathing exercises, exercises, -nutrition recommendations, -socialisation and changes in lifestyle. Home visit (1h) by nurse within 24 hours of	**USUAL CARE** (n = 101) Standard assessment by physician in ER Standard pharmacological treatment. No post discharge follow up.	**Mortality -** (2 months) **Readmissions or ED visits** (2 months) **Hospitalisation** - hospital days (2 months) **QoL** – SGRQ and Short form SF-12 Scale (2 months) **Lung function -** FEV_1, FVC (2 months) **Patient satisfaction -** (2 months) **Disease knowledge-** (2 months) **Inhaler technique-** (2 months) **Medication prescriptions and home rehabilitation-** (2 months)

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
			discharge. Duration of home hospitalisation determined by nurse. Up to 5 visits permitted during 8-week period, but no limit of phone contact. Action plan revisited and education reinforced. Failure was based on referral to emergency room or >5 nurse visits required.		**Costs-** (2 months)
Kwok 2004[30] Hong Kong RCT	Inclusion: Chronic lung disease (89% had COPD); 60+ years; having at least one hospital admission for CLD in the 6 months before index admission Exclusion: Resided outside region; communication difficulties; no family caregiver; resident in institutional care; terminal disease with life expectancy <6 months	N = 157 Hospitalised patients with principal diagnosis of chronic lung disease recruited from medical wards of two hospitals within 3 days of admission <u>Of 149 completers:</u> **Mean age (years) (SD):** Int: 75.3±7 Control: 74.2±5.7 **Sex (male) n (%):** Int: 56 (73) Cont: 55 (69) **Mean FEV_1** not reported	**INTERVENTION** (n = 77) **A community nurse** **Visit 1:** before discharge. -provide health counselling (drug compliance, inhaler technique, dietary advice as required) -Encourage to contact nurse when they developed medical problems via telephone hotline **Visit 2:** (7 days post discharge home visit) -Review condition -Give health counselling- reinforce drug and diet regime, provide advice on modifications of home environment to avoid irritants or physical danger, encourage physical exercise -Provide psychosocial support -Arrange social and health services -encourage use of hotline when symptoms arose Weekly home visits for 4 weeks and monthly thereafter for up to 6 months to monitor changes in physical condition, reinforce health counselling, and encourage hotline use if necessary.	**USUAL CARE** (n = 80) **Routine follow up by same medical teams.** Some patients received home visit if referred	**Hospital readmissions** (4 weeks, 6 months) **Period of hospitalisation** (bed-days) **ED visits** (6 months) **Psychosocial scores**- London Handicap Scale, GHQ score, Multidimensional Health Locus of Control Scales (6 months) **Exercise capacity –** 6-minute walking test (6 months) **Mortality** (6 months) **Care burden** (6 months) – Cost of Care Index
Wong 2005[31] Hong Kong RCT	Inclusion: Diagnosis of COPD; alert and orientated; contactable by phone Exclusion: Discharged to an old-age home; serious alcohol or drug abuse or psychiatric disease; diagnosed with IHD, musculoskeletal disorders or	N = 60 At discharge from medical department of acute care hospital **Mean age (years) (SD):** 73.6 (7.8) **Sex (male) n (%):**	**TELEPHONE FOLLOW-UP** (n = 30) **Structured, individualised educational and supportive telephone follow-up programme delivered by a respiratory nurse** Based on Bandura's theory of self-efficacy -Goal setting and patient education including: -Management of dyspnoea and energy saving techniques -Verbal persuasion (Medication adherence)	**ROUTINE CARE** (n = 30) **Usual care**	**Health service utilisation –** ED, outpatient, admissions (1, 3 months) **Self- efficacy** – Modified Chinese COPD Self-Efficacy Scale (CSES) for dyspnoea (Day 35)

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
	other disabling diseases which may limit rehabilitation; dying and/or unable to provide informed consent	47 (78.3) **FEV_1% predicted:** not reported	-Stress management techniques (relaxation, breathing techniques) Two telephone contacts on days 3-7 and days 14-20 with each call lasting 10-20 minutes		
Casas 2006[24] Spain RCT	Inclusion: COPD; hospital admission >48hours due exacerbation Exclusion: Not living in healthcare area; severe co-morbid conditions; logistical limitations due to poor social conditions e.g. no telephone access; admitted to nursing home	N=155 (N=113 Barcelona; n=42 Leuven) Recruited immediately after hospital discharge from 2 tertiary hospitals (Barcelona, Leuven). **Mean age (years) (SD):** Int: 70 (9) Cont: 72 (9) **Sex (male) n (%):** Int: 50 (77) Cont: 79 (78) **Mean FEV_1% predicted (SD):** Int: 43 (20) Cont: 41 (15)	**INTEGRATED CARE** (n = 65) **4-part integrated care:** 1) Comprehensive assessment of patient 2) Education session on self-management (2 hour) (disease knowledge, smoking cessation, promotion of physical activity, nutritional advice, instructions on other non-pharmacological treatment, medication administration, teaching self-management strategies to cope with future exacerbation) 3) Individually tailored care plan Barcelona – 1x joint visit by specialised nurse and primary care team Leuven – regular home GP visits using standard guidelines Weekly phone calls for 1 month. Phone calls at 3 months and 9 months with no education. 4) Access to the specialist nurse at the hospital through ICT platform including web-based call-centre. Could trigger a visit. NB some inconsistency with Garcia-Aymerich	**USUAL CARE** (n = 90) **Usual care:** Hospital physician decided on outpatient control regime. Standard protocol for pharmacological prescription and in-hospital treatment. Physician visit every 6 months	**Mortality**- (6, 12 months) **Hospital admissions** - (12 months) **Healthcare resource utilisation –** (12 months) – includes GP consultations
Garcia-Aymerich 2007[27] Spain (Subset of Casas et al)[24] RCT	Inclusion: COPD; admitted because of an episode of exacerbation requiring hospitalisation for more than 48h Exclusion: Not living in the healthcare area or living in a nursing home; lung cancer or other advanced malignancies;	N = 113 Recruited immediately after discharge from one tertiary hospital <u>Of 62 completers:</u> **Mean age (years) (SD):** Int: 72 (10) Cont: 73 (9)	**INTEGRATED CARE** (n = 44) **4-part integrated care:** 1) Comprehensive assessment of patient 2) Education session on self-management (2 hour) (disease knowledge, smoking cessation, promotion of physical activity, nutritional advice, instructions on other non-pharmacological treatment, medication	**USUAL CARE** (n = 69) **Usual care**	**Mortality -** (6 and 12 months) **QoL** – SGRQ, EQ-5D (6 and 12 months) **Dyspnoea** – Medical Research Council (6 and 12 months) **Treatment adherence and inhaler technique** – Medication Adherence Scale, Inhaler Adherence Scale and observation. Medication use (6 and 12 months)

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
	logistic limitations due to poor social conditions, illiteracy or no phone access; extremely severe neurological or cardiovascular co-morbidities	**Sex (male) n (%):** Int: 16 (80.0) Cont: 37 (90) **FEV_1% predicted:** Not reported Described as "severe"	administration, teaching self-management strategies to cope with future exacerbation) Written information provided and education on skills to identify deterioration and advised/taught to call call-cente if signs and symptoms indicative of clinical deterioration; call to specialist nurse generated advice or home visit as necessary 3) Individually tailored care plan (devised by nurse case manager and primary care team). Joint visit made within 72 hours of discharge re. Co-morbidities and social support. Weekly phone calls 1 month, one further call at months 3 and 9 to reinforce SM 4) Access to the specialist nurse at the hospital through ICT platform including web-based call-centre.		**Medications and oxygen therapy -** (6 and 12 months) **Lung function -** FEV_1, FVC, PaO_2, $PaCO_2$ (6 and 12 months) **Vaccination uptake (influenza, pneumococcal)** – (6 and 12 months) **Patient satisfaction** - (6 and 12 months) **Smoking** - (6 and 12 months) **Exercise**– (6 and 12 months) **Knowledge** – about disease and identification/treatment of exacerbations **BMI**
Bucknall 2012[23] UK RCT	Inclusion: COPD Patients admitted to hospital with acute exacerbation; FEV1<70% predicted and FEV1/FVC<0.7 Exclusion: History of asthma or left ventricular failure; active malignant disease; evidence of confusion or poor memory	N = 464 During or shortly after hospital admission. Six acute hospitals and contributing hospitals with eligible patients. Augmented by review of patients attending pulmonary rehabilitation and checking for evidence of hospital admission **Mean age (years) (SD):** 69.1 (9.3) **Sex (male) n (%):** 170 (37%) **Mean FEV_1% predicted (SD):** 40.5 (13.6)	**SUPPORTED SELF-MANAGEMENT** (n = 232) **Long term treatment optimised**, inhaler techniques checked, offered appropriate smoking cessation advice and pulmonary rehabilitation **Symptom daily diaries** **Supported self-management by nurses** trained in 'self-regulation theory'; this aims to empower patients to manage COPD by improved knowledge and understanding of the disease and skills to monitor symptoms and carry out appropriate actions, such as altering treatment early in early stages of an exacerbation. **Self-management material** based on 'Living Well with COPD programme' **Content included;** -Disease knowledge -Events that led to hospital admission -Nature of exacerbations -Recognising early signs of an exacerbation -Managing future exacerbations and monitoring	**USUAL CARE** (n = 232) **Long term treatment optimised**, inhaler techniques checked, offered appropriate smoking cessation advice and pulmonary rehabilitation **Symptom daily diaries** **Usual care** Continuing management by GP, hospital clinicians or both	**Mortality** (12 months) **Hospital admission** with exacerbation of COPD (12 months) **Successful self-management (initiating treatment during exacerbation)** (12 months) **QoL** – SGRQ, EQ-5D (6 and 12 months) **Anxiety/depression** – Hospital Anxiety and Depression Scale (6 and 12 months) **Self-efficacy** – COPD Self Efficacy Scale (6 and 12 months)

Author year Country Study design	Population Inclusion Criteria	Participants	INTERVENTION (n=)	COMPARATOR (n=)	OUTCOMES
			signs and symptoms -How drugs work -Reinforcement of self management behaviours - Self-management plan Four, 40 minute individual training sessions delivered at home every 2 weeks for 2 months + home visits at least every 6 weeks thereafter for 10 months		

Notes and abbreviations:

Int = Intervention
Cont = Control
RCT = randomised controlled trial
SD = standard deviation
FEV_1 = forced expiratory volume in one second
FVC = forced vital capacity
MRC = Medical Research Council
CRQ = chronic respiratory questionnaire
6MWD = 6 minute walking distance
ED = emergency department
QoL = quality of life
GHQ = General Health Questionnaire
n/a = not available
IHD = ischaemic heart disease
SGRQ = St George's respiratory questionnaire
SF-36 = Short Form 36 questionnaire
BTS = British Thoracic Society
EQ-5D = EuroQol – 5D questionnaire
BMI = Body mass index

Suppl Table 3: Risk of bias assessment of included trials including Behnke et al exercise trial

a Behnke 2000[21] and Behnke 2003[22] refer to the same trial; b Casas and Garcia-Aymerich refer to sub-groups of the same trial

Sources of bias	**Behnke** 2000 [21, a]	**Behnke** 2003 [22, a]	**Egan** 2002[26]	**Hermiz** 2002[28]	**Lee** 2002[20]	**Hernandez** 2003[29]	**Dheda** 2003[25]	**Kwok** 2004[30]	**Wong** 2005[31]	**Casas** 2006[24, b]	**Garcia-Aymerich** 2007[27, b]	**Bucknall** 2012[23]
1. Sequence generation	Unclear:	Unclear:	Low:	Unclear:	Unclear:	Low:	Unclear:	Low:	Low:	Low	Low	Low:
2. Allocation concealment	Unclear:	Unclear:	Unclear:	Unclear:	Unclear:	Unclear	Unclear:	Unclear:	Unclear:	Unclear	Unclear	Low:
3. Blinding of outcomes												
a. Hospital admissions	n/a	Low	Low	Low	Low	Low	Low	Low	Low	Low	n/a	Low
b. ED visits	n/a	n/a	n/a	n/a	Low	Low	n/a	Low	Low	n/a	n/a	n/a
c. Primary care consultations	n/a	n/a	n/a	Low	n/a	n/a	n/a	n/a	n/a	Low	n/a	n/a
d. Mortality	Low	n/a	n/a	Low	n/a	Low	n/a	Low	n/a	Low	Low	Low
e. Patient-reported outcomes	**HRQL:** High **Dyspnoea:** High	**HRQL:** High	**HRQL:** High **Anxiety & depression:** High	**HRQL:** High **Behaviour change:** High	**Psychological status:** High	**HRQL:** High	**HRQL:** High	**GHQ score:** High	**Self-efficacy:** High	n/a	**HRQL:** High **Behaviour change:** High **Knowledge:** High	**HRQL:** High **Anxiety & depression:** High **Self-efficacy** High
e. Other outcomes of interest	**Lung function:** Unclear **Exercise capacity:** Low	**Lung function:** Unclear **Exercise capacity:** Low	n/a	n/a	**Lung function:** unclear	**Lung function:** unclear	**Lung function:** Unclear **Exacerbations:** unclear	**Exercise capacity:** Low	n/a	n/a	**Lung function** Unclear	n/a
4. Incomplete outcome data												
a. Hospital admissions	n/a	High	Unclear	Low	High	Unclear	Unclear	Low	Low	Low	n/a	Low

Sources of bias	Behnke 2000 [21, a]	Behnke 2003 [22, a]	Egan 2002[26]	Hermiz 2002[28]	Lee 2002[20]	Hernandez 2003[29]	Dheda 2003[25]	Kwok 2004[30]	Wong 2005[31]	Casas 2006[24, b]	Garcia-Aymerich 2007[27, b]	Bucknall 2012[23]
b. ED visits	n/a	n/a	n/a	n/a	High	Unclear	n/a	Low	Low	n/a	n/a	n/a
c. Primary care consultations	n/a	n/a	n/a	Low	n/a	n/a	n/a	n/a	Low	Low:	n/a	n/a
d. Mortality	Low	n/a	n/a	Low	n/a	Low	n/a	Low	n/a	Low	Low	Low
e. Other	High	High	High	Low	n/a	Unclear	High	High	Low	n/a	High:	High
5. Selective outcome reporting	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	High	Unclear	Unclear
Other comments	Methodology of lung function measurement not given Table of characteristics only provided on completers	Baseline differences for age, CRQ, LF and 6MWD Table of characteristics only provided on completers	Clear imbalance of gender at baseline, and possibly other characteristics Outcome data very difficult to interpret as change provided between interim time-points only		Analysis does not take cluster design into account. Methodology of FEV_1 measurement not given.	Baseline differences with respect to smokers, oxygen therapy although comparable with respect to disease severity (FEV_1 % predicted) Short follow up period. Outcome assessment not clear; % not always correct Lung function analyses not adjusted for baseline	Very small study Methods of outcome assessment not described Numerical data not available for Lung function Rather limited information provided throughout 1 patient excluded from analysis due to visiting GP (not ITT) No table of characteristics Confusion over SEM or SD	3 subjects in control were undergoing pulmonary rehabilitation.	Change in sample size calculation External validity of Chinese self efficacy scale Gender may not be very well-balanced across arms	Differences in text and Table 2 for differences in rate of admissions Not well balanced on previous hospitalisations, and receipt of influenza vaccination	No description of lung function test methods Intervention arm seemed to have higher number of admissions in the previous year and possibly worse SGRQ score	

Items taken from Cochrane Collaboration Risk of Bias tool for RCTs[17]

HRQL = health-related quality of life n/a=not applicable CRQ – chronic respiratory questionnaire LF = lung function 6MWD = 6 minute walking distance

FEV_1= forced expiratory volume in 1 second ITT = intention to treat SEM = standard error of the mean SD = standard deviation

SGRQ = St George's respiratory questionnaire

Fig S1 Effect of self-management support on re-admission rates

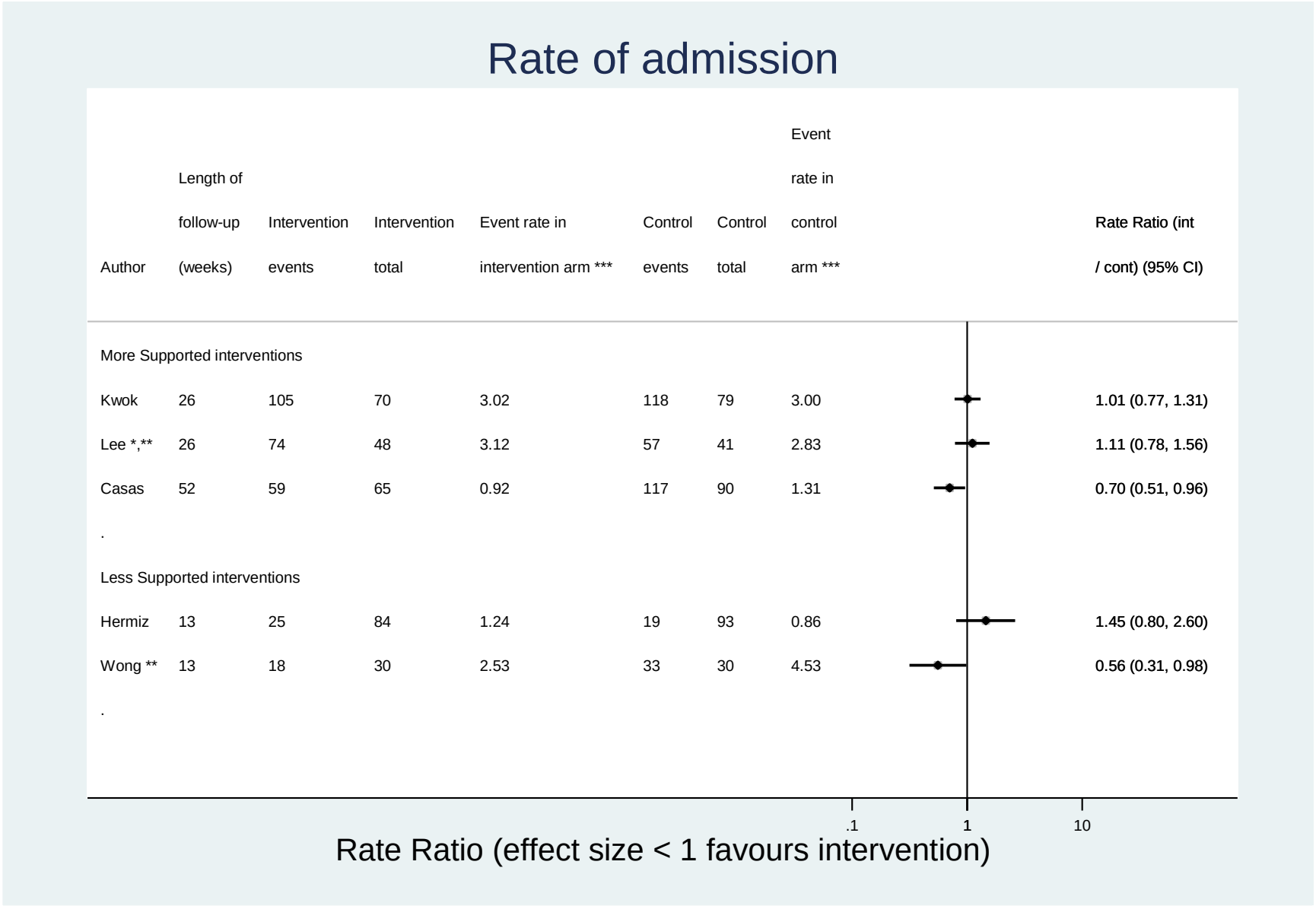

Fig S2 Effect of self-management support on ED visits

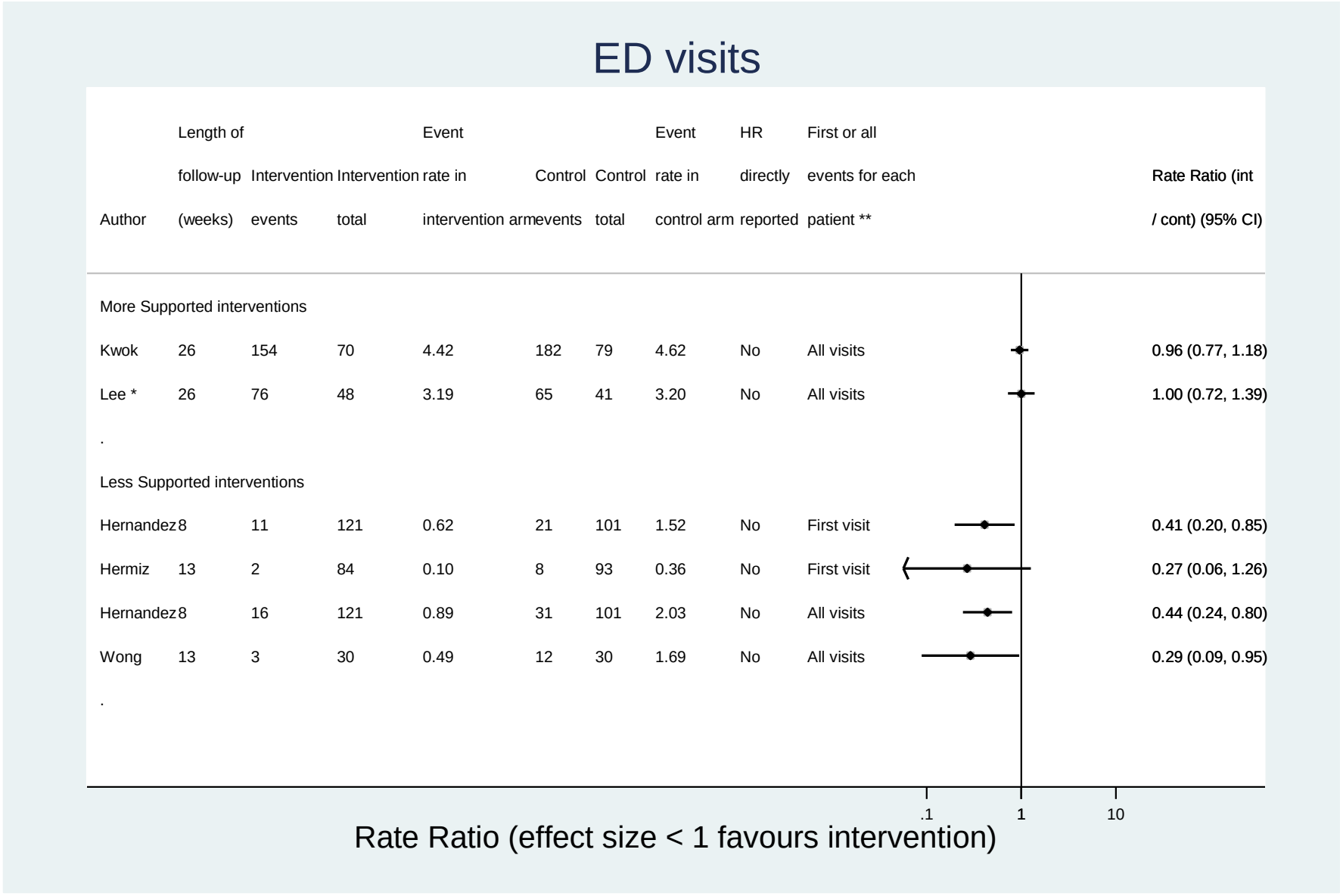

Fig S3 Effect of self-management support on health-related quality of life – EQ-5D score