

Supplementary table 1. Specialty and type of operation

Specialty	Operation	Supervised programme (n=54)	Supervised programme and completed exit assessments (n=27)
Vascular	EVAR	14	6
	Open AAA repair	5	5
	AAA repair (unspecified)	1	0
	Arterial bypass graft	3	1
Orthopaedics	Total Knee Replacement	15	8
	Total Hip Replacement	5	2
Upper GI	Oesophagectomy	5	3
	Gastrectomy	1	0
Urology	Cystectomy	3	1
	Cystectomy/Iliostomy	1	0
Colorectal	Hartmann's	1	1

AAA, abdominal aortic aneurysm; EVAR, endovascular aneurysm repair; GI, gastrointestinal

Supplementary table 2. Costs of the supervised sessions and the whole intervention

Description	n	Number of supervised sessions/participant	Cost of all supervised sessions/participant	Cost of whole intervention/participant	Weekly cost of whole intervention/participant
Total	43	9.5 (8.6)	£312.65 (281.01)	£404.86 (285)	£52.35 (27.30)
By Speciality					
Colorectal	1	11	£360.69	£454.75	£56.84
Orthopaedics	14	11.9 (9.7)	£391.14 (318.29)	£475.92 (324.59)	£48.47 (29.71)
Upper GI	6	4.3 (4.3)	£142.09 (141.67)	£245.29 (156.08)	£45.11 (24.64)
Urology	4	4 (5.5)	£131.16 (179.60)	£203.22 (179.60)	£29.39 (33.41)
Vascular	18	10.6 (8.7)	£346.12 (285.68)	£444.81 (287.58)	£57.74 (27.27)

Data are mean (SD) unless stated.

Supplementary table 3. Expanded description of the exercise component of the PREP-WELL prehabilitation service

Why?	Structured exercise training prior to surgery has the potential to improve physical function and cardiometabolic health, leading to better post-surgical recovery.
What materials?	Aerobic exercise: cycle ergometers, treadmills, cross trainers, rowing ergometers, platforms for stepping Resistance exercise: TheraBands elastic bands of varying thickness, dumbbells, fixed resistance machines Inspiratory muscle training: POWERbreathe Medic Classic Other: heart rate monitors, pedometers, information leaflets
What procedures?	Participants were invited to attend two 90-minute, supervised, group-based exercise sessions per week for at least 6 weeks preoperatively. Home-based exercise training was also encouraged on most days. Individuals with an increased risk of post-operative pulmonary complications (identified using the ARISCAT tool) also performed inspiratory muscle training. Typical format of supervised exercise sessions: - Warm up (10 minutes) - Group-based circuit training involving aerobic and resistance exercises (30-50 minutes) - Cool down / flexibility exercises (10 minutes) - Social time (20-30 minutes) Exercises were selected and tailored to suit individual capacity for physical function and their lifestyle. The intensity of exercise was guided by the use of Borg's CR10 scale, with participants generally encouraged to exercise at an exertion level of 2-4 (somewhat hard). A maximum patient-to-instructor ratio of 10:2 was used to ensure adequate supervision. Inspiratory muscle training (IMT): Participants were encouraged to complete two sessions of IMT per day for 5-7 days per week. Each session comprised 36 breaths at 30-50% maximal inspiratory pressure. The 36 breaths were split into 6 sets of 6 breaths, with a decreasing recovery time between each set (60 s, 45 s, 30 s, 15 s, 5 s). The resistance on the IMT device was adjusted to maintain a 'hard' level of exertion in each session. Home-based exercise training: Participants were given a pedometer and encouraged to accumulate at least 7500 steps per day, ideally including at least 30 minutes of brisk walking. People who did not like walking, or who had difficulty walking, were able to choose a different mode of exercise. The target intensity was moderate-to-hard, which was self-regulated using the Borg CR10 RPE scale. Participants were also given a set of three TheraBands of varying resistance and a training plan lasting 20-30 minutes. The plan included a combination of TheraBand and body-weight exercises targeting all major muscle groups, with each exercise performed for 1-3 sets of 10-15 repetitions to the point of moderate muscle fatigue.

Who provided?	The exercise sessions were supervised by the project manager who had a background in cardiac rehabilitation and two members of the Public Health South Tees Health Development delivery team who were trained and experienced in delivering exercise therapy to clinical populations.
Where?	Supervised sessions were held at The Live Well Centre, Middlesbrough (http://www.thelivewellcentre.co.uk/)
Fidelity monitoring?	For supervised sessions, attendance registers were maintained and heart rate and perceived exertion ratings recorded. For home-based sessions, participants were asked to maintain an exercise diary.

Supplementary figure 1. Schematic of prehabilitation service improvement

