C- Cardiac rehabilitation

Study	**Cowie 2014[55]**			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CCA **Study design:** cost analysis conducted alongside a RCT	**Population:** Frail elderly patients with length of stay exceeding 6 days who were referred for geriatric rehabilitation. **Cohort settings: (n=104)**	**Total costs:** Intervention 1: £111,774 Intervention 2: £118,980 Incremental (2−1): £7,206	NR	**ICER (Intervention 2 versus Intervention 1):** NA

Study	Cowie 2014[55]			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Approach to analysis: Within-trial analysis of costs. **Perspective:** UK NHS **Time horizon/Follow-up:** 5.16 years (mean duration from study completion date – November 2012) **Discounting:** Costs: n/a; Outcomes: n/a	Mean age: Intervention 1: 84 years, Intervention 2: 83.9 years Male: Intervention 1: 33.3%, Intervention 2: 31.8% **Intervention 1:** Hospital-based rehabilitation services. 1 hour aerobic based exercise session. Exercise session was a physiotherapist led class. **Intervention 2:** Community-based rehabilitation services. 1 hour aerobic based exercise session- DVD and booklet The session started with a 15 min warm-up and ended with a 15 min cool-down.	(95% CI: NR; p=0.011) **Currency & cost year:** 2013 UK pounds **Cost components incorporated:** Rehabilitation nurse, rehabilitation physio, DVD, heart rate monitors, cost of congestive heart failure admission, cardiology admission, medical admission, orthopaedic admission, renal admission.		**Analysis of uncertainty:** Increasing the cost of hospital training by 100% still resulted in hospital training being cost saving.
Data sources				
Health outcomes: NR. **Quality-of-life weights:** NA. **Cost sources:** Agenda for change pay scales, Information Service Division (ISD) 2011/12 references				
Comments				
Source of funding: NR. **Applicability and limitations:** Only costs were measured, no details on mortality or quality of life. Costs were measured over 5 years but not discounted. Only looks at impact on hospital admission cots, no primary care or outpatient costs were considered in the analysis.				
Overall applicability[(a)]**:** Partially applicable **Overall quality**[(b)]**:** Potentially serious limitations				

Abbreviations: CCA: cost–consequence analysis; 95% CI: 95% confidence interval; ICER: incremental cost-effectiveness ratio; NR: not reported; QALYs: quality-adjusted life years.

(a) Directly applicable/Partially applicable/Not applicable.

(b) Minor limitations/Potentially serious limitations/Very serious limitations.

Study	Jolly 2009, Jolly 2007[130,131]			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CUA (health outcome: EQ-5D)	Population: Patients referred following an MI, PTCA or CABG within	Total costs (mean per patient):	EQ-5D visual analogue scale:	Intervention 1 dominates.

Study	Jolly 2009, Jolly 2007[130,131]			
Study design: RCT Approach to analysis: Within-trial analyses of individual patient level resource use and outcome data on intention-to-treat basis. Perspective: UK NHS and societal Follow-up: 24 months Discounting: Costs: NR; Outcomes: NR.	the previous 12 weeks who were not considered to be high risk for a home-based exercise programme. Cohort: (n=525) Mean start age: Intervention 1: 61.8 Intervention 2: 60.3 Male: Intervention 1: 76% Intervention 2: 77.2% Intervention 1: (n=262) 9-12 week hospital-based exercise training Intervention 2: (n=263) 12 week home-based exercise training	NHS perspective: Intervention 1: £157 Intervention 2: £198 Incremental (2−1): £41 (95% CI: NR; p<0.05) Societal perspective: Intervention 1: £181 Intervention 2: £198 Incremental (2−1): £17 (95% CI: NR; p>0.05) Currency & cost year: 2003 UK pounds Cost components incorporated: Nurse time (visits, travel and telephone calls), Heart Manual (including training), Rehabilitation sessions, Patient travel-related (societal perspective)	Intervention 1: 0.753 Intervention 2: 0.731 Incremental (2−1): -0.022 (95% CI: -0.072 to 0.028; p=NR) Change in SWT (mean per patient): Intervention 1: 406.8 Intervention 2: 391.3 Incremental (2−1): -15.52 (95% CI: -48.18 to 17.13; p=NR)	Analysis of uncertainty: Missing values: Sensitivity analysis was conducted to assess the impact of missing values for outcomes at 12 month follow-up. Regression-based models were used to generate and impute predicted outcome values. Interpretation of the results did not change. Home-based Duration of visits was limited to a maximum of 3, up to 30 minutes visits. Reduced the cost but the interpretation of results did not change. Hospital-based Allowed an additional 1 hour for 4 staff in preparing and clearing each rehabilitation session. Increased the cost but the interpretation of results did not change.
Data sources				
Health outcomes: Cardiac risk factors and patient reported outcomes were taken at baseline, 6 and 12 months follow-up. Resource use data were collected from cardiac rehabilitation staff and participants. Hospital records were used to check attendance. **Quality-of-life weights:** EQ-5D visual analogue scale values rather than tariff utilities were used. **Cost sources**: Staff costs from PSSRU unit costs of health and social care 2003 [171]. Staff travel costs from the NHS mileage rate. Home equipment and training costs taken from The Heart Manual.				
Comments				
Source of funding: UK Department of Health through its Health Technology Assessment Programme. **Applicability and limitations:** RCT-based analysis, so from 1 study				

Study	Jolly 2009, Jolly 2007[130,131]
by definition therefore not reflecting all evidence in area. Did not include survival into QoL measure to obtain QALY.	
Overall applicability[Error! Reference source not found.]**:** Directly applicable	**Overall quality**[Error! Reference source not found.]**:** Potentially serious limitations

Abbreviations: CABG: coronary artery bypass graft; 95% CI: 95% confidence interval; CUA: cost–utility analysis; da: deterministic analysis; DBP: diastolic blood pressure; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death);HADS: hospital anxiety and depression scale; ICER: incremental cost-effectiveness ratio; MI: myocardial infarction; NR: not reported; pa: probabilistic analysis; PTCA: percutaneous transluminal coronary angioplasty; PSSRU: personal social services research unit; QALYs: quality-adjusted life years; SBP: systolic blood pressure; SWT: shuttle walking test.

(a) Directly applicable/Partially applicable/Not applicable.

(b) Minor limitations/Potentially serious limitations/Very serious limitations.

Study	Taylor 2007[238]			
Study details	**Population & interventions**	**Costs**	**Health outcomes**	**Cost effectiveness**
Economic analysis: CUA (health outcome: QALYs) Study design: RCT Approach to analysis: Within-trial analyses of individual patient level resource use and outcome data on intention-to-treat basis. Perspective: UK NHS and societal Time horizon/Follow-up: 9 months Discounting: Costs: n/a; Outcomes: n/a	Population: Patients with an uncomplicated acute myocardial infarction without major comorbidity. Cohort settings: (n=104) Start age: NR Male: NR Intervention 1: (n=44) Hospital-based rehabilitation for 8-10 weeks Intervention 2: (n=60) Home-based rehabilitation; nurse facilitated, self-help package of 6 weeks' duration	Total costs (mean per patient): Intervention 1: £3,142 Intervention 2: £3,189 Incremental (2−1): £47 (95% CI: -1,103 to 1,191; p=0.894) Currency & cost year: 2003 UK pounds Cost components incorporated: Staff costs, equipment, drugs, diagnostic tests, hospital readmission, revascularization	QALYs (mean per patient): Intervention 1: 0.81 Intervention 2: 0.74 Incremental (2−1): -0.06 (95% CI: -0.15 to 0.02; p=0.156)	Intervention 1 dominates. Analysis of uncertainty: Study looked at individual patient simulations plotted onto a cost-effectiveness plane with points in all 4 quadrants. Ranged from a small QALY gain and lower cost in favour of hospital to a small QALY gain and lower cost in favour of home. Sensitivity analyses did not reveal a significant difference in the cost-effectiveness decision. However, costs between groups appeared to be sensitive to the costing approach.
Data sources				
Health outcomes: Patient completed EQ-5D at baseline, 3 and 9 months. **Quality-of-life weights:** EQ-5D UK tariff. **Cost sources:** Staff costs from PSSRU unit costs of health and social care 2003. [171] Diagnostic tests, hospital readmission and revascularization from NHS reference costs 2003 and National Tariff 2004. Patient costs from				

Study	Taylor 2007[238]
trial data.	
Comments	
Source of funding: NHS Executive South West (Research and Development) **Applicability and limitations:** RCT-based analysis, so from 1 study by definition therefore not reflecting all evidence in area. Length of follow-up may not be deemed long enough. Further sensitivity analysis for all assumptions could be conducted. Outcomes had high confidence intervals around incremental values.	
Overall applicability[(b)]: Directly applicable **Overall quality[(c)]:** Minor limitations	

Abbreviations: 95% CI: 95% confidence interval; CUA: cost–utility analysis; EQ-5D: Euroqol 5 dimensions (scale: 0.0 [death] to 1.0 [full health], negative values mean worse than death); ICER: incremental cost-effectiveness ratio; NR: not reported; QALYs: quality-adjusted life years.

(a) Directly applicable/Partially applicable/Not applicable.

(b) Minor limitations/Potentially serious limitations/Very serious limitations.