

Supplementary File

Table S1. Theories of Change Glasgow Deep End Links Worker Programme

Resources	Activities	Short term outcomes	Medium term outcomes	Long term outcomes
Practice Development Fund (mainly spend on staff time to create enhanced systems)	<p>Patient level</p> <ul style="list-style-type: none"> • One-to-one working with patients, mainly by CLPs • Recommend, signpost, refer to, and support patient to make use of, community resources. • Frequency and duration of meetings not specified (individualised to patient need). 	<p>Patient level</p> <ul style="list-style-type: none"> • Improved ability to use available skills, information and support 	<p>Patient level</p> <ul style="list-style-type: none"> • Increased ability to self-manage health conditions and navigate systems. • Improved wellbeing and sense of being valued as a 'whole person'. • Improve relationships with professional 	<p>Patient level</p> <p>More people supported to live well with good quality of life</p>
Community Links Practitioner	<p>Practice level</p> <ul style="list-style-type: none"> • Shared learning and awareness of community resources available for patients. • Practice specific referral systems between general practitioners, practice nurses and community links practitioners • Redeployment of staff to support 'links' approach 	<p>Practice level</p> <ul style="list-style-type: none"> • Practice staff have improved understanding of social/personal context of illness • Practice staff have improved awareness of range of resources available to patients in a local area 	<p>Practice level</p> <ul style="list-style-type: none"> • Practice staff have skills in identifying and supporting those experiencing barriers to accessing resources. • Practice staff have sufficient time to listen and advice patients effectively 	<p>Health services addressing health Inequalities</p>
Programme clinical and management support	<p>Community level</p> <ul style="list-style-type: none"> • Activities to build relationships between practice and local community organisations. • Developing referral pathways. • Events to consolidate enable shared learning between practice and community organisations. 	<p>Community level</p> <ul style="list-style-type: none"> • Stronger practice-community organisation relationships • Established cross-sectoral referral pathways 	<p>Community level</p> <ul style="list-style-type: none"> • Creation and sustaining of a more community-orientated practice identity. • Practice seen as a 'community hub'. 	

Figure S1(a). Achieved Intervention Practice Study Patient Numerator

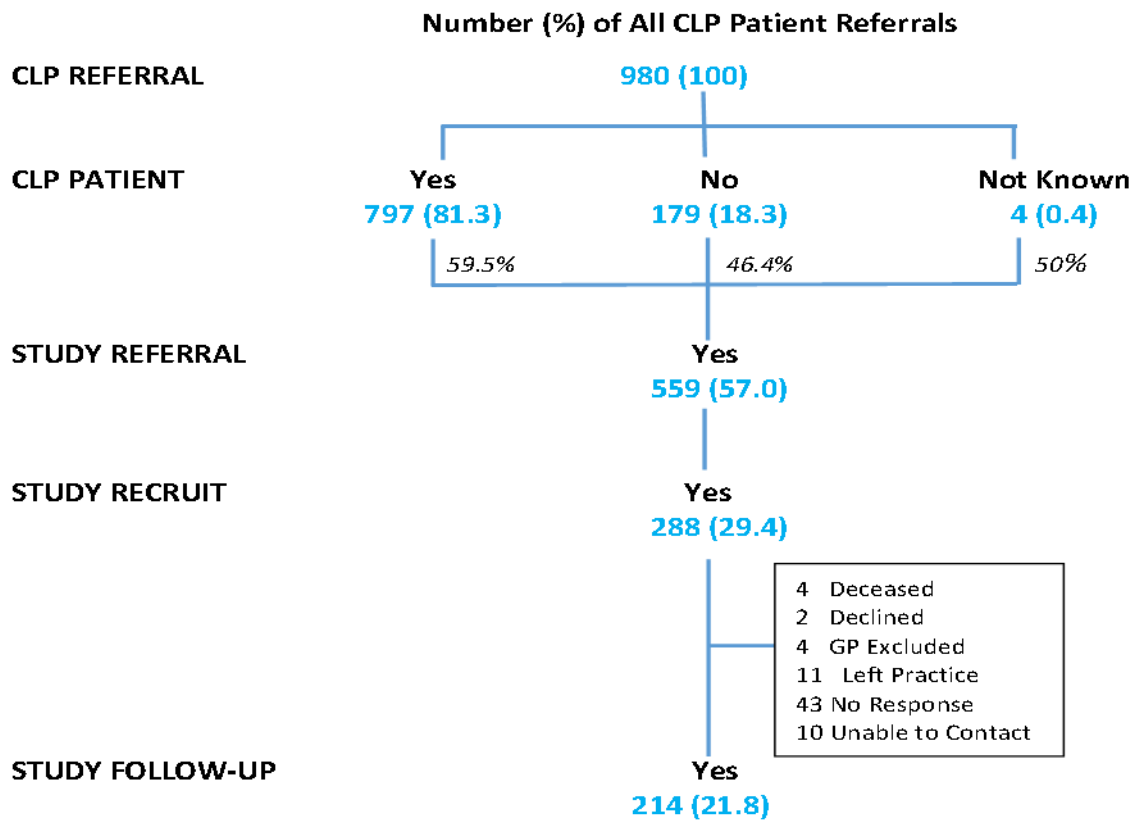


Figure S1(b). Achieved Comparison Practice Study Patient Numerator (n,%)

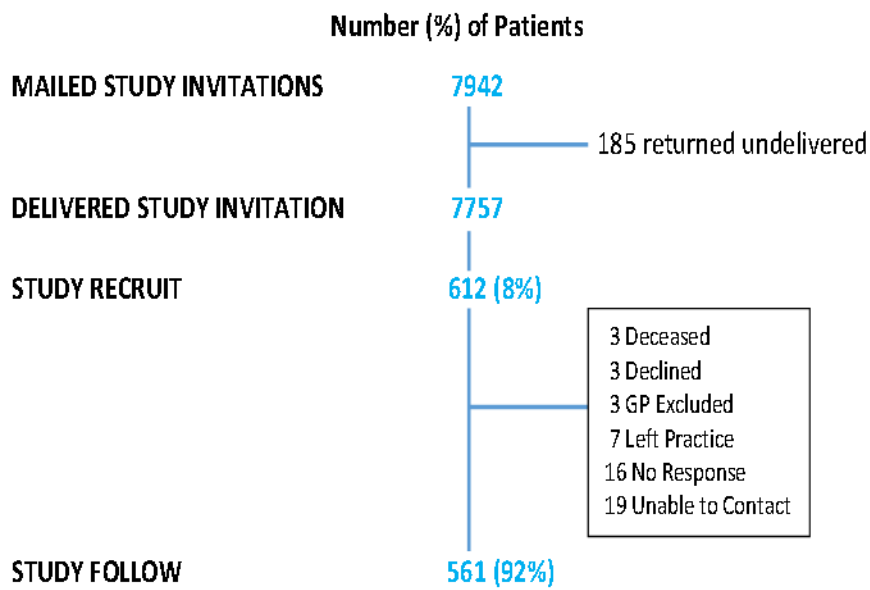


Table S2. Characteristics of Patients in Intervention Practices Referred to, Recruited and Followed-Up by, the Study Compared to the Programme Patient Denominator (n,%, mean)

INTERVENTION PRACTICE PATIENT STUDY POPULATION	CHARACTERISTIC				
	Female	Age (years)	SIMD Score	Number of Recorded Referral Problems	Number of Recorded Referral Domains
	Number (%) p value	Mean p value	Mean p value	Mean p value	Mean p value
Denominator	580 (59.2)	46.43	800.31	2.03	1.45
Patient Referrals	351 (62.8) 0.008	46.41 0.978	817.95 0.564	2.02 0.623	1.44 0.866
Patient Recruits	176 (61.1) 0.428	48.28 0.018	869.24 0.210	1.98 0.328	1.42 0.419
Patient Follow-Ups	129 (60.3) 0.712	50.01 0.000	944.07 0.057	1.99 0.562	1.40 0.238

Table S3: Patients' frequency of individuals with each medical morbidity conditions at baseline, by randomised group

	All 900	Comparator 612	Intervention 288	p-value
High Blood Pressure	314 (34.9%)	210 (34.3%)	104 (36.1%)	p=0.601
Stroke/mini-stroke	65 (7.2%)	45 (7.4%)	20 (6.9%)	p=0.891
Diabetes	78 (8.7%)	49 (8.0%)	29 (10.1%)	p=0.311
Angina/Heart Attack	70 (7.8%)	49 (8.0%)	21 (7.3%)	p=0.790
Heart Failure	9 (1.0%)	5 (0.8%)	4 (1.4%)	p=0.478
Anxiety/Depression	438 (48.7%)	220 (35.9%)	218 (75.7%)	p<0.001
Arthritis	246 (27.3%)	174 (28.4%)	72 (25.0%)	p=0.298
Back Problems	262 (29.1%)	167 (27.3%)	95 (33.0%)	p=0.084
Thyroid Problem	53 (5.9%)	40 (6.5%)	13 (4.5%)	p=0.288
Eczema/Psoriasis	112 (12.4%)	74 (12.1%)	38 (13.2%)	p=0.665
Liver Disease	26 (2.9%)	11 (1.8%)	15 (5.2%)	p=0.009
Kidney Disease	27 (3.0%)	20 (3.3%)	7 (2.4%)	p=0.676
Asthma	181 (20.1%)	101 (16.5%)	80 (27.8%)	p<0.001
Chronic Bronchitis	51 (5.7%)	21 (3.4%)	30 (10.4%)	p<0.001
Migraine	114 (12.7%)	62 (10.1%)	52 (18.1%)	p=0.001
Cancer	46 (5.1%)	36 (5.9%)	10 (3.5%)	p=0.145
Irritable Bowel Syndrome	135 (15.0%)	88 (14.4%)	47 (16.3%)	p=0.484
Other	108 (12.0%)	64 (10.5%)	44 (15.3%)	p=0.047

p values based on Fisher's exact Test

Table S4: Patients' frequency of individuals with each social morbidity conditions at baseline, by randomised group

	All 900	Comparator 612	Intervention 288	p-value
Partner, family or close friends	278 (30.9%)	162 (26.5%)	116 (40.3%)	p<0.001 ^F
Housing condition	130 (14.4%)	54 (8.8%)	76 (26.4%)	p<0.001 ^F
Conditions at current job	106 (11.8%)	69 (11.3%)	37 (12.8%)	p=0.507 ^F
Weight	347 (38.6%)	209 (34.2%)	138 (47.9%)	p<0.001 ^F
Alcohol/Illegal drug level	77 (8.6%)	32 (5.2%)	45 (15.6%)	p<0.001 ^F
Opportunities to socialise	195 (21.7%)	67 (10.9%)	128 (44.4%)	p<0.001 ^F
Ability to access suitable exercise	133 (14.8%)	70 (11.4%)	63 (21.9%)	p<0.001 ^F
Neighbours	68 (7.6%)	39 (6.4%)	29 (10.1%)	p=0.058 ^F
Ability to find a suitable job	106 (11.8%)	43 (7.0%)	63 (21.9%)	p<0.001 ^F
Financial situation	220 (24.4%)	109 (17.8%)	111 (38.5%)	p<0.001 ^F
Smoking Level	120 (13.3%)	58 (9.5%)	62 (21.5%)	p<0.001 ^F
Role/responsibilities as a carer	90 (10.0%)	50 (8.2%)	40 (13.9%)	p=0.009 ^F
Ability to cope with a bereavement	146 (16.2%)	61 (10.0%)	85 (29.5%)	p<0.001 ^F
Ability to access suitable leisure facilities	100 (11.1%)	47 (7.7%)	53 (18.4%)	p<0.001 ^F
Other	77 (8.6%)	42 (6.9%)	35 (12.2%)	p=0.010 ^F

p values based on Fisher's exact Test

Table S5: Patients' demographic and Socio-economic characteristics at baseline, intervention group, by whether CLP seen before baseline

	All	Yes	No	p-value
Age (years)				
N (N Missing)	288 (0)	124 (0)	159 (0)	p=0.731 ^{KW}
Mean (sd)	49 (15)	49 (14)	50 (15)	
Median (IQR)	50 (37, 57)	50 (39, 57)	51 (36, 58)	
Min , Max	21, 92	21, 91	21, 92	
Sex				
N (N Missing)	288 (0)	124 (5)	159 (5)	p=0.624 ^F
N (%) Male	112 (38.9%)	51 (41.1%)	60 (37.7%)	
N (%) Female	176 (61.1%)	73 (58.9%)	99 (62.3%)	
Deprivation category (decile)				
N (N Missing)	281 (7)	122 (7)	154 (10)	p=0.304 ^F
N (%) 1 (MD)	176 (62.6%)	75 (61.5%)	98 (63.6%)	
N (%) 2	47 (16.7%)	17 (13.9%)	30 (19.5%)	
N (%) 3 to 5	45 (16.0%)	24 (19.7%)	19 (12.3%)	
N (%) 6 to 10 (LD)	13 (4.6%)	6 (4.9%)	7 (4.5%)	
Employment status				
N (N Missing)	282 (6)	124 (5)	153 (11)	p=0.230 ^F
N (%) Emp_FT	46 (16.3%)	26 (21.0%)	19 (12.4%)	
N (%) Emp_PT	22 (7.8%)	11 (8.9%)	10 (6.5%)	
N (%) Unemp_SW	28 (9.9%)	9 (7.3%)	19 (12.4%)	
N (%) Unemp_UnFtToW	138 (48.9%)	58 (46.8%)	77 (50.3%)	
N (%) Carer	13 (4.6%)	6 (4.8%)	7 (4.6%)	
N (%) Retired	31 (11.0%)	11 (8.9%)	20 (13.1%)	
N (%) Other	4 (1.4%)	3 (2.4%)	1 (0.7%)	
Living arrangement				
N (N Missing)	280 (8)	123 (6)	152 (12)	p=0.301 ^F
N (%) Live with partner or spouse	91 (32.5%)	44 (35.8%)	45 (29.6%)	
N (%) Do not live with partner or spouse	189 (67.5%)	79 (64.2%)	107 (70.4%)	
Language spoken at home				
N (N Missing)	278 (10)	120 (9)	153 (11)	p=1.000 ^F
N (%) English	272 (97.8%)	117 (97.5%)	150 (98.0%)	
N (%) Other	6 (2.2%)	3 (2.5%)	3 (2.0%)	

M: Mann-Whitney-Wilcoxon Test; F: Fisher's exact Test; KW: Kruskal-Wallis Test

Table S6: Patients' health and Wellbeing measures at baseline, intervention group, by whether CLP seen before baseline

	All	Yes	No	p-value
Multi-Morbidity (Minimum possible=0; Maximum possible=18)				
N (N Missing)	288 (0)	124 (0)	159 (0)	p=0.122 ^{KW}
Mean (sd)	3.1 (2.1)	2.9 (1.9)	3.3 (2.2)	
Median (IQR)	3.0 (2.0, 4.0)	3.0 (1.0, 4.0)	3.0 (2.0, 5.0)	
Min , Max	0.0, 10.0	0.0, 9.0	0.0, 10.0	
Social-Morbidity (Minimum possible=0; Maximum possible=15)				
N (N Missing)	288 (0)	124 (0)	159 (0)	p=0.840 ^{KW}
Mean (sd)	3.8 (2.5)	3.8 (2.8)	3.6 (2.3)	
Median (IQR)	3.0 (2.0, 5.0)	3.5 (2.0, 5.0)	3.0 (2.0, 5.0)	
Min , Max	0.0, 14.0	0.0, 14.0	0.0, 10.0	
Work and social-Adjustment (Best possible=0, Poorest possible=40)				
N (N Missing)	259 (29)	108 (16)	146 (13)	p=0.527 ^{KW}
Mean (sd)	22.3 (12.2)	21.5 (12.8)	22.7 (11.9)	
Median (IQR)	24.0 (12.5, 32.5)	22.5 (11.0, 32.2)	25.0 (14.0, 32.8)	
Min , Max	0.0, 40.0	0.0, 40.0	0.0, 40.0	
EQ-5D (Best possible health condition=1, Poorest possible health condition=-0.549)				
N (N Missing)	277 (11)	122 (2)	150 (9)	p=0.240 ^{KW}
Mean (sd)	0.382 (0.337)	0.408 (0.334)	0.358 (0.337)	
Median (IQR)	0.378 (0.103, 0.664)	0.408 (0.130, 0.694)	0.351 (0.087, 0.650)	
Min , Max	-0.390, 1.000	-0.245, 1.000	-0.390, 1.000	
ICE-CAP_A (Best possible quality of life=1, Poorest possible quality of life=-0.001)				
N (N Missing)	281 (7)	120 (4)	157 (2)	p=0.498 ^{KW}
Mean (sd)	0.563 (0.228)	0.575 (0.225)	0.555 (0.232)	
Median (IQR)	0.536 (0.401, 0.703)	0.573 (0.431, 0.740)	0.536 (0.371, 0.685)	
Min , Max	0.047, 1.000	0.119, 1.000	0.047, 1.000	
HADS Anxiety (Best possible score=0, Poorest possible score=21)				
N (N Missing)	276 (12)	119 (5)	152 (7)	p=0.778 ^{KW}
Mean (sd)	12.7 (4.7)	12.7 (4.9)	12.7 (4.5)	
Median (IQR)	13.0 (10.0, 16.0)	14.0 (9.0, 17.0)	13.0 (10.0, 16.0)	
Min , Max	0.0, 21.0	1.0, 21.0	0.0, 20.0	
HADS Depression (Best possible score=0, Poorest possible score=21)				
N (N Missing)	280 (8)	121 (3)	154 (5)	p=0.912 ^{KW}
Mean (sd)	11.2 (4.6)	11.2 (4.3)	11.2 (4.8)	
Median (IQR)	11.0 (8.0, 14.0)	11.0 (8.0, 14.0)	11.5 (8.0, 14.8)	
Min , Max	0.0, 21.0	1.0, 21.0	0.0, 21.0	

M: Mann-Whitney-Wilcoxon Test; F: Fisher's exact Test; KW: Kruskal-Wallis Test