AN EVALUATION OF PASSPORT TO HEALTH

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Executive summary

The evaluation of Passport to Health (P2H) provides insight into the content and performance of the service, and how it is experienced by those who use it. The conclusions and recommendations were drawn from pulling together data from a variety of sources and of different types. These include; data from annual monitoring information, interviews with patients and referrers, surveys, observations of consultations, and a formal trial involving the objective measurement of physical activity before and after P2H.

Programme Reach:

The analysis of monitoring data confirmed that the service is reaching a wide range of the local eligible community, and recruits over 50% of clients from the two most socially deprived quintiles. More women access the service than men (approximately 70% of clients are female), and only 5% of referrals are from ethnic minority groups, compared against a B&NES population proportion of 10%. Approximately one third of clients are aged 45-54, and 44% are aged between 55 and 74.

Of those referred to the service, 71% start on the programme and 54% complete the full 12-week course and attend a final exit meeting with their advisor. Patients living with greater deprivation are less likely to attend a first appointment. The Community Activator service has higer completion rates than the facility based service (80% vs 54%), which is likely to be a result of working more intensively with clients in their homes. Most (75%) clients are referred as a result of having high cardio-vascular (CVD) risk, and these clients tend to be slightly less likely to complete the programme than those referred for depression.

According to monitoring the service is effective; **following a 12-week course, patients are active on more days of the week than when they started, lose on average 2.2 kg in weight and reduce their waist circumference by 3.9 cm. Furthermore, they have better confidence, self-esteem and wellbeing than when they started.**

Patient experience:

All people referred to P2H over a 1-year period were sent a survey questionnaire asking for their views on the service. Two hundred and sixty (23%) responded, and a further 30 clients representative of both those who did and did not take up the

referral to use the service were interviewed. Common reasons for not starting on P2H included confusion during the referral process (for example not knowing what they were being referred to), and a lack of belief that the service would be useful; this was particularly the case for people with limiting health conditions. Many clients did not realise they could access other facilities or support beyond using the gym. Issues of cost or convenience were reported by 6% of respondents. **The people referred felt that improving the referral process through providing more information, and reducing the time between referral and starting with P2H would have made them more likely to use the service.**

Of the respondents who did use the service, satisfaction with the service was very high (78% in non-completers and 91% of completers). The most common reason for wanting to take part in P2H was for weight loss; this may have an impact on patients' focus and goal setting on taking part, moving away from a focus on physical activity and towards weight. This is likely to make it harder for them to achieve their goals as weight loss from physical activity alone is challenging when starting out with physical activity. However, most (70% of completers, and 60% of non-completers) clients considered that they had met, or partially met their goal for joining P2H. Interview data highlighted the importance that clients put on having supportive personal relationships with advisors, and the flexibility offered to them of when and where they could attend. Indeed, perceptions of poor flexibility were cited as a barrier to those who dropped out, alongside poor health, and preferring to exercise independently. **Clients felt that the most useful things they had done to achieve an increase in physical activity were setting goals, keeping a diary, exercising with friends, and enjoying their new activities.**

Content of P2H consultations:

To establish what sort of support is being provided to patients and whether this is standard throughout the service, we observed a sample of 20% of initial consultations delivered during one month of the scheme. This included multiple consultations delivered by all active exercise consultants at the time. We found that consultants are extensively tailoring what they deliver to match the client characteristics other factors, so there did not appear to be a single 'standard practice'. **Adherence to the protocol by exercise consultants was on average 63%**, though this masked a wide range of adherence to individual components that could be delivered in any given consultation of 0-100%. Variation in the interpretation of some protocol elements was also evident; for example, goal setting was commonly completed but were not always specific (SMART) goals, did not always relate to physical activity (i.e., focussed on weight loss), and could range from goals for the next week to goals for the next year.

We also compared the content of consultations in terms of the support for behaviour change that was provided, with behaviour change techniques and counselling styles that are supported by research evidence. This was to explore how P2H compares with current best-practice in physical activity intervention design. **Several key behaviour change techniques that are supported by evidence were not commonly provided in consultations. These included; self-monitoring, setting process goals (i.e., short-term physical activity goals in this case), providing support for self-efficacy, coping planning, helping clients to identify sources of social support, and delivering the service in a client-centred style.** Adapting the protocol and training to include some of these elements (given the limited time available) may enhance the long-term outcomes of P2H. It was of note that some of these same techniques (namely self-monitoring and social support) were also identified by service users as most useful in their attempts to increase their physical activity.

Objective evaluation of the efficacy of P2H:

The full evaluation of P2H outcomes was conducted with patients enrolling from September 2012 to April 2013; all patients were invited to take part, but were free to continue to attend P2H if they chose not to take part in the additional research activities. Data were collected from 117 patients, who were largely representative of all P2H users in comparison with monitoring data.

There was a significant improvement in time spent in moderate to vigorous physical activity of 25 minutes/week, or 1292 steps/day after the 12-week programme. Health related quality of life and motivation to exercise also improved, and weight loss neared significance. Some changes in diet were also observed, which were not prompted by P2H consultants but no doubt reflect participants' concurrent weight loss goals. One year after referral, these changes had decreased; however, the improvements in step count, quality of life and the number of GP visits patients reported making were still significantly improved since baseline.

There was no difference in physical activity outcomes for CVD and depression referral groups. CVD patients lost more weight at 12 weeks, and depression referrals reported greater gains in motivation and self-efficacy at 1 year. Other predictors of changes in physical activity were also explored. There were no consistent predictors of better outcomes, although (i) higher increases in moderate physical activity were predicted by being older and having less functional limitation, (ii) men showed significantly greater improvements in step count and quality of life than women, and (iii) people with lower levels of education were less likely to decrease their sedentary time, but no less likely to increase their moderate physical activity levels.

Views of people referring into the service:

GPs, practice nurses and health care assistants involved in the identification and referral of patients to P2H were contacted either through surveys (N=34, GPs only) or invitation to attend an interview (N=6). Overall, **there appeared to be confusion as to what P2H is (particularly in relation to other healthy lifestyles services), and an appetite for the provision of greater regular information on individual patient and service level performance**. Respondents felt it would be useful to have data on how surgeries are performing relative to one another (i.e., league tables), to have literature that they can provide to patients to explain what the service is, and for the council to extend the range of professionals who can refer into the service (or introduce self-referral). Many comments made by referrers echoed those of the patients themselves made in Part 2; referrers are concerned about the referral process, and believe that an improvement in information provision and streamlining the process could increase both referral and uptake.

Cost efficacy evaluation:

An independent economic evaluation was conducted to assess the cost per patient of the P2H service, for comparison with other health improvement services and NICE guidance.

Based on objective MVPA outcomes at 12 weeks, the cost per quality of life year gained (QALY) of P2H is £11,892.22. The cost per QALY compare favourably with NICE thresholds of £20-30,000, and to other exercise referral services (estimated at £12,111 to £20,876 per QALY). However, this figure is likely to be an overestimate of the cost-efficacy of the service as the model assumes that changes in physical activity will be maintained. We cannot accurately estimate cost efficacy at 1 year due to low numbers of patients providing physical activity measures at this time, but we know from the data we have that physical activity decreased.

Development of an evaluation toolkit:

Drawing on the experience of conducting the five evaluation studies in the context of P2H delivery within B&NES that are reported in this document, in addition to guidance from public health commissioners, an evaluation toolkit has been developed. The toolkit is devised to be used by service providers who do not have existing expertise in evaluation methods. Six key elements were identified, to include; 1) Monitoring Service Performance, 2) Measuring Client Satisfaction, 3) Evaluating a New Intervention, 4) Choosing Research Methods, 5) Conducting Focus Groups and Interviews and 6) Conducting Data Analysis.

Each element is presented as an A4 leaflet, which links to a council-based website that provides more information and access to more detailed advice and support. All leaflets are available in the Appendix and online:

http://www.bathnes.gov.uk/services/sport-leisure-and-parks/health-and-fitness/passport-health/evaluation-tool-kit

Impact and recommendations:

The outcomes of this evaluation have already had impact on the P2H service.

1. The findings have informed an updated service delivery protocol, with input by exercise referral consultants, to increase standardisation of the service and provision of key identified techniques in all consultations (Appendix 6).
2. Exercise referral consultants have been engaged in discussion and training to highlight the importance of the inclusion of certain forms of behaviour support, and adopting a client centred approach. The impact of this on the service that clients receive will be assessed during summer 2014.
3. Service monitoring has been improved through introduction of validated standardised measures into monitoring forms, and the introduction of a client satisfaction survey for all potential clients, and introduction of standard monitoring measures for physical activity and quality of life.
4. Potential clients who have low health risk and also be referred without visiting their doctor, streamlining entry to the service.

Recommendations for Future Development

1) Increase the provision of information to referrers

2) Improve the information provided to patients on referral

3) Monitor and address delays between referral and starting on P2H, and monitor reasons and patterns of non-attendance

4) Improve flexibility of access (and/or communication of service flexibility)

5) Enhance motivational content of consultations through endorsement of key behaviour change techniques as standard; in particular techniques to promote the maintenance of behaviour change

6) Recognise and manage patients' weight loss goals within a context of physical activity promotion

7) Explore the potential to extend support beyond the 12-week programme

8) Continue the assessment of service performance

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Part 1 – The Reach of Passport to Health in BANES

1.1 Who is using Passport to Health (P2H)?

1.1.1 Demographics

Between April 2012 and March 2013 a total of 845 referrals were made to the P2H scheme; of which 69% were female and 95% were of a White British ethnic origin (see Table 1.1). Such demographic differences remained consistent across all service localities and activity pathways. However, gender differences appeared wider in the community activator and group pathways compared to the main facility pathways.

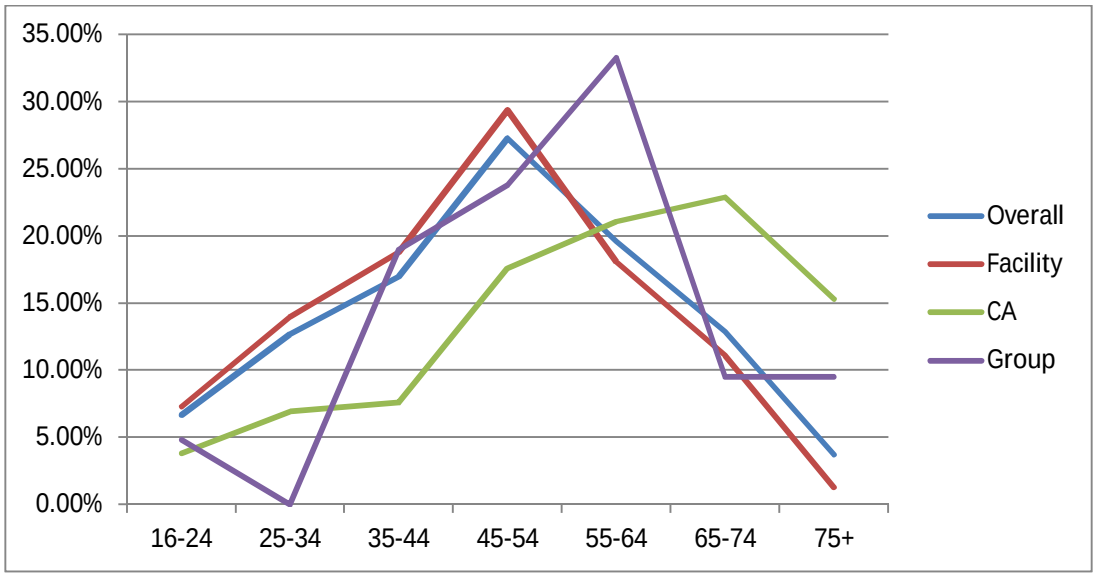
Table 1.1 P2H service user demographics

		Gender		Ethnicity	
	N	Male	Female	White British	Other
Overall	845	265 (31%)	579 (69%)	805 (96%)	28 (3%)
Pathway					
Facility	686 (81%)	224 (33%)	461 (67%)	650 (96%)	25 (3%)
Community activator	131 (16%)	36 (28%)	95 (73%)	128 (99%)	2 (2%)
Group courses	21 (3%)	3 (14%)	18 (86%)	20 (95%)	1 (5%)
Locality accessed					
Bath	352 (42%)	109 (31%)	243 (69%)	325 (94%)	20 (6%)
Keynsham	162 (19%)	51 (31%)	111 (69%)	157 (98%)	4 (3%)
MSN	323 (39%)	103 (32%)	220 (68%)	316 (99%)	4 (1%)
Reach					
B&NES estimate	176,000	49%	51%	90%	10%

Census (2011) data indicates that the Passport to Health scheme is engaging fewer men and ethnic minority groups compared to the local Bath and North East Somerset (B&NES) population.

Figure 1.1 shows the age breakdown of the P2H service users across the different activity pathways. The 45-54 age group was the most common age group within the facility route (comprising 29% of the sample) across all localities. Clients accessing the community activator route appeared to be older than those accessing the facility route; 21% and 23% of clients in this pathway were from the 55-64 and 65-74 age groups respectively, and 33% of clients using the group pathway were aged between 45-54 years old.

Figure 1.1 Age distribution of P2H clients by activity pathway



A total of 53% of service users lived within the two most deprived quintiles, as assessed using the Index of Multiple Deprivation (IMD, see Table 1.2). These patterns of deprivation were broadly consistent across activity pathways although slight differences existed between the different localities; Bath attracted a higher number of service users from the most deprived quintile compared to Keynsham and Midsomer Norton. However, overall P2H seems to be successful in attracting deprived individuals given that only 12 % of B&NES residents live within the two most deprived quintiles.

Table 1.2 Demographic breakdown of P2H service users

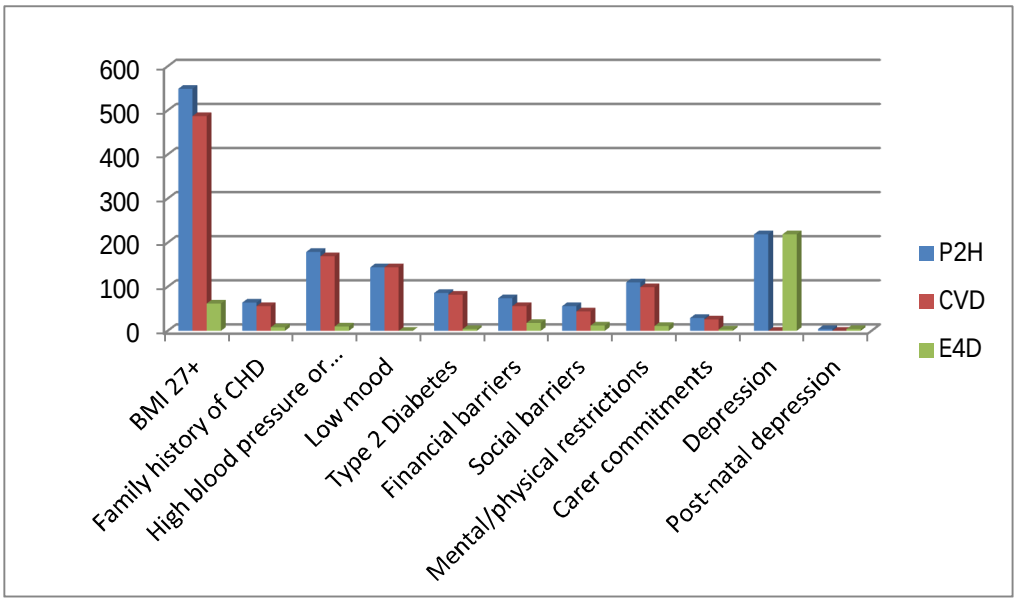
	IMD				
	Q1 most affluent	**Q2**	**Q3**	**Q4**	**Q5 most deprived**
Overall	97 (12%)	134 (16%)	167 (20%)	205 (25%)	235 (28%)
Pathway					
Facility	78 (12%)	99 (15%)	136 (20%)	168 (25%)	200 (30%)
Community activator	17 (13%)	28 (22%)	27 (21%)	27 (21%)	31 (24%)
Group courses	2 (10%)	5 (25%)	3 (15%)	8 (40%)	2 (10%)
Locality					
Bath	56 (16%)	58 (17%)	31 (9%)	68 (19%)	137 (39%)
Keynsham	26 (16%)	18 (11%)	38 (24%)	48 (30%)	30 (19%)
Midsomer Norton	15 (5%)	56 (17%)	97 (30%)	87 (27%)	66 (21%)
Reach					
B&NES estimate	42%	29%	17%	8%	4%

Notes: Based on Communities and local government 2011 data

1.1.2 Reasons for referral

The majority of clients (74%) were referred because they were classified as having a CVD risk, whilst the remainder were referred due to having mild/moderate depression (E4D) (26%). The reasons for referral are summarised in Figure 1.2.

Figure 1.2 Reasons for referral to Passport to Health



Slightly more women were referred on the exercise for depression route than men (Table 1.3) but these differences were not statistically significant. Slightly fewer E4D clients accessed the community activator route compared to those referred as a CVD risk, but again these differences were not statistically significant. Significant differences existed in terms of the number of E4D and CVD clients accessing the service in Keynsham. However, this is likely to reflect lower service numbers within the Keynsham locality rather than genuine low demand from CVD or E4D groups.

1.1.3 Health profile

The health profile of participants taking part in each of the activity pathways is displayed in Table 1.4. Significant differences existed between clients in different pathways at baseline; clients accessing the community activator route had a higher body fat percentage, systolic blood pressure and waist circumference than those following the facility route. Community activator clients also reported being active for 30 minutes or more on fewer days of the week, and had lower ratings of self-esteem and confidence in being regularly active. These findings suggest that community activator clients represent a high need group.

Table 1.3 Demographic and biometric characteristics of people referred to P2H for CVD risk or mild/moderate depression (E4D)

	CVD risk N (%)	E4D		CVD risk Means (Std Dev)	E4D
Number referred	625 (74%)	219 (26%)	***Biometric measures***		
Gender			Weight (Kg)	95 (21)	84 (20)*
Male	206 (33%)	59 (27%)	Body Mass Index (kg/m^2)	33 (6)	29 (7) *
Female	419 (67%)	160 (73%)	Body fat (%)	43 (11)	37 (12) *
Ethnicity			Systolic Blood Pressure (mm Hg)	133	127
White British	592 (96%)	213 (98%)	Diastolic Blood Pressure (mm Hg)	82	79
Other	24 (4%)	4 (2%)	Waist circumference (cm)	111 (16)	100 (16) *
Index of Multiple Deprivation			***Self-report measures***		
Q1	76 (12%)	21 (10%)	Activity levels (number of days active for 30 mins per week)	1.7 (1.3)	1.9 (1.3)
Q2	101 (16%)	33 (15%)			
Q3	116 (19%)	51 (24%)			
Q4	163 (26%)	42 (19%)			
Q5	165 (27%)	70 (32%)			
Pathway			Self-esteem (1-4 scale)	2.4 (0.8)	2.0 (0.8) *
Facility	503 (81%)	183 (85%)			
Community activator Group	106 (17%) 14 (2%)	25 (12%) 7 (3%)	Confidence in being active (1-4 scale)	2.9 (0.8)	2.8 (0.8)
Locality			General health and wellbeing (1-4 scale)	2.5 (0.8)	2.2 (0.7) *
Bath	249 (40%)	103 (48%)*			
Keynsham	134 (22%)	29 (14%)			
Midsomer Norton	240 (39%)	83 (39%)			

*Notes: * difference reaches statistical significance*

Significant differences existed in baseline health indicators across localities. Clients in Midsomer Norton appeared to have poorer health indicators (higher weight, BMI's and waist circumference) at baseline compared than clients in Bath, although greater confidence in being regularly active. In comparison, clients in Bath reported higher levels of physical activity and rated their self-esteem and general health and wellbeing as higher at baseline compared to the other areas.

Table 1.4 Health profile of participants referred to P2H at referral

	Activity Pathway					Locality			
Client profile	Overall *Mean (SD)*	Facility *Mean (SD)*	Community activator *Mean (SD)*	Group *Mean (SD)*	*P*	Bath *Mean (SD)*	MSN *Mean (SD)*	Keynsham *Mean (SD)*	*P*
Weight (kg)	92.2 (21)	93.0 (21)	88.6 (19)	92.4 (14)	NS	89.9 (20.)	94.8 (20)	92.2 (23)	*
BMI	32.6 (7)	32.8 (6.7)	31.5 (6.4)	34.5 (6.6)	NS	31.5 (6.8)	33.8 (6.2)	33.1 (7.1)	**
Body fat % percentage	41.2 (11)	40.6 (11)	45.1 (14)	43.3 (9)	**	41.3 (12.5)	41.5 (9.9)	40.5 (11.8)	NS
Systolic BP	131	130	137	131	*	129	132	134	**
Diastolic BP	81	82	79	81	***	79	84	82	***
Waist circumference(cm)	108.1 (17)	109.4 (17)	101.1 (15)	105.2 (9)	***	106.5 (16)	111.3 (16)	102.0 (18)	***
Self reported physical activity levels (days/week)	1.7 (1.3)	1.9 (1.3)	0.8 (1.0)	1.5 (1.6)	***	1.9 (1.3)	1.6 (1.3)	1.5 (1.2)	***
Self-esteem (1-4)	2.3 (0.9)	2.4 (0.9)	2.0 (0.8)	2.2 (0.7)	***	2.4 (0.8)	2.1 (0.9)	2.3 (0.9)	**
Confidence in being regularly active (1-4)	2.9 (0.8)	3.0 (0.7)	2.2 (0.9)	2.4 (1.0)	***	2.7 (0.7)	3.1 (0.8)	2.7 (0.9)	***
General health and wellbeing (1-4)	2.5 (0.7)	2.4 (0.7)	2.5 (0.8)	2.6 (0.6)	NS	2.5 (0.6)	2.3 (0.8)	2.6 (0.9)	**

*Notes: SD – standard deviation, P- statistical significance following ANOVA; * p<.05, ** p<.01, ***p<.001*

1.2 Patterns of service use

Table 1.5 shows the uptake rates and completion rates according to locality, pathway, demographics and health condition.

The overall uptake rate for P2H was 71%, and the overall completion rate was 54%. However, some significant differences existed (detailed in Table 1.5):

Table 1.5 Factors associated with uptake and completion of P2H

	Number referred	Number started	Number completed
Overall rates	813	576 (71%)[±]	435 (54%)
Locality			
Bath	349	246 (70%)	188 (54%)
MSN	317	233 (74%)	173 (55%)
Keynsham	141	97 (69%)	74 (52%)
Activity pathway			
Facility route	686	481 (70%)	367 (53%)
Community activator	106	85 (80%)	68 (80%)
Group	21	15 (71%)	14 (64%)
Demographics			
Gender			
Male	257	183 (71%)	140 (54%)
Female	555	397 (72%)	309 (56%)
Age			
16-24	54	33 (61%)	34 (63%)
25-34	102	68 (67%)	67 (66%)
35-44	140	93 (66%)	79 (56%)
45-54	226	164 (73%)	125 (55%)
55-64	156	116 (74%)	82 (53%)
65-74	105	86 (82%)	47 (45%)
75+	29	20 (69%)	14 (48%)
Ethnicity			
White British	774	549 (71%)	424 (55%)
Other	28	22 (79%)	17 (61%)
Deprivation*			
1 (most affluent)	78	61 (78%)	35 (45%)
2	99	69 (70%)	59 (60%)
3	136	103 (76%)	66 (49%)
4	168	111 (66%)	96 (57%)
5 (most deprived)	200	133 (67%)	110 (55%)
Health condition			
CVD	607	439 (72%)	321 (53%)
E4D	206	142 (69%)	128 (62%)

*Notes: [±] percentages are relative to the number referred; *available for facility route only*

- There were no significant differences between the localities in relation to completion rates.

- Service uptake and completion rates were significantly higher for the community activator group, relative to the facility route and people using group activities.

- In terms of demographics; gender, age, and ethnicity appeared to have no influence on uptake or completion rates, but there were some differences in uptake only according to IMD (social deprivation) quintiles; people who were the least socially deprived were most likely to access the service.

Uptake of referral was equivalent for patients referred with a CVD risk or for depression, however, patients referred for depression were more likely to complete the programme than those referred with a high CVD risk.

1.3 Outcomes from Monitoring Data

Outcomes associated with P2H programme are displayed in Table 1.6. An intention to treat analysis was used, whereby those who did not attend an exit appointment (i.e., provide data at 12 weeks) were presumed to have experienced no change. This provides a more conservative and realistic estimate of outcomes than analysing only those who completed the programme. Significant improvements were observed at exit with regards to weight, BMI, body fat percentage and waist circumference (Table 1.6). Significant improvements were also reported in physical activity levels, self-esteem, confidence in being regularly active, and perceptions of general health and wellbeing.

1.3.1 Do service-level factors influence outcomes?

Demographic variables: Outcomes of the programme did not appear to be influenced by demographic characteristics such as gender, deprivation and ethnicity. Patients referred for CVD risk reported a larger increase in the number of days they were physically active compared with E4D patients (+0.64 compared to +0.34).

Pathway: Clients completing the community activator route reported greater positive changes than those accessing the facility and group routes in relation to physical activity, waist circumference, self-esteem and confidence in being regularly active.

Locality: Clients taking part in P2H in Keynsham and Midsomer Norton experienced bigger increases in self-reported physical activity compared to those in Bath, in addition to bigger increases in general health and wellbeing.

For all analyses, the greatest gains were reported for patients reporting poorer health indices at baseline; therefore, it is likely that it is the client type, rather than local

differences in service characteristics that are responsible for reported differences in outcomes.

Table 1.6 Outcomes associated with using P2H

	Measures	N	Baseline	Exit	*p*	Difference
Biometric	Weight (Kg)	208	92.1	89.9	***	2.2
	Body Mass Index (kg/m^2)	204	32.5	31.9	**	0.6
	Body fat (%)	194	42.0	39.8	***	2.2
	Systolic Blood Pressure (mm Hg)	206	131	130	NS	1
	Diastolic Blood Pressure (mm Hg)	206	81	80	NS	1
	Waist circumference (cm)	174	109.1	105.2	***	3.9
Self-reported	Activity levels (number of days active for 30 mins per week)	248	1.8	3.1	***	1.3
	Self-esteem (1-4 scale)	212	2.3	2.9	***	0.6
	Confidence in being active (1-4 scale)	211	2.8	3.2	***	0.4
	General health and wellbeing (1-4 scale)	209	2.5	3.0	***	0.5

*Notes: p=statistical significance; * p<.05, ** p<.01, ***p<.001, NS = not significant*

1.3.2 Do patient characteristics predict outcomes?

Linear regression was conducted to examine whether any factors predicted change of physical activity levels, weight or general health and wellbeing.

Who was most likely to change their physical activity levels?

Higher increases in physical activity were predicted by;

- higher baseline body fat percentage
- lower reported physical activity levels at baseline
- referral for CVD rather than depression (note: this may be as CVD patients typically had lower starting physical activity levels)

Who was most likely to change their weight and BMI?

Greater weight loss was predicted by;

- lower baseline body fat
- lower baseline body weight

Who was most likely to change their general health and wellbeing?

Greater improvement in general health and wellbeing was predicted by lower baseline physical activity levels.

Part 2 – Client Experiences of Passport to Health

2.1 Customer service survey feedback

2.1.1 Profile of responders

Surveys were posted out to all referrals received between January 2013 and October 2013 (Appendix 1). From a total of 1,155 questionnaires sent out, 260 responses were received; 146 were from clients who had not started the programme (Table 2.1). Most respondents (77%) were female, reflecting the greater proportion of women who are enrolled on P2H. Clients were categorised into four groups for analysis;

1) *NON-ENGAGER*: Clients who were referred but did not respond to any contact attempts.
2) *DID NOT START:* Clients who had contact with the P2H team, but did not attend an initial meeting.
3) *NON COMPLETER:* Clients who attended an initial appointment with an exercise referral consultant, but did not continue with the programme for the full 12 weeks.
4) *COMPLETER:* Clients who attended an initial appointment, and an exit appointment at 12 weeks.

Table 2.1 Comparison of responses between groups from customer surveys (%)

	Non-engager	Did not start	Non completer	Completer
Aware referred	88	90	85	98
Requested referral	39	37	44	36
Felt positive at point of referral	31	36	44	49
Looking forward to being active	17	34	26	23
Looking forward to losing weight	16	33	20	24
Felt unsure about being referred	14	10	4	12
Concerned about using a gym	14	5	11	8
Lacked confidence	11	4	6	8
Concerned about cost	10	6	7	3
Did not want to be referred	3	7	0	0

There were no significant differences in the service expectations between the four groups as shown in table 2.1. One third of patients did not know what to expect on referral, with a further 31% believing they had been referred to Slimming on Referral. Nearly one third were expecting free access to facilities, and 33% appreciated that access would only be at reduced cost. Thirty-seven percent expected a personalised exercise programme. Expectations were not reliably different between categories (i.e., there were no statistically significant differences) although those who did attend a first appointment were more likely to expect a personalised exercise programme.

2.1.2 Experiences of DID NOT STARTS and NON ENGAGERS

Reasons for non-attendance and engagement:

Clients who did not start the programme commonly reported that this was due to not hearing from (or not being called back by) P2H staff (24%); not replying to staff contacts received to set up an initial appointment (10%); attending Slimming on Referral in preference to P2H (12%); or not being approved as eligible (18%).

Of those who did not start, 6% (5 clients) did not do so as they considered it to be too expensive, and a further 6% as it was not conveniently located. Nineteen percent did not start as they believe they had health conditions that prevented them from exercising as would be required, or as they felt the standard service would not be sufficiently flexible to accommodate them. Non-engagers reported similar reasons, with 13% not attending due to health limitations, 34% reporting that it was ‘not the right time’ (some of these for medical reasons, others due to lack of motivation), 11% could not afford it, and 10% were put off as they did not want to use a gym.

12% of those who did not start reported having increased their physical activity independently of P2H since referral.

Suggestions for service improvements

A range of suggestions for service improvements were made. These predominantly revolved around the following (elaborated on in Section 2.2);

- improvement of the referral process (i.e., better liaison between GP referrers and the service, quicker turnaround time),
- better provision of information at the referral stage (e.g., more informative leaflets, provision of details of who to contact, easier access to service providers by telephone, more information of what sort of support is available),
- more flexible out of hours appointments,
- free access to those who are unemployed.

2.1.3 Experiences of NON-COMPLETERS and COMPLETERS

Service use

Non completers used the service for an average of 7 weeks (range 1 to 11), and completers for 12 weeks (2 to 12; those who did not report 12 weeks of use reported exercising independently of facilities for the remaining period). 44% of non-completers and 91% of completers felt that P2H was useful in helping them to increase their physical activity levels. Participants attributed the utility of P2H to a range of factors including; increasing enjoyment of physical activity options, noticing an improvement in fitness and walking ability, encouragement from staff, and good affordability. Very few suggestions for improvement were made (only a wider schedule of classes (N=1), more flexibility in gym access (N=1), provision of personal training (N=1), and free membership (N=1)). Reasons for taking up exercise are set out in Table 2.2

Table 2.2 Reasons for wanting to exercise more (%)

	Non-completers	Completers
Lose weight	44	77
Improve physical health	15	44
Reduce medication use	3	21
Improve confidence in performing physical activity	12	41
For rehabilitation	-	7
Improve wellbeing	6	1

Only 18% of non-completers, compared with 75% of completers set themselves an exercise goal; the majority of these revolved around weight loss. Of those who responded to the question on whether or not goals were achieved, 60 % of non-completers and 70% of completers felt they had met, or had partially met their goals.

The service was more likely to meet expectations for completers (83%) than non-completers (41%), although there were no clear consistent reasons for why this was not higher. A total of 29% of clients were using P2H in parallel with Slimming on Referral. Very few (<5%) were using other services, such as stop smoking clinics, cook-it or lifestyle advisors.

Reasons for non-completion/lower use

Clients reported a range of reasons for not making more use of P2H services or facilities (Table 2.3). The most common reasons for both completers and non-

completers were the lack of flexibility of session times (14%), ill health (12%) and exercising elsewhere (i.e., activities that clients felt were unrelated to their engagement with P2H; 8%). Most completers (67%) were continuing with some form of physical activity after the end of their P2H programme, and the average time estimated time spent physically active was 28 minutes per week (range 2-300). Only 26% of non-completers reported being active beyond 12 weeks, and too few clients provided an estimate of minutes to compute a meaningful average.

Table 2.3 Reasons for lack of use/ reduced use of facilities (%)

	Non-completers	Completers	Total
Lack of support	6	5	5
Lack of motivation	3	3	3
Lack of flexibility of session times	18	12	14
Exercising independently	12	6	8
Ill health	18	9	12
Lack of enjoyment	6	5	5
No perceived benefit	3	0	1
Caring commitments	3	1	2
Affordability	0	9	6

Reasons attributed for success

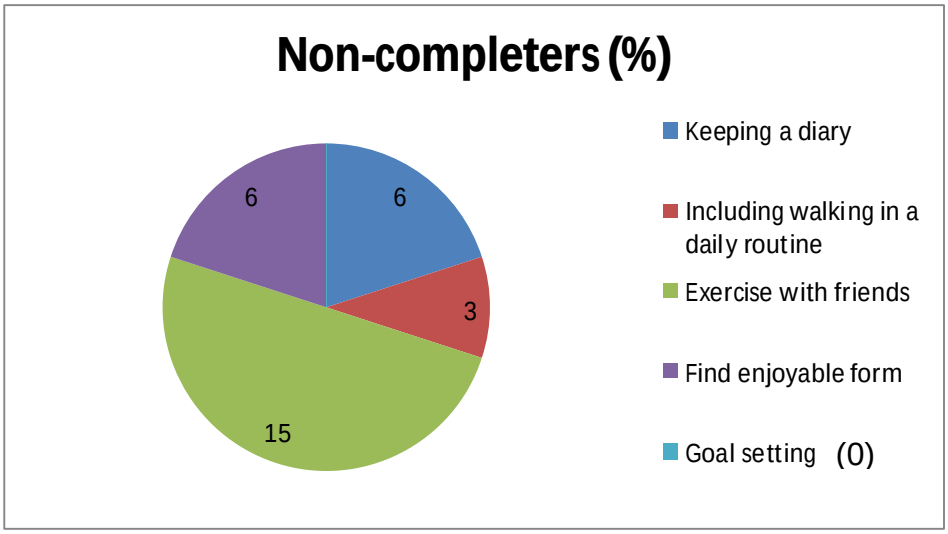
The most commonly cited reason for success differed between completers and non-completers (Figure 2.1);

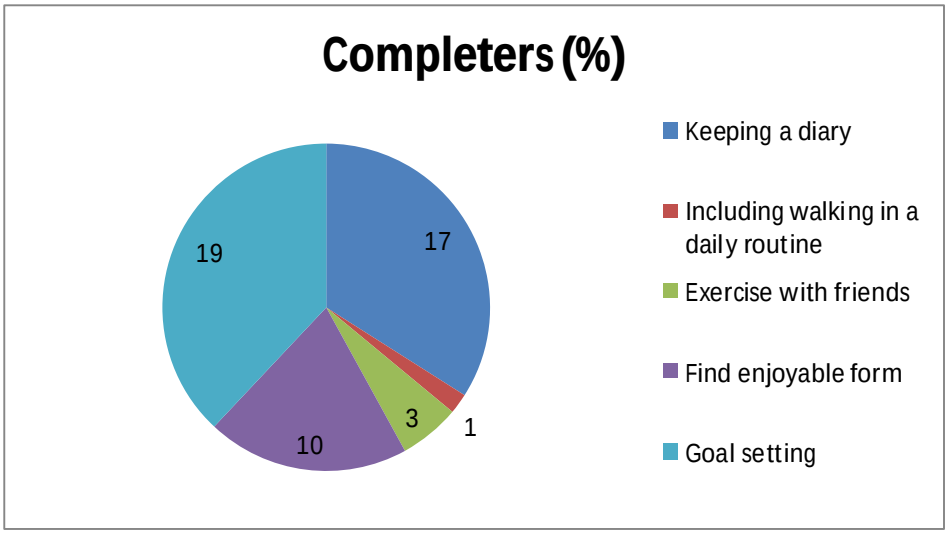
- completers were more likely to cite keeping a diary (i.e., self-monitoring) than non-completers; 17%vs 6%
- completers were more likely to cite goal setting; 19% vs 0%
- non-completers were more likely to cite exercising with friends; 15% vs 3%.

Service satisfaction

Participants had extremely positive views of the staff they worked with. Of those who responded, completers and non-completers found staff professional, polite, on time, easy to understand, friendly and fair (all ratings 99-100%). 78% of non-completers, and 91% of completers who responded to the question (81%) were satisfied with the service; half of non-completers, and 90% of completers would recommend the service to others.

Figure 2.1 Reasons for lack of use/ reduced use of facilities





Suggested service improvements

A range of suggestions for service improvements were made by those who had experience of them. These predominantly revolved around the following (elaborated on in Section 2.2);

- Extension of support (or financial concessions) beyond 12 weeks,
- More support from staff during the scheme (i.e., both proactively, and feeling able to approach them between scheduled appointments),
- More flexible out of hours appointments and range of services that can be used,
- Free access to those who are unemployed.

2.2 A qualitative exploration of the factors associated with service engagement and completion.

Thirty interviews were conducted with members of each of the four user-types identified in Section 2.1. The interviews explored in detail questions relating to why those who did not attend had not followed up their referral, what encouraged or discouraged clients to keep using the service, and how clients feel that the service could be improved.

2.2.1 Why did participants not engage with the service?

Four clients (2 men, 2 women) who had been referred but had not engaged (NE) with the service and ten clients (5 men, 5 women) who had been approved to start but did not attend an initial consultation (DNS) were interviewed about their reasons for not engaging with the service.

Lack of information

Only two interviewees (a NE and a DNS) were unaware that a referral had been made to the Passport to Health service. The remaining 12 interviewees knew when and how their referral had originated. However, many of these interviewees reported inaccurate information about what the Passport to Health service involved. For some this appeared to be due to a lack of information given about the service at the point of referral. NE1 said of the person who referred him (a DHI support worker);

> *"She wasn't too sure if it would include what I wanted to do as far as getting involved with sports and more fitness and things like that, but she said … it was to sort of access more fitness groups and things like that, … I suppose access to the availability of doing more running or bits and pieces like that. … I thought it would be quite useful. I hadn't really heard much about any of it … so I don't, I didn't know what it entailed more than anything else. So other than that, I've just sort of not known what to do as far as accessing it"* (Lines 198-226).

Other interviewees such perceived that P2H involved access to the gym only, and as they were interested in swimming and exercise classes such as Pilates they were not keen to access the service.

> "*They offered me gym … she was pushing me to join the gym and I said I know I'm very limited and my Physio had told me there was so little I could do apart from Pilates type exercise, which I'm already doing … and she didn't really offer me anything else. … I don't think I can take it up."* (DNS8, Lines 136-144).

> *"I would have took the swimming up definitely if they offered me the swimming. Because I've started doing it anyway. But I was never told about swimming, I was just told gym or Slimming World"* (NE2, Lines 177-179).

These women in particular felt they had to choose between exercise referral and other weight management/lifestyle interventions. They said:

> *"Somebody rang me up and said to me that I could either have 12 weeks Slimming World or something or 12 weeks gym or something, or go and see the dietician at the hospital. So I didn't want the gym, and … so I went off to Paulton Hospital and I saw the woman up there a couple of times"* (NE2, Lines 125-128).

> *"A lot of them [people at the carer's centre] have been on Passport to Health, and one of them got paid to go to Pilates. … I think they got vouchers for Pilates, whereas I had [them] for weight loss.* (DNS8, Lines 399-401).

Others felt that their eligibility for Passport to Health was related to use of concurrent slimming services: occurred because she had completed the Counter Weight programme.

> *"Well… the nurse mentioned…um, to get money off to go swimming and things like that and…for um, slimming world, to try and lose some weight. But I didn't get to the consultation for them to tell me what else".* (DNS3, Lines 163-165)

Delays/complications in the referral process

Five of the ten DNS mentioned delays or complications with the referral process as deterrents to participation. For example, DNS1 reported how she had been asked to contact her GP to obtain medical consent to access the service, yet the staff at her GP surgery claimed to have no knowledge of the P2H service;

> *"I phoned up my doctors practice … but the woman I spoke to had a bit of a turn…'oh we don't know anything about that, I'll see what the nurses know' and off she went and I could hear this nattering going on and … the receptionist and the nurses decided they knew nothing about it and if she [presumably P2H co-ordinator] wanted to find out anything she should phone directly and not do it through me. So I think I let her down and I don't know what happened afterwards. At that point I'd lost interest"* (DNS1, Lines 105-112).

DNS8 felt that it was incredibly difficult to access the scheme co-ordinators;

> *"Communication was very difficult, I have to say. And then I eventually got hold of them, and I realised they'd got the number wrong. I don't know if it was my fault, I don't know where it all went wrong there but it did, and we eventually got this talk. But I felt it was all very rushed, trying to show me as a tick in the box situation, and it wasn't going to be like that, you know, because I didn't fit."* (DNS8, Lines 293-297).

Others felt that the lack of follow-up from the P2H consultants at the leisure sites led to their disengagement with the service. Interviewees said

> *"I wanted to use the gym at South Wansdyke. So they uh…phoned me, during the day on my home phone, to leave a message to say they'd phoned and then I phoned them back and never heard from them again. And subsequently I joined South Wansdyke gym…lasted a month…and that was the experience of P2H in that respect"* (DNS2, Lines 166-170).

> *"There was a chap that rang me about having a consultation…so we arranged one for 1 o'clock … but for some reason…I can't remember if I cancelled it or he did…but I never went to that. And nothing… came of it after that."* (DNS3, Lines 145-148).

Others reported having no contact from a Community Activator.

> *"I was told that somebody from, I think it was the sport centre, Aquaterra, would contact me. … but I didn't actually get a follow up phone call to go and have that assessment. … Then I had the problem with my arm, so I thought there's no point in following this up at the moment because I'm not in a position to actually take up that offer anyway, so I didn't chase it up and they didn't contact me, so it was left at that"* (DNS9, Lines 276-286).

Medical complications

Eight of the twelve interviewees (1 NE and 7 DNS) reported having medical conditions or complications which they felt prevented them from accessing the Passport to Health service. Two interviewees reported being diagnosed with cancer.

> *I got as far as an appointment, which I had to call off because it clashed with an unexpected hospital appointment, and then after, as I say, I'd been diagnosed with bowel cancer so I couldn't pursue it, you know. I was at the starting blocks but didn't quite make the off.* (DNS10, Lines 174-178).

Others were undergoing medical investigations;

> *"I was offered the Passport to Health, which I declined at the time, because I had to have investigations done and I didn't want to do anything, because I had to have mammograms, I had to have bone scans, I had to have MRIs, and my arm was hurting, so I'm not going to go through anything while all that's going on, until I know there's nothing seriously wrong".* (DNS9, Lines 201-206).

NE4 discussed how she requested a referral to the service but suffers with bipolar depression. After requesting the referral, she experienced a depressive episode which meant she lost interest in improving her physical activity levels;

> *"When I'm depressed I can't be bothered, because I'm literally struggling to get through the days and do the basics."* (NE4, Lines 187-189)

Three other interviewees were concerned about their physical capability to engage in structured exercise.

> *"I'm still a bit worried… I mean what happens … that it goes again…that's a really big thing for me…if my knee…in the first 6 months it would just give way … I dread my knee going again and uh…because they didn't repair the cruciate ligament"* (DNS2, Lines 80-84).

> *"I knew that I was very limited, and I thought if I go I might be pushed to do something that could really do my back in. And I've had so much lying on my back with my back not able to do anything; I was just very self-protective. I guess if I'd gone for an assessment, but my Physio had already said to me there's really very little you should be doing in the gym, even the cross trainer. So apart from a walking machine, well I'd rather be in the open air walking. Walking on a treadmill, what's the point in that?"* (DNS8, Lines 148-154).

DNS7 was told that by the Passport to Health co-ordinators that they were medically unstable to access the service. *"I wanted to go there but my blood pressure [was too high] … they said in the future if my blood pressure goes down [I can access the service]"* (DNS7, Lines 116-119).

Motivation

Six interviewees reported feeling pressure to do more physical activity, but did not feel motivated to do so:

> *"I feel guilty about it in a way because I ought to be doing these things".* (DNS1, Line 200)

> *"I don't manage to keep the motivation to continue to go. It's not very interesting so it's hard".* (DNS2, Line 63/64)

> *"I know I need to exercise and, I haven't got the will power to sort of do it at home. … by myself … the time issue with getting to work, and in the evening I'm too tired, I don't really want to do anything. Um, so sometimes you just can't be bothered, you haven't got any incentive"* (DNS3, Lines 31-41).

> *"I know I could do better, like I said walking can be a good exercise, but I don't think I'm doing as much as I should do. I could do better. … I don't know, just at the present there's quite a bit going on at the moment. I think it's there in the back of my mind that I'm not obviously doing what I should be doing exercise wise."* (NE3 Lines 281-289).

The remaining six interviewees (2 NE and 4 DNS) had been engaging in regular physical activity. Some interviewees were engaging in physical activity when they were referred to the service.

> *"I've got two boys that I have on the weekends. We usually try and play football or take them to the park and sort of general running around with them. I try to do physical activities, a little bit of weights, go for a three mile run once a week. That's sort of my general week at the moment."* (NE1, Lines 6-9).

> *"Passport to Health is a fairly new thing, that's been around about 3 years. And that's to encourage you to use the leisure centre and gyms and things, yeah. Er, well…. I mean really I've been well, making out my own programmes for the last 7 and a half years."* (DNS6, Lines 616-619).

Whereas others took steps to increase their physical activity after being referred as they perceived P2H was not suitable for them. DNS2 joined a gym but did not manage to use it for more than one month. However, others had been maintaining regular physical activity independently;

> *"I do water aerobics on a Monday and on a Thursday we come down and do lengths. And then we'll either do one on a Friday, Saturday or Sunday"* (NE2, Lines 68-69).

These findings suggest that lack of engagement is not always due to lack of motivation, but may also be due to patients taking independent steps to improve their physical activity levels.

2.2.2 Do those that access the service have a different referral experience to those that don't engage?

A total of six non-completers (NC; 2 men and 4 women) and ten completers (C; 3 men and 7 women) were interviewed.

In general, service-users appeared to have fewer problems with their referral experience compared with those who did not engage. The most common complaint about the referral process was the amount of time it took before they were able to access the service. Most interviewees understood that this was due to co-ordinators dealing with a high number of referrals, for example;

> *"Took a bit of time from going to the doctors to actually getting to the gym, but I think there's a lot of people yeah, on this programme"* (C2, Lines 61-62).

However, others found it frustrating as they were keen to get started. C7 and C8 stated;

> *"The doctor had to send a form to someone and I had to wait probably about four weeks to get a call from that someone to ring me up and say, explain the Passport to Health. And then they told me to ring wherever I wanted to go,*

which was Keynsham … and make an appointment to see someone from there. So I rang up. Because of their shift work there and they cut their hours as I started I had to wait about three weeks before I even got in there. So already from the start … I kind of think yes let's do it, I want to do it tomorrow, but already I'd lost about eight weeks by trying to get to the leisure centre because of waiting for someone to be available". (C7, Lines 103-113).

"[It took] three weeks, four weeks, but I think I was like a bad space mentally, and so then it just seemed like an endless amount of time". (C8, Lines 91-92).

NC7 was very unhappy with his experience of the referral process;

"Somebody was supposed to make an appointment, but nothing happened. So in the end I telephoned the number, the Bath number I suppose it is isn't it? And spoke to somebody there, and they said oh hasn't somebody contacted you? Well they didn't. My wife signed up for it as well, and nobody ever contacted her". (NC&, Lines 224-232).

This ultimately led to his disengagement from the service (he attended his first appointment and a gym induction only). Because his wife was not contacted, he decided to purchase some gym equipment for them both to use at home.

2.2.3 What are people's experiences of the Passport to Health scheme?

Despite failing to complete the 12 week programme, five of the seven NC were still very positive about their experiences of using P2H. The following aspects of the service were considered important to service users:

Having a personal relationship with a specific advisor

Eleven of the sixteen service users (4 NC's and 7 C's) mentioned the importance of seeing the same advisor each time;

*"That [the level of support] was brilliant. I saw [my advisor] for my initial assessment and then I saw him, we made appointments and I met him at regular times through the programme, and in the gym there was always somebody there that would help me with the equipment or to talk to". (*NC2, Lines 130-134).

"I had a personal trainer, and she helped me out with all what I had to do on each equipment; she picked out the equipment for me to go on. Going on the treadmill was a little bit … But after I got used to it, I could do it on my own sort of thing. It took a little more to do it on my own, but I'd have [my advisor] to help me. But most of it was a piece of cake really. … [my advisor] arranged for me to come down here [the sports centre], to have a look at the gym down here. … So that's how I come [here], through [my advisor] really [she] taught me it all". (C4, Lines 87-102).

> *"Having [my advisor], the trainer, there, monitoring me at that point made the gym feel like a lot more of a friendly place. And now I'm still going to the same gym, and she's still there and she says hello and she sees me, and she does some instructor of classes, which I've been to a couple of her classes. So it's just kind of made me realise that it's important to me and that the gym is a friendly place and could be sociable"* (C8, Lines 371-376).

NC6 did not have a strong relationship with her P2H advisor, as she felt as she was only going to the odd class. It is possible that interviewees that access the gym will develop a stronger relationship with staff. Moreover, others felt that when they stopped attending they struggled to contact the advisor to discuss their options;

> *"I tried to contact the girl who I saw initially but … I don't know what's her title, she's the one that assessed me when I first went, but I just couldn't get hold of her, because I kept saying I'm sorry I missed it but she didn't get back to me".* (NC3, Lines 374-380).

Flexibility

The flexibility of the scheme was important to the interviewees. For example;

> *"The flexibility in the gym was fine because you could go in any time at all, there was no restrictions, so that was perfectly, I mean you could fit that in any time because it was open to you all the time".* (NC2, Lines 121-123).

However, NC2 felt that exercise classes were not flexible as pre-booked popular classes which were often full. Others felt that session times were not flexible enough;

> *"I would have liked to have gone in the morning, very early in the morning because I'm an early riser, so I could have walked to town and then done my exercises and then come home by bus, but you're not allowed to start, I can't remember the times, I think the earliest is half ten".* (NC3, Lines 229-233).

> *"To all the times I could go were the times I wanted to be at home. So I think it was seven o'clock in the evening or something like that, or after seven o'clock in the evening. And it wasn't convenient."* (NC7, Lines 256-262).

Completers in contrast reported relatively few problems with the flexibility of the service; only two completers mentioned it. C8 felt that gym times were not always convenient but she this was not necessarily a problem because she could access another activity;

> *"I found it difficult to get to the gym sometimes in the periods that they said, because obviously they're trying to use the gyms when it's not at capacity, you know, not at busy peak periods, so it was like a slightly sort of mid-afternoon slot that you could use and so on. So that did restrict you a bit. But if you could organise yourself to do it, then—and you could go swimming at any time and you don't have to use the gym"* (C8, Lines 179-184).

Safety

The safety of using the gym environment was also important to service users. C1 felt that the programme gave him the opportunity to engage in exercise knowing that he was in a safe controlled environment with trained staff. This was also mentioned by C8 *"I'm not very good at running outside on the road or anything because I don't always feel safe, so I want to be like in a contained environment and I can just switch my brain off"* (Lines 34-36). However, a major concern for C7 (who was not very happy with her service experience) was that advertised Passport to Health gym sessions were not always manned by a member of staff.

> *"It does say like supervised gym, you know, and you think there's no supervision, that's why I went to the reception to say excuse me, and that was what I was told. And three times that happened, which I didn't think was acceptable. Because if there was somebody there, let's just say somebody was there that had had a heart attack previously and they were sent there to get fit again or give them confidence, I wouldn't have been happy if I'd had a heart attack in there on a machine with no-one around me. There was the public around you but not a staff member, which I thought should have been there"* (C7, Lines 338-345).

This lack of support accompanied with her perception that gym sessions were open to the public and hence no different to if she accessed it independently lead to her being disgruntled with the programme.

Providing an introduction to an alien environment

For many interviewees the Passport to Health provided an introduction to an alien environment. Three C and one NC mentioned their apprehension about accessing a gym;

> *"It took away the sort of worry about going to that particular gym, because you envisage that everybody at the gym is going to be thin and sort of in Lycra and ultra-thin. At that particular gym they weren't, because there were a lot of people there on the Passport to Health, and everybody was made equally welcome. So that was quite a nice side effect, I think".* (NC2, Lines 217-221).

> *"I was very scared because I've never been in a gym in my life, ever. And it's, in some ways it's controlled isn't it physical activities, its controlled, you have to go in, you have to do things, so I- I- I was not used to that, and I was a bit, I was very, I was scared of all the machines as well, yeah I must admit I was scared".* (C2, Lines 50-53).

Four interviewees felt that another benefit of Passport to Health was the opportunity to try different activities (such as yoga, pilates, aquafit) at a reduced price.

2.2.4 What impact do participants feel the service have on their physical activity levels?

Many of the NC reported in engaging in regular physical activity independently of P2H, with only two interviewees reporting that they were inactive. However, only one of the NC was engaging in regular structured activity;

> *"Once a week we do the gentle exercise class which is for 45 minutes, and that's a bit like aerobics. … and then perhaps twice a week as well as that we go to the gym and we use the treadmill, the bicycle. I like the rowing machine. It's usually somewhere between 30 and 45 minutes. Sometimes it might be a bit longer, and as I say we try and do that at least twice a week. It would be nice if we could do it four or five times a week, but we haven't quite built up to that yet".* (NC4, Lines 117-128).

Others were performing daily at home exercises or had incorporated walking into her lunchtime routine. This suggests that being a non-completer does not necessarily mean that they have disengaged from physical activity.

Completers seemed to be engaged in more structured physical activity compared to NC. This varied in intensity and structure from attending the gym 3 times a week to exercising at home and walking for ten minutes daily. For the most part (7/10), C's were engaging in structured activity (gym session, classes and swimming sessions). Six of the Cs interviewed took out gym membership upon completion of the programme. Only one C (C4) was currently not engaging in regular physical activity and this was due to an impending operation; however, she expressed the intention to join the gym once she had recovered.

Part 3 –Content of Consultations and Indicators for Improvement

3.1 Introduction

An intervention's (or service's) success is primarily judged on the outcomes it produces. However, while good outcomes are essential, it is also important to consider the processes through which these outcomes are brought about in order to establish how a service works to ensure the important elements are retained going forward (Craig, Dieppe, Macintyre et al., 2008). As part of a drive to improve the design and reporting of interventions, detailed taxonomies of 'behaviour change techniques' have been developed to clearly set out the specific ways in which we can support people to change their behaviour. Examples of these include action planning, promoting self-monitoring, providing general encouragement and goal setting amongst others. These taxonomies complement existing tools which allow us to assess the delivery *style* of behaviour change interventions, such as whether they are client-centred. To date, such tools and taxonomies have primarily been used for academic purposes as a means of specifying what is included in research interventions. However, these resources may also be useful in practice to establish what exactly a service is offering, whether all clients receive a similar service, and could be used as part of the monitoring and evaluation of services to highlight areas for development and improvement. The advantage of describing services using these standard terms is that they can then be accurately compared with services elsewhere, and mapped to the evidence base of techniques shown to be important in promoting physical activity and other health behaviour change.

The aims of the present study were to;

1) Identify the components of behavioural support received by patients taking part in P2H,
2) Explore fidelity to the service protocol
3) Explore convergence with evidence-based best practice.

We planned to approach this through a two-step process of:

a. using behaviour change taxonomies to describe session content and delivery style in a standardised fashion, and
b. comparing the core components of standard care identified against current evidence-based behaviour change techniques.

3.2 Method

All six advisors (employed in leisure facilities or as community activators) were invited to take part by email and provided written consent to participate in the study prior to the commencement of data collection. In line with ethically approved procedures, clients attending consultations selected for observation were provided

with details of the study, reassured that their treatment would not be influenced in any way if they chose not to take part, and were given the opportunity to opt out. If clients did opt out, observation of the subsequent session with that particular advisor was attempted.

We aimed to observe 20-40% of consultations over one calendar month. To minimise advisor burden and vary sampling across day/time of day, every second consultation was observed with each advisor until the sample was met.

The researcher was present for each observation to ensure that recordings took place and to obtain contextual observations for assistance in data interpretation, but did not make any contribution except to respond to direct questions if necessary.

3.2.1 Coding frameworks

Initial patient consultations were observed, audio recorded and then coded using four coding frameworks. The frameworks were selected to assess adherence to employer expectations (P2H protocol checklist), the content of consultations (the CALO-RE behaviour change technique checklist), and style of consultation (Behaviour Change Counselling Index [BECCI] checklist).

P2H protocol

Each of the eight areas of behavioural support included in the intended P2H protocol was coded as being present or absent. The key areas were described as; (1) greeting and client introduction, (2) explanation of what to expect from P2H, (3) discussion of the referral context (e.g. why they have been referred to the scheme), (4) discussion of lifestyle & medical issues, (5) assessment of current physical activity levels, (6) assessment of biometric baseline measures (weight, body fat percentage, body mass index, waist circumference and blood pressure), (7) assessment of self-reported psychosocial baseline measures (confidence, self-esteem, perceived health status), and (8) goal setting. The full checklist is provided in Appendix 2a.

Behaviour Change Techniques

The CALO-RE taxonomy (Michie et al., 2011) defines 40 behaviour change techniques applicable to physical activity and dietary interventions. Behaviour change techniques are the strategies that advisors can use to try and bring about change in people's propensity to change, for example by boosting motivation, changing attitudes and increasing self-belief. Techniques are each mapped to theories of behaviour change, allowing us to specifically target the many different factors that are known to underpin successful behaviour change. For example, theory suggests that taking up and adhering to an exercise regime requires motivation and better self-regulation. Techniques to boost motivation could include providing information about the health consequences of continuing with a risky health behaviour, and helping them to understand what changing their behaviour would mean to their own, personal health risk and/or subsequent

quality of life. Techniques to boost self-regulation may include planning ahead what a person can do in a tempting situation, or when they experience a lapse in their planned behaviour (i.e., coping planning). Each technique was recorded as present or absent (for a full list of techniques coded, see Appendix 2b).

Delivery Style

The nine-item BECCI checklist was developed to assist healthcare professionals in talking to clients about behaviour change. It measures health professionals' competence at delivering patient-centred behaviour change counselling (Lane, et al, 2005). The degree to which a person's performance is patient-centred for a session as a whole is rated on a 5 point Likert scale ranging from 0 (*not at all*) to 4 (*a great extent*) (for the full checklist, see Appendix 2c).

3.2.2 Comparison with the evidence base

As no definitive resource on best practice currently exists, recommendations for current best practice were assessed through reference to which behaviour change techniques are reliably associated with significant behaviour change in recent meta-analyses relating to physical activity and weight loss interventions (Michie et al., 2009; Olander et al., 2013; and Teixeira et al., 2012; Ng et al., 2012).

3.3 Results

A total of 22 consultations (22% over a one month period) were observed and recorded, including a minimum of two from each advisor. Consultations had a mean length of 44 minutes (range; 17 to 67 minutes).

3.3.1 Adherence to P2H protocol

There was considerable variation within advisors with regard to which, and how many of the P2H protocol elements were delivered (Figure 3.1). The average (median) proportion of elements delivered was 63% (IQR= 45%-76%), which masked more substantial variation for some individual advisors (e.g., a range of 0-100% adherence for Participant 6). The researcher's field notes suggested that variation between consultations appeared to result in part from advisors tailoring their approach to the characteristics of different clients rather than random variation in day to day performance; however the strategy for tailoring was not formalised or made explicit.

Adherence to different elements of the protocol between advisors was also varied (Figure 3.2); adherence was highest for the recording of psycho-social measures (such as self-efficacy and motivation; present in 100% of consultations) and discussing reasons for referral (Median=82%, IQR= 79%-83%), but considerably lower for physical activity assessment (Median= 59%, IQR= 39%-65%) and goal setting (Median= 52%, IQR= 38%-65%).

Figure 3.1: Variation in adherence to P2H protocol within advisors

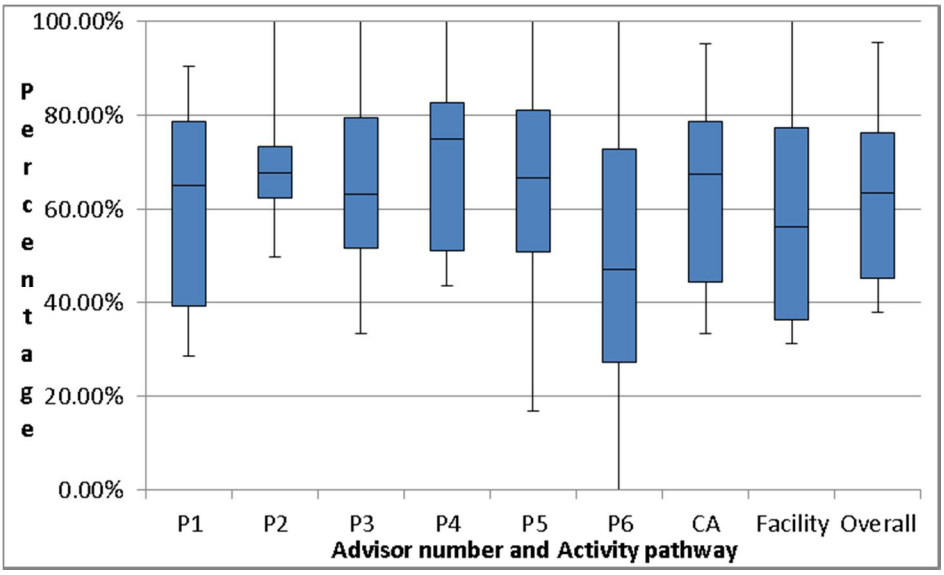
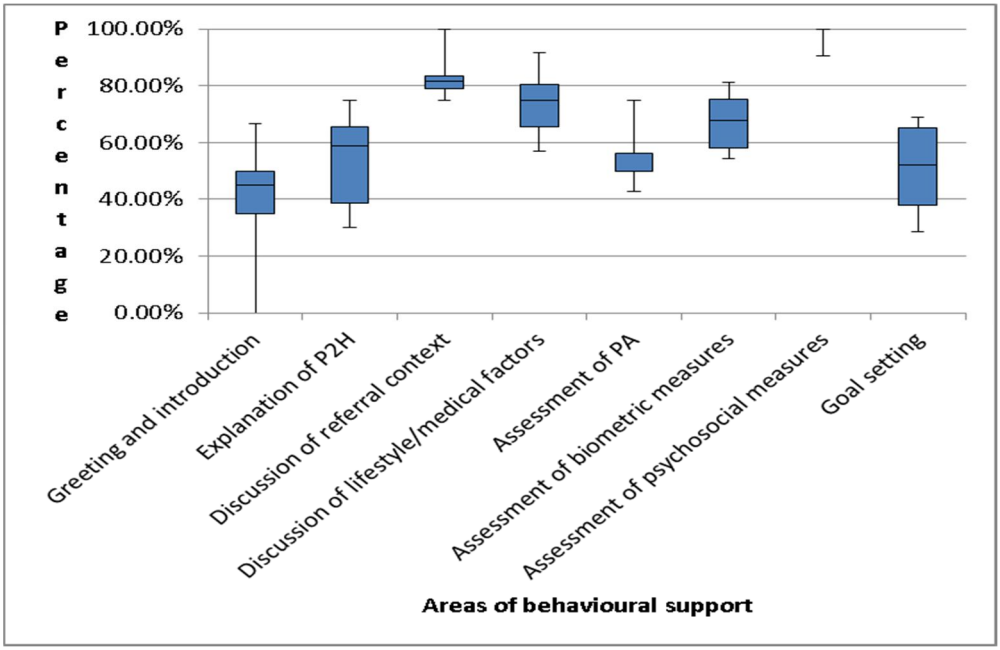


Figure 3.2: variation in delivery of areas of behavioural support across consultations



3.3.2 Use of behaviour change techniques

The two behaviour change techniques delivered most consistently (in 86% and 82% of consultations respectively) were *providing information about where and when to perform the behaviour* and *setting outcome goals.* These two techniques were used by all six members of staff, with four advisors using these techniques in 100% of their observed sessions. *Providing information on the consequences of behaviour to the individual* was the only other technique used by all six advisors, but only in 55% of consultations.

3.3.3 Consultation style

The BECCI checklist showed that most of the advisors had the ability to deliver aspects of the intervention in a client-centred format (i.e., had a score of 3 or 4; Table 3.1). However, high ratings were not consistently recorded for these advisors across consultations; field notes suggested that in more extreme cases (i.e., when advisors appeared least client-centred) coincided with dealing with more challenging clients. Overall, mean practitioner scores were around 1 (minimal) and 2 (to some extent) showing that advisors' style was not client-centred.

3.3.4 Within- and between-advisor variability

The majority of the variability in delivery was within the same advisor; that is, there was a low level of consistency in what the same advisor might deliver to different clients. Variation between advisors was lower, in that the elements delivered most often by one advisor were the same components most often delivered by other advisors.

3.3.5 Comparison with the evidence base

In interpreting Table 3.2, we note that not all listed techniques may be relevant to an initial exercise referral meeting, so it was not intended that all techniques significantly associated with positive physical activity outcomes should be incorporated in standard care. Comparison with the evidence base can provide information on how important current content is, and where improvements could be made.

The two most commonly observed techniques delivered by advisors (i.e., *provide information on when and where to perform the behaviour* and *relatedness support*) were not found to be associated with success in the evidence-base (Table 3.2). One strategy found to result in lower levels of physical activity (*prompt generalisation of target behaviour*) was observed in 23% of consultations. All other techniques provided in more than half of consultations were supported by research evidence as effective in promoting positive change.

The most highly supported technique from the research base (*self-monitoring*; Michie et al., 2009) was implemented very infrequently (18% of consultations), and was not observed at all in consultations delivered in a facility setting. Similarly, advisors exhibited few techniques that support the development of self-efficacy or competence (evident in 9% of consultations, and not at all in facility settings), which is consistently associated with positive changes in physical activity behaviour (Ng et al., 2012; Teixeira et al., 2012).

Finally, while goal setting was delivered in the majority of consultations, its focus was variable; given that the intervention focussed on exercise promotion to initially sedentary individuals, we expected patients to set process goals in the form of progressive exercise targets. However, the majority of goals set were outcome orientated in relation to desired weight loss (outcome 71% vs process 29%). This

Table 3.1 Record of client-centred approach taken by advisors

BECCI CHECKLIST		Facility route			Community Activators			*Within advisor variability	*Between advisor variability
		C1, n =7	C2, n =2	C3, n=5	C4, n=2	C5, n=3	C6, n=3		
		Mean scores (and range)			*Mean scores (and range)*				
Agenda setting	Invitation to talk about behaviour change	1.4 (1-2)	1.0	1.0	2.0	2.3 (2-3)	1.3 (0-2)	1.00	0.07
	Demonstrated sensitivity to talk about other issues	3.1 (3-4)	1.5 (1-2)	2.0 (1-3)	2.0	3	2.0 (0-3)	1.47	0.75
	Section Average	*2.3 (1-4)*	*1.3 (1-2)*	*1.5 (1-3)*	*2.0*	*2.7 (2-3)*	*1.7 (0-3)*		
The why and how of behaviour change	Talk about current behaviour/status quo	1.9 (1-3)	1.5 (1-2)	2.2 (1-3)	3.0	3.0 (2-4)	2.0 (1-3)	1.53	0.46
	Talk about the positive and negative aspects of change	1.9 (1-3)	1.5 (1-2)	1.6 (1-2)	1.5 (1-2)	3.0	2.3 (1-3)	1.32	0.67
	Feelings about behaviour change	1.7 (1-3)	1.5 (1-2)	1.4 (1-2)	2.0 (1-3)	2.7 (2-3)	1.7 (0-2)	1.19	0.28
	Empathic listening statements	3.0 (2-4)	1.0	1.8 (1-3)	3.5 (3-4)	3.0 (2-4)	2.0 (0-3)	1.34	0.48
	Summaries to bring together what the participant says	0	0	0	0	0	0.7 (0-2)	1.00	0.07
	Section Average	1.7 (0-3)	1.1 (0-2)	1.4 (0-3)	2.0 (0-4)	2.3 (0-4)	1.7 (0-3)		
Overall	Acknowledges challenges that the client faces	2.1 (1-3)	1.0	1.6 (1-2)	3.0	2.3 (2-3)	2.0 (0-3)	1.14	0.59
	Providing information that is sensitive to concerns	2.1 (1-3)	2.0	1.4 (1-2)	2.5 (2-3)	3.0	2.3 (1-3)	1.16	0.57
	Convey respect to individual choice about change	2.7 (2-4)	0.5 (0-1)	2.2 (2-3)	3.0	2.3 (2-3)	1.3 (0-3)	1.45	0.43
	Exchange ideas about how to change current behaviour	1.0 (0-2)	1.5 (1-2)	1.6 (1-2)	1.5 (1-2)	2.3 (2-3)	1.7 (0-3)	1.25	0.11
	Section Average	*2.0 (0-4)*	*1.3 (0-2)*	*1.7 (1-3)*	*2.5 (1-3)*	*2.5 (2-3)*	*1.8 (0-3)*		
	Overall mean practitioner score	*1.9*	1.2	1.5	2.2	2.5	1.8		

Notes: C = exercise referral consultant; n= number of consultations recorded; * a larger number indicates greater variation (poorer consistency)

Table 3.2: Matrix of effective behaviour change techniques for promoting physical activity for comparison against observed P2H content

Technique	Supporting evidence	% frequency in P2H consultations	% of P2H advisors
Provide information on where and when to perform the behaviour	no significant effect	86%, N = 19	100% N=6
Goal setting (outcome)	***	82%, N = 18	100% N = 6
Autonomy support[1]	*	82%, N=18	83%, N=5[±]
Intrinsic goal framing	**	77%, N=17	100%, N=6
Extrinsic goal framing	*	68%, N=15	67%N=4
Provide information on consequences of the behaviour to the individual	***	55%, N = 12	100%, N = 6
Goal setting (behaviour)	***	46%, N =10	83%, N = 5
Action planning	no significant effect	46%, N = 10	83%, N = 5
Plan social support/social change	***	36, N = 8	%, 67% N = 4
Time management	no significant effect	36%, N = 8	83%, 67% N = 5
Prompt generalisation of target behaviour	*NEGATIVE EFFECT**	23%, N = 5	50%, N = 3
Barrier identification/problem solving	***	18%, N = 4	50%, N = 3
Prompt self-monitoring of behaviour	***/*	18%, N = 4	33%, N = 2
Model/demonstrate the behaviour	***	9%, N = 2	33%, N = 2
Teach to use prompts/cues	***	9%, N = 2	33%, N = 2
Prompt practice	***	9%, N = 2	33%, N = 2
Competence support[1]	*	9%, N=2	33%, N=3[±]
Facilitate social comparison	***	9%, N = 2	33.3%, N = 2
Information on the consequences of the behaviour in general	***	5%, N = 1	17%,N = 1
Set graded tasks	***	5%, N = 1	17%,N = 1
Prompt rewards contingent on successful behaviour	***	5%, N = 1	17%,N = 1
Prompt self monitoring of behavioural outcomes	***	5%, N = 1	17%,N = 1
Provide instruction on how to perform the behaviour	***	5%, N = 1	17%,N = 1

Notes: * small effect size/p<.05, ** medium effect size, *** large effect size/p<.001; [1]relates to client-centred style, [±] numbers of advisors delivering more than 50% of the time

may have been led in part by patients' motives for enrolling on the programme (i.e., to lose weight), and reflect that overweight was one of the key referral criteria.

Other strategies supported by evidence but not commonly delivered included; *planning social support, barrier identification*, and a *discussion of consequences of changing behaviour*. Not all of these may be appropriate or acceptable by advisors given the time available and importance of leaving space to be client-centred, but may be worth consideration.

Further, the findings demonstrate how interpretations of behaviour change techniques may also vary, and may benefit from clarification or further training. For example, *goal setting* was delivered in most consultations, but varied widely in its focus (e.g., weight loss or physical activity, short or long term), and in how it was approached (i.e., client or advisor generated). Research suggests that goals that (i) are set with and by clients rather than for them, that (ii) focus on process (i.e., behavioural) rather than weight outcomes, and that (iii) are set as graded tasks are all associated with better long term behaviour change. The majority of goals set in the present observations were outcome orientated in relation to desired weight loss (outcome 71% vs process 29%), although this may in part result from taking a client-centred approach. Nonetheless, clarification of the distinctions between types of goals and their predictive efficacy to advisors may be useful in helping them to make informed choices about how to work with clients.

3.4 Implications

The findings demonstrate considerable variation in each advisor's approach, and suggest that patients are not all receiving similar support. Advisors appear to have the skills to implement a wide range of techniques and adopt a client-centred, autonomy supportive approach, but with a few exceptions did not appear to apply these in a consistent manner. To some extent this may be a positive and appropriate finding, indicating that exercise referral specialists are using their expertise to tailor the intervention they deliver to the specific individual they are with. However, while it is appropriate to rely on professional's discretion in this process, without clear guidance and protocols it is possible that the options selected for each occasion were based on advisor comfort and confidence in raising issues as much as a result of an informed client-centred choice, and could be improved by greater direction.

The content analysis suggested that several well supported behaviour change techniques were largely absent from consultations, and may be useful additions to the protocol. Future work would be interesting to explore whether standardising the content and style of initial consultations, potentially with the addition of evidence-based techniques, results in enhanced long-term physical activity outcomes for service-users.

Part 4 – Efficacy of Passport to Health

A pre- post study of the efficacy of P2H in improving physical activity outcomes was conducted to assess the outcomes of the programme across different types of patient and areas of the service. To ensure validity of the physical activity data, physical activity was recorded over a 1-week period (minimum of 4 days wear, including one weekend day) using an Actigraph GT3X accelerometers. Accelerometers capture all waking physical activity (excluding swimming, as they can't be worn in water), providing information on both intensity and duration.

4.1 Participants

One hundred and seventeen participants (78 female, 39 male) enrolled in the trial as part of the standard Passport to Health (P2H) programme over the period from September 2012 to April 2013. This represented a 48% response rate from the 246 eligible new clients approached. The majority were white British (92%). Participants were distributed throughout Bath (43%), Midsomer Norton and Radstock (39%), and Keynsham (18%).

Indicators of socio-economic status indicated that the sample represented people living with higher levels of social deprivation than BANES (Table 4.1); this is consistent with monitoring data reported in Part 1, so indicates the sample of people enrolled on this study are largely representative of the population of P2H users as a whole. Thirty eight percent of participants were in work, 21% were retired, and the remainder were unable to work through ill-health or disability (21%), were unemployed (10%), students (4%) or full-time carers for children or adult family/friends (7%).

Table 4.1: Socio-Economic Characteristics of the Sample

		Frequency	%
% (under 60s) in receipt of free prescriptions*		53	60
IMD quintile	1 (most affluent)	8	7
	2	13	11
	3	21	18
	4	30	26
	5	29	25
Level of Education	No qualifications	22	19
	Level 1 or below	3	2
	Level 2: GCSE/ O Level	31	27
	Level 3: A levels/ vocational	18	15
	Higher education undergraduate degree	36	31
	Postgraduate qualifications	7	6

Notes: *from a total of 89 participants aged under 60

The majority of participants were referred to the service through meeting the entry criteria for CHD risk (87; 74%), with the remainder referred for mild to moderate depression (30; 26%). At the outset, participants referred for CVD risk had a higher BMI and higher blood pressure than those referred to E4D, but were less likely to smoke (Table 4.2). However, participants referred for depression also reported an average BMI in the obese category, and had other indicators of heightened CVD risk relative (e.g., elevated blood pressure). As expected, participants referred for mild depression reported poorer quality of life (QoL). Participants reported an average of 38 minutes of moderate to vigorous (MVPA) activity a day; while this appears to indicate that participants were sufficiently active according to government guidelines, this is partly as a result of the measure, which includes all momentary engagement in MVPA, not only purposeful 'bouts' of exercise. As such, it does not equate to the requirements of government guidelines, but is interpreted to provide an accurate baseline for considering change. Participants took fewer than the recommended 10,000 daily steps, and spent nearly 60 hours of time in sedentary activities per week (i.e., 8.4 hours/day) during waking hours.

Table 4.2: Baseline Health Risk Profiles

	CVD referrals (N=87)		E4D referrals (N=30)		Diff.
	Range	Mean (SD)	Range	Mean (SD)	
Age	19-80	50 (14)	17-65	42 (12)	[a]
Weight (kg)	49.2-188.0	100.5 (24)	47.1-121.2	83.9 (20)	**
BMI	20-56	36 (7)	18-48	30 (7)	**
Systolic BP	97-208	144 (19)	108-167	129 (13)	**
Diastolic BP	66-130	94 (14)	68-106	89 (10)	[a]
Units alcohol/week	1-105	23 (29)	0-64	20 (22)	
Non Smoker N (%)	36 (41)		7 (23)		**
MVPA average mins/day	0.5-129	38 (30)	3-96	38 (24)	
Sedentary average hours/day	5.7-11.9	8.4 (1.2)	328-622	514 (70)	
Steps/day	1072-18,237	6287(3223)	2030-12423	6186 (2765)	
Quality of Life[b]	1-5	2.8 (0.8)	2-5	3.2 (0.7)	**

Notes: *p<0.05, **p<.01, ***p<.001; [a] neared significance, p<=0.1, [b]a low score indicates better QoL, MVPA= moderate to vigorous physical activity, BP = blood pressure, SD = standard deviation

Most participants were using the facility route (80%), with 16% using community activators, and 4% choosing group exercise activities.

4.2 Physical activity outcomes following engagement in passport to health

4.2.1 Primary outcomes on completion (12 weeks)

Fifty-three of the initial 117 participants (45%) attended their 3 month follow-up, which is similar to rates achieved through standard (less intensive) monitoring data. However, 39 participants did not provide usable baseline accelerometer data, so our physical activity results are based on the results of the 78 remaining participants.

Changes in main outcomes are reported in Table 4.3. We analysed outcomes first only reporting for those who attended their follow-up appointment, and second, on a 'last observation carried forward' basis that allowed us to include all those who started, and provide a more conservative estimate of effects (i.e., assuming that those who did not attend a follow-up appointment had not changed since the last known measurement; baseline in this case).

Table 4.3: Change in key outcomes after 12 weeks

	Range of change	Average change attenders only (N=31) Mean (SD)	Average change intention to treat (N=78) Mean (SD)
Weight (kg)	-16 to 9	-1.0 (4.8)[a]	-0.5 (3.3)[a]
BMI	-4.4 to 3.3	-0.3 (1.6)[a]	-0.1 (1.1)[a]
MVPA (mins/day)	-32 to 51	8.7 (18)*	3.5 (12)*
Sedentary time (mins/day)	-165 to 105	-11.6 (69)	-4.6 (44)
Steps (per day)	-3013 to 4601	1279 (2012)**	1292 (1837)***
Systolic BP	-38 to 31	-0.3 (15)	-0.1 (10)
Diastolic BP	-19 to 58	-0.1 (13)	-0.1 (9)
Overall Quality of Life [b]	-2 o 1	-0.6 (0.8)***	-0.3 (0.6)***

Notes: SD = standard deviation; *p<0.05, **p<.01, ***p<.001; [a] neared significance, p<=0.1, [b]a low score indicates better QoL, MVPA= moderate to vigorous physical activity, BP = blood pressure

Both methods of analysis indicate that P2H results in significant improvements in MVPA, steps, and quality of life after the 12-week programme. Changes to weight and BMI neared significance.

4.2.2 Primary outcomes at follow up (52 weeks)

Forty-five of the initial 117 participants (85% of those completing the 12-week programme) attended their 52 week follow-up, 31 of whom provided valid accelerometer data. At one year:

- 68% of patients spent less time in sedentary activity than they had at referral
- 37% had increased their daily step count since baseline
- 36% had increased their time spent in moderate to vigorous physical activity

Overall changes in main outcomes are reported in Table 4.4 (using the same 'last observation carried forwards' analysis). The findings indicate that some, but not all of the improvements in Passport to Health outcomes persisted to one year. Participants retained positive outcomes in relation to waist circumference, steps taken per day, and quality of life. Other outcomes had largely returned to baseline.

Table 4.4: Change in key outcomes after 52 weeks

	Range of change	Average change [a] Mean (SD)
Weight (kg)	-28 to 13	-0.1 (5.2)
BMI	10 to 4	-0.03 (1.8)
Waist circumference (cm)	-26 to 17	-1.2 (6.3)*
MVPA (mins/day)	-69 to 81	0.2 (13)
Sedentary time (mins/day)	-119 to 610	2.4 (48)
Steps (per day)	-3083 to 10,420	298 (1260)*
Systolic BP	-38 to 31	2.2 (17)
Diastolic BP	-19 to 58	-0.2 (9)
Overall Quality of Life [b]	-3 to 2	0.4 (1.0)*
Activities of daily living	-3 to 2	0.5 (1.1)**
Health perceptions	-3 to 2	0.3 (1.2)*
GP visits	-5 to 4	-0.6 (1.3)**

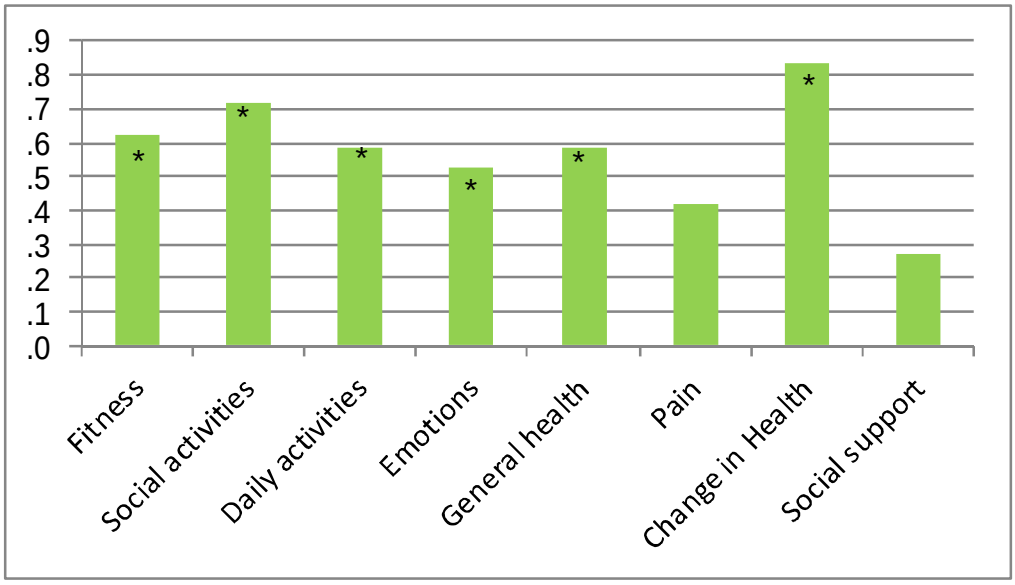
Notes: *p<0.05, **p<.01, ***p<.001; [a] last observation carried forward, [b]a low score indicates better QoL, MVPA= moderate to vigorous physical activity, BP = blood pressure, SD = standard deviation;

4.3 Psychological changes and outcomes.

4.3.1 Health Related Quality of Life

Participants reported a significant improvement in their quality of life following P2H. Looking at the quality of life outcomes in more detail (Figure 4.1), this improvement was most strongly reflected in the domains of; social functioning (i.e., being able to take part in social activities), emotional functioning, fitness, ability to carry out daily activities and their overall health. The only domains which did not show improvement were those in relation to pain, and access to social support.

Figure 4.1: Change in Health Related Quality of life scores following P2H



Notes: response scale ranges from 1-5, * = changes are statistically significant

After 1 year, participants reported better quality of life in relation to their fitness, health, ability to carry out the activities of daily living, and pain. All domains had moved in a positive direction, even where they fell below significance (perhaps due to the smaller sample size at 1 year).

4.3.2 Motivation and confidence

We also looked at whether the changes in participant's physical activity levels were due to increased confidence and motivation as a result of taking part in the programme. There was a significant improvement in motivation for exercise immediately after completing the programme (mean overall change = 1.9 on a 5 point scale, $p<.05$), that was still present at 1 year. In particular, participants were less likely to be exercising simply because they had been told to by others (i.e., external regulation), and more likely to exercise because they enjoyed it. We had predicted an increase in motivation based on how important participants perceived

the exercise to be, but while this increased to some degree at the end of the programme there was no benefit at 1 year.

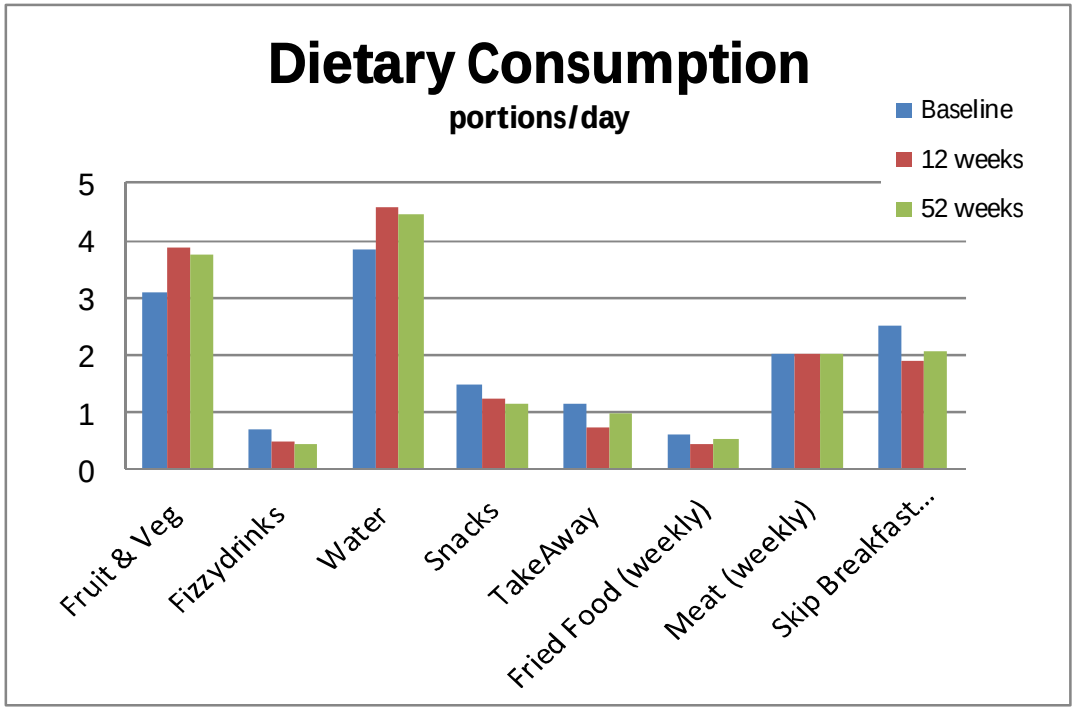
Participants did not report any improvement in their confidence to carry out physical activity in the face of barriers (e.g., weather, being busy) at either 12 weeks or 1 year.

4.4 Dietary outcomes

Diet was measured through a brief food frequency questionnaire. As this was not an objective measure, the findings provide an indication rather than definitive assessment of dietary changes made by study participants. Outcomes are shown in Figure 4.2.

Overall, at the end of P2H participants ate more portions of fruit and vegetables per day (mean increase = 0.7 portions, $p<0.001$), drank more glasses of water (mean increase = 0.3 portions, $p<0.001$), and ate fewer take-away meals (mean weekly reduction of 0.3 occasions, $p<0.001$). Reductions in snack intake (mean reduction = 0.4 portions per day, $p=0.08$) and consumption of fried foods (mean reduction = 0.2 occasions a week, $p=0.08$) neared significance. These findings indicate that engagement in P2H may have encouraged participants to engage with other positive lifestyle changes.

Figure 4.2: Changes in frequency of consumption of selected dietary components



After 1 year these differences were no longer significant (with the exception of fewer people reporting skipping breakfast), although there was a trend for people to retain a marginally healthier diet across all dimensions.

4.5 Sub-group analyses

4.5.1 Referral category

Participants were as likely to complete the programme in either referral group (54% CVD vs. 60% E4D). However, objective physical activity data was available for only 7 of the depression group at 12 weeks (and 10 at 1 year), so the differences in physical activity outcomes between groups should be interpreted with caution. However, changes in physical activity outcomes appeared to be consistent across referral categories at 12 weeks (Table 4.5, Figure 4.3).

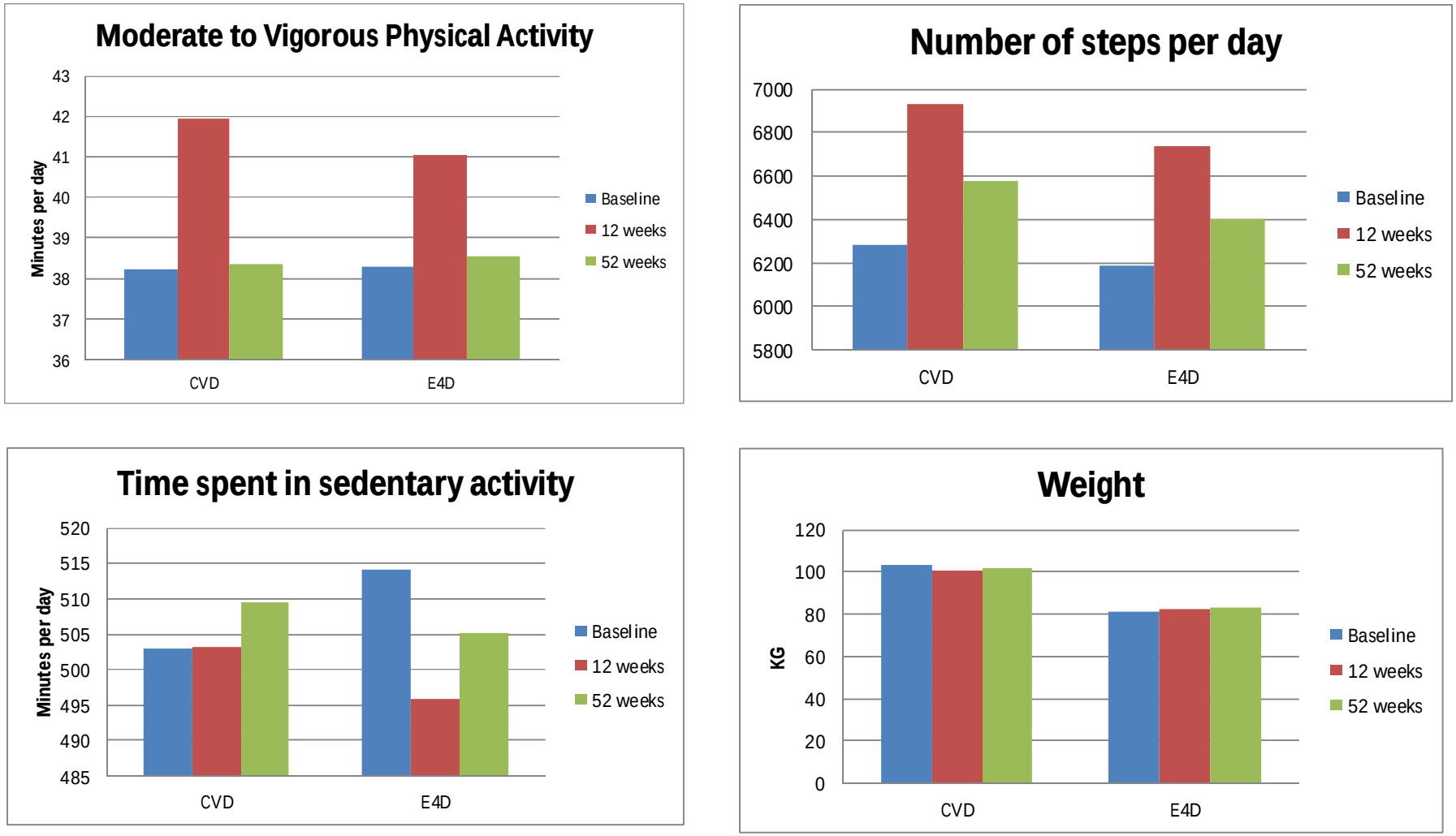
Despite similar changes in physical activity, participants attending due to CVD risk lost significantly more weight than those in the depression group, who appeared to gain a small amount of weight. Diet was not a focus of the Passport to Health programme, but this finding indicates that CVD risk participants were adapting their diet in addition to becoming more active (or at least not compensating for the increased energy used through physical activity). While some trends were observed suggesting that bigger dietary changes were taken by participants in the CVD group in support of this claim (particularly in relation to a reduced number of take-aways eaten), no changes in the individual elements of dietary content were significant.

Table 4.5: Differences in Outcomes for CVD vs E4D referrals (changes from baseline)

	12 weeks		52 weeks	
	CVD (N=24-38) $^{\perp}$	E4D (N=7-15) $^{\perp}$	CVD (N=24-38) $^{\perp}$	E4D (N=7-15) $^{\perp}$
Change in MVPA (mins/week)	62.9	73.1	0.1	0.2
Change in sedentary time (mins/week)	29.1	-55.5	6.3	-8.9
Change in steps (steps/day)	1216	1495	326	217
Change in weight (kg)	-2.1	1.7	-0.6	1.4
Change waist circumference (cm)	-1.5	-0.1	-1.8	0.3*
Change in QoL	0.7	0.6	0.4	0.3
Change in motivation	1.7	2.3	-0.5	3.1*
Change in self-efficacy	-0.2	0.8	-0.3	1.2*

Notes: $^{\perp}$ lower numbers available for exercise scores, higher for weight outcomes. Due to low numbers, non-parametric (Mann-Whitney) tests were computed, p<*p<0.05, **p<.01, ***p<.001, MVPA= moderate to vigorous physical activity, SD = standard deviation, QoL= quality of life

Figure 4.3: Changes in physical activity and weight outcomes pre and post P2H



Notes: CVD – Cardiovascular disease risk group, E4D – exercise for depression group

A similar proportion of participants from each group completed their one year follow up (38% CHD vs 40% E4D). At this point, changes in physical activity were lower for both groups, but there still appeared to be no difference in benefits across groups. While there was no longer a significant difference in weight loss (the CVD group having largely regained the weight lost at 12 weeks), but CVD group did report a significantly lower waist circumference, and thus metabolic health gain. While there was still no difference in change in quality of life between groups, one year after referral people referred for depression appeared to experience a greater increase in their motivation for exercise and self-efficacy for continuing to be active.

4.5.2 Pathway

Fifty-four participants using the facility route provided measurements at 12 weeks (58% of those who started), nine through the community activator group (47% of those who started), and two through the group activities arm (40% of those who started). Given the small numbers in non-facilities groups, statistical analyses are not robust. However, while the graphs suggest some variation, these differences were not significant, suggesting that the changes recorded between groups were within the range expected given the variation between participants within each group (Figure 4.4).

4.5.3 The influence of participant characteristics on outcomes

We conducted tests to assess whether greater increases in MVPA and step count were predicted by participant characteristics.

Baseline level of physical activity and health

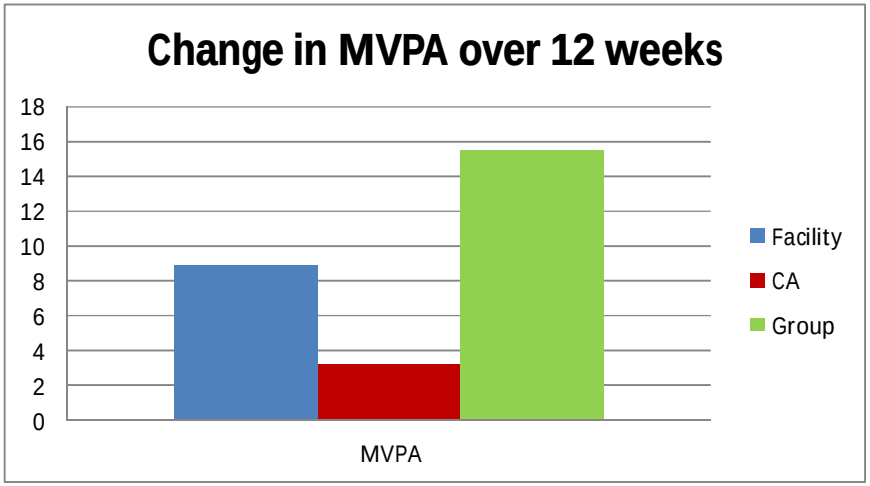
Taking up physical activity is much more challenging to people who are very inactive to start with, or who have health issues that may prevent them from exercising comfortably. However, it may also be 'easier' to make a difference if starting from a lower level, in that there is more scope for significantly increasing your activity from a starting point of no activity. Therefore we tested the impact of being 'healthier' at the outset or P2H.

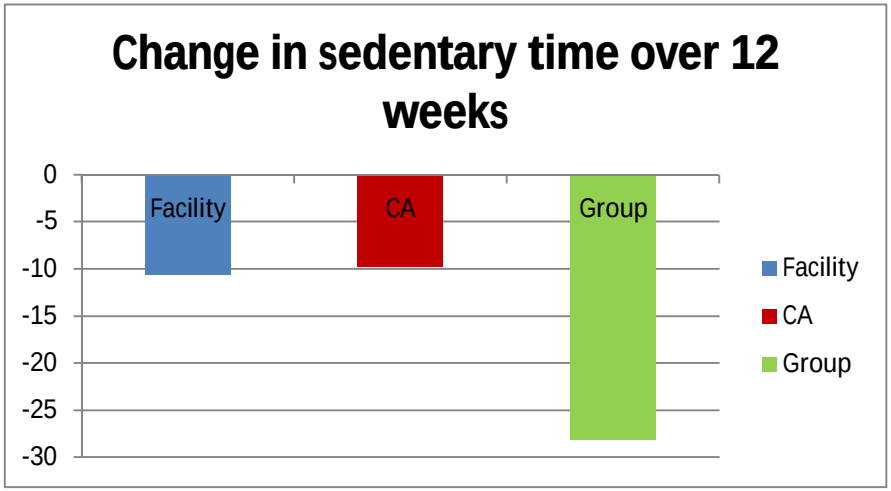
Sedentary time: Participants who spent more time sedentary at baseline reported a greater reduction in time spent in sedentary activities at both 12 and 52 weeks.

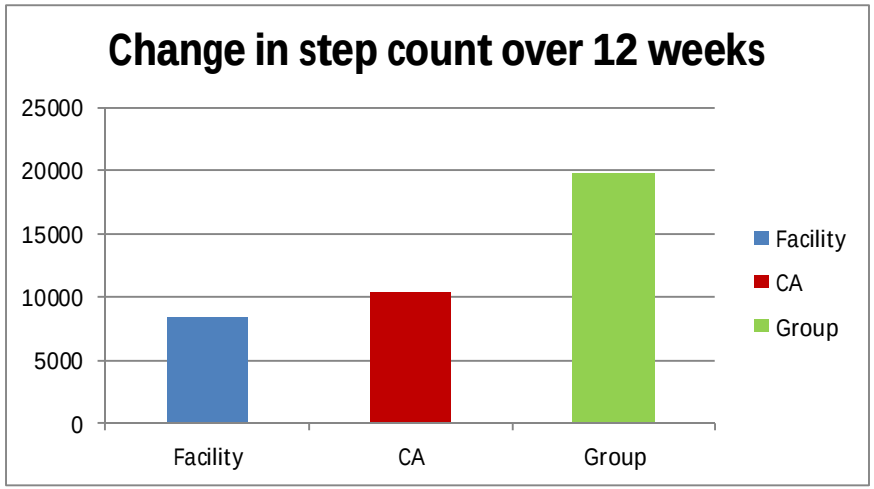
MVPA: Greater increases in MVPA (at 12 and 52 weeks) were reported for those who started off less active (i.e., more sedentary, fewer steps and lower levels of MVPA).

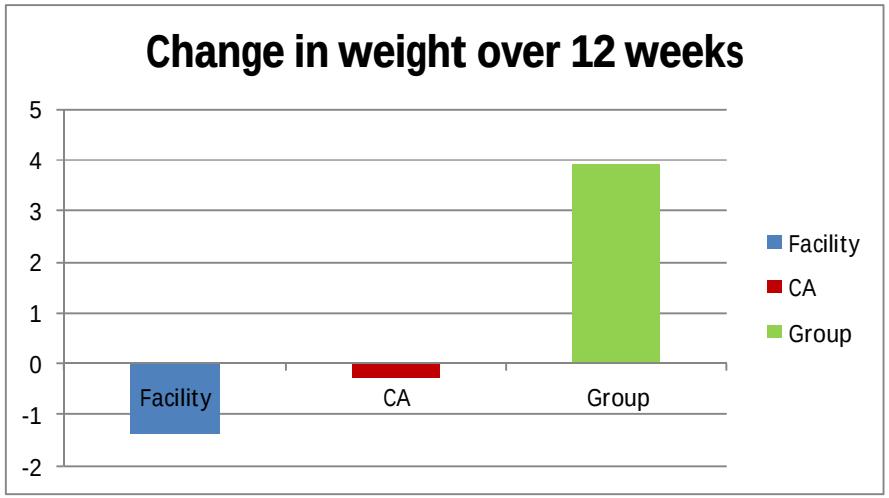
Quality of life: There was a slight (non-significant) trend for more active participants to report more improved QoL by 12 weeks, but this did not persist at one year. On both times it was measured,

Figure 4.4: Changes in physical activity and weight outcomes for different pathways









people with better QoL at baseline reported greater improvements over 12 and 52 weeks.

Weight loss: Weight loss was not predicted by any baseline physical activity or weight characteristics over the short term (12 weeks). However, people who started with a lower weight were likely to have lost more weight one year later. Having a higher BMI at the start of the programme was associated with losing more weight.

4.5.2 Participant characteristics

4.5.1 Age, gender and educational level

We explored the impact that participants' gender, age, level of education, level of functional limitation (i.e., perceived ability to carry out daily activities) smoking status, alcohol intake and socio-economic status had on their physical activity outcomes.

Age and functional ability were the only predictors of study outcomes, but only up to 12 weeks. Older participants experienced greater reductions in waist circumference and greater increases in physical activity (MVPA and step count). People reporting greater functional limitation showed poorer physical activity outcomes (MVPA and daily steps).

Participants with lower levels of education reported greater improvements in motivation, potentially as the P2H advisors provided the opportunity to learn more about the benefits of exercise for health ($p<0.05$). There was also a trend for people with a lower level of education to report a poorer outcome for time spent in sedentary activities (that is, they were more likely to increase, and less likely to reduce their time spent in sedentary behaviour; $p=0.06$).

Women and men reported similar outcomes for changes to MVPA, sedentary activity, and weight, but a difference in changes to daily step count; after the 12 week programme women increased their steps by 913 steps per day to men's 2996 ($t=2.3$, $p<0.05$). There was also a trend for women to experience a smaller improvement in QoL (mean change = -0.5 vs -0.9; $p=0.07$).

4.5.4 Changes in psychological factors

Behaviour change theories suggest that people who experience an improvement in their motivation for change, and self-efficacy in overcoming barriers to physical activity, are more likely to adopt and sustain increases in exercise. However, the improvements in physical activity achieved were not associated with improvements in motivation or self-efficacy for exercise. This suggests that there may be potential for greater impact on behaviour if further improvement can be brought about in these theoretical mediators of change.

Weight loss at 12 weeks was significantly associated with participants' perceptions of the support provided by exercise referral consultants. People who perceived their advisor to offer them greater support in making informed decisions, choice and helped them to take control for themselves (i.e., who took a client centred approach), and those who felt the advisor provided support to boost their sense of being able to achieve outcomes, experienced better outcomes for waist circumference and BMI. Conversely, people who felt that their ability to choose, or their sense of being capable of making the changes was undermined (i.e., absence of client-centred approach), reported poorer weight-related outcomes.

People who increased their self-efficacy for physical activity, and felt supported by their consultant in this, reported better outcomes for QoL.

4.6 Discussion

The analysis of the objectively measured outcomes of P2H shows it to be an effective service in promoting moderate to vigorous physical activity (and step count), and quality of life. These outcomes were equivalent for people referred for cardiovascular risk or mild depression, and although participants showed some drop in activity levels between the end of the programme and one year follow-up, overall participants still took approximately 300 more steps per day than they did prior to embarking on P2H.

Passport to Health also showed some improvement in body composition; weight loss at 12 weeks neared significance and at 1-year follow up the average waist circumference was 1.2 cm less than on referral. Neither weight loss nor change in waist circumference was predicted by engagement in physical activity, so were indicative of dietary changes that participants had undertaken alongside taking up exercise.

Quality of life significantly improved by taking part in P2H, both at 12 weeks and one year. It was expected that improvements in QoL would be particularly observed in people referred to the programme for mild depression; however this was not the case. This may be in part, as the domains of QoL that were most consistently improved related to people's perceptions of their physical health and fitness, and ability to carry out the activities of daily living (although this latter concern may relate as much to psychological health limitations as physical health). Mental health outcomes (i.e., depression ratings) were not available, but may have been useful to explore. However, it was a very positive finding that people with poor mental health were still able to engage with, and benefit from, P2H to the same degree as other patients.

4.7.1 How were these effects brought about?

It was predicted that better physical activity outcomes would be brought about by boosting participants' motivation and self-efficacy, two factors commonly cited in

research as important at promoting sustained behaviour change. However, this was not found to be the case. In Chapter 3 we observed that most initial meetings with exercise referral consultants did not contain behaviour change strategies that are theoretically predicted to promote a sense of competence and self-efficacy, and as such the findings here that self-efficacy (confidence) was not increased by P2H may be expected.

A considerable body of research literature highlights the key role of self-efficacy on promoting people's behaviour change over the short and long term. This is in part, as once someone has confidence that they can exercise even in challenging situations (e.g., bad weather, other attractive options), they are more able to stick to their plans and be flexible in finding alternatives when needed. The promotion of self-efficacy may be a useful addition to initial consultations, as a means of improving the programme's outcomes over the longer term (see Recommendations in Chapter 8).

Motivation was enhanced by participants enjoying exercise more, with fewer reporting strong extrinsic reasons for taking part (i.e., simply because they had been told to by a doctor/spouse/other). However, improvements in motivation did not predict increased physical activity. This may be because not all types of motivation were influenced, and in particular exercising because of its personal importance and relevance was not increased. Theory suggests that this form of reason for self-regulation is crucial in maintaining long term participation, so may represent another area for service development. Motivation can be improved through providing environments that support a person's sense of being in control, and feeling able to tackle the actions they will need to undertake. This again may suggest that support for self-efficacy, alongside a client-centred approach could be of benefit in promoting longer term sustained change.

Part 5 – Referrer Perspectives on Passport to Health

Most evaluations of exercise referral schemes focus on the outcomes for patients who access services, placing little emphasis on the initial referral process. However, as the gatekeepers into primary care services, professionals are an important group to consider. Their approach to referral, and their own experience of how the system works, along with their interactions with patients may be important in understanding and boosting rates of referral and uptake. This section examines the pattern of referrals from within B&NES, and examines the experiences of referrers to highlight recommendations about how this process can be improved.

5.1 Which are the largest sources of referral to P2H?

During 2012/13, 834 patients were referred into Passport to Health. The majority (89%) were referred from a GP practice, whereas the remaining 7%, 2% and 2% were referred by community services, hospital services and other non-B&NES services respectively.

Table 5.1 displays the number of referrals cross-tabulated by GP surgery during 2012/2013. The top three GP surgery referrers were St Chad's, Hope House & Elm Hayes who referred 64, 53 and 42 patients respectively; whereas, Riverside, Catherine Cottage and the University of Bath Medical Centre made the least referrals (6, 3 and 1 respectively).

The percentage of referrals relative to the practice population numbers was also calculated. This was a crude measure as not all patients registered with a surgery would be eligible to be referred; however it allowed for practice size (and capacity to make referrals) to be considered. Despite having the highest frequency of referrals, St Chad's and Elm Hayes did not refer comparable numbers of their population (0.6% and 0.7% respectively). The University of Bath Medical Centre and Chew Medical Centre made the lowest number of referrals relative to population (<0.1% and 0.1% respectively). Low referral rates from Chew Medical Centre may be expected as there are fewer services available locally.

Uptake of the referral by patients varied widely between GP surgeries. Mean uptake was 70% (range 50-100%) and the mean completion rate was 45% (range 25%-100%).

Table 5.1 Passport to Health referrals by GP practice during 2012/2013.

Referrer	Number referred	Percentage of practice population (excludes under 18's)	No. patients starting P2H (Uptake rate)	No. patients completing P2H (Completion rate)
St Chads	64	0.6%	42 (62%)	10 (32%)
Hope house	53	1.0%	41 (77%)	15 (48%)
Elm Hayes	42	0.7%	26 (62%)	10 (40%)
St Mary's	40	1.0%	29 (73%)	14 (70%)
St Michaels/ Beehive	40	0.7%	26 (65%)	9 (50%)
Temple House	40	0.7%	22 (55%)	7 (41%)
Hillcrest	39	0.8%	30 (79%)	10 (53%)
Oldfield 45	39	0.4%	26 (67%)	4 (25%)
Westfield	37	1.2%	27 (73%)	9 (45%)
Westview	35	0.6%	22 (63%)	5 (36%)
No 18	33	0.6%	21 (64%)	9 (56%)
Pultney Street	32	0.3%	25 (78%)	10 (56%)
Somerton House	32	0.6%	24 (75%)	10 (63%)
St James'	32	0.4%	21 (66%)	10 (53%)
St Augustine	30	0.4%	24 (80%)	8 (50%)
Newbridge	26	0.4%	22 (85%)	9 (53%)
Fairfield Park	24	0.3%	19 (79%)	4 (29%)
Weston/Rush hill	20	0.4%	15 (75%)	5 (63%)
Batheaston	15	0.3%	11 (73%)	4 (44%)
Grosvenor	15	0.6%	8 (53%)	1 (14%)
Widcombe	15	0.3%	11 (73%)	3 (33%)
Combe Down	14	0.2%	8 (57%)	2 (29%)
Cameley & Harptree	12	0.2%	11 (92%)	5 (50%)
Chew Med	7	0.1%	7 (100%)	0%
Riverside	6		3 (50%)	1 (50.0%)
Catherine Cottage	3	0.2%	2 (67%)	0%
University medical centre	1	< 0.1%	1 (100%)	1 (100.0%)
Total	**746**		**524 (70.2%)**	**175 (45.1%)**

5.2 What are the barriers which prevent healthcare professionals making referrals?

Two mixed methods studies were conducted to explore healthcare professionals' experiences of referring into P2H.

5.2.1 Qualitative interviews with healthcare professionals

A list of all GP surgeries in BANES was collated, and stratified by practice size and referral rates to P2H. GP surgeries with high, moderate and low rates of referral were contacted to see if healthcare professionals involved in the referral process would be willing to take part in the research. Only six health professionals from four practices volunteered to be interviewed (1GP, 3 practice nurses, and 2 health care assistants).

An interview schedule was drawn up through consultation between the researcher and members of the P2H Knowledge Transfer Project Steering Group, which included a practice nurse involved in making patient referrals. Questions were based around understanding how health professionals approach health promotion in general practice and any barriers they face in referring to P2H specifically. Interviews were transcribed verbatim and analysed using thematic analysis to identify recurrent themes within the data.

Findings

All interviewees believed that health promotion was important, beneficial to their patients and part of their role. However, they reported common barriers that prevented them from raising health promotion issues within consultations including lack of time, having to adhere to a consultation agenda, and perceptions of a lack of patient motivation within the patient to change.

> *"I think it's an excellent place for health promotion, people come into the surgery when they are ill, with a chest infection or something like that...and their health and how they feel is at the top of their minds really...it would be nice to offer patients more time"* (P5, HCA)

> *"One of the things [barriers] structure wise is its too short. And another reason is that we are an illness service, not a health service in primary care, generally that's how it is. And that's partly because of the way its set up and partly because of the way that people come to us, when they are ill not when they are well, and partly because people come in with an agenda of getting that problem fixed"* (P6, GP)

> *"Lots of people come in and say things like my doctor said I had to come and see you because I'm overweight, and that to me is an indicator that that person doesn't feel they are overweight or it has come as a shock to them"* (P5, HCA)

Health professionals often felt frustrated that while they were aware of the potential benefits of health promotion advice, these barriers meant they were not always able to a discussion around making lifestyle changes during their consultations.

In terms of barriers to referral which P2H may be able to influence, two themes emerged. Firstly, health professionals received little to no feedback from or about patients they had referred to the service. This meant they were not confident in knowing how effective the scheme was, which they believed impacted on their ability to be authentic in motivating patients to participate:

> *"We don't get any feedback, so that's really hard cause you refer this patient for something and we don't hear back from anybody...we don't hear how they've done really - well, unless the patient comes in to see us, but then you are asking them to go there, come here, go there..... For us it [feedback] would mean a difference in care here...we could also then reinforce what is being told...If everybody is saying the same thing it's all about reinforcement and hopefully it will go in, but there isn't any sharing of information."* (P4, PN)

All health professionals felt that they would benefit from having regular feedback about the patients they referred including how they were doing, what their personal plan was, whether they completed the scheme, and what the results were. They also felt that it would be helpful to receive regular updates via email so they could be informed on what is going on with the programme.

Secondly, referrers felt that they did not have enough information about the programme itself and what it entailed for patients. This was often accompanied by misinformation and confusion about how P2H differed from other lifestyle services available, and made it difficult for health professionals to explain the programme to patients. *"I think I'm right in saying it's a 12 week program, um exercise and diet based in gym work and things like that, that's probably all I really know about it"* (P2, HCA).

5.2.2 Quantitative online survey with healthcare professionals

An online survey consisting of 5 open-ended questions was devised and marketed to referrers as '*5 questions in 5 minutes'* to encourage them to take part. The survey aimed to supplement the qualitative findings by assessing if the views expressed were widely held, and was run during November 2013. Thirty-four responses were received.

Q1: What do you know about Passport to Health (P2H)?

- 9 referrers (27%) gave an accurate description of the exercise referral scheme e.g. that it was an exercise referral scheme, or that it was for 12 weeks and involved subsidized access to sports facilities.

- 2 referrers (6%) gave a fairly accurate description with slight inaccuracies such as the programme lasts for 6 weeks or that it contained some dietary input.
- 15% of referrers described the programme in terms of its anticipated outcomes e.g. to improve fitness, increase physical activity or achieve weight loss.
- 7 referrers (21%) perceived P2H to be an umbrella term for lifestyle interventions such as slimming on referral, dietary advice, smoking cessation support & exercise on referral.
- 9 referrers (27%) gave vague answers or did not answer the question correctly e.g. 'good' or 'I refer people to the service'.

Q2: If you do refer patients to Passport to Health, what medical conditions or risk factors prompt you to refer?

- 94% of respondents refer patients because of obesity
- 79% refer to help with certain medical conditions; most commonly cardiovascular disease, hypertension or diabetes
- 74%refer patients due to depression
- 18%refer patients because they are inactive
- 12%refer patients because they need help to quit smoking or improve their diet
- GPs also reported referring patients due to financial hardship, because they were carers, or because they initiated the referral.

Q3: Are there any factors that prevent or discourage you from referring patients to Passport to Health?

Table 5.2 displays the reasons why GPs would not refer to Passport to Health. The most common reasons given for not making a referral were perceived lack of patient motivation, or that physical activity was inappropriate due to existing medical conditions. Other responses included that the referral form was hard to complete or that they were unsure of the inclusion criteria. A total of 28% of respondents did not perceive there to be any barriers which would impede them from making a referral.

Table 5.2: Perceived barriers to referral

Reason	Percentage (n)
No barriers	27% (9)
Lack of patient motivation	21% (n=7)
Existing health conditions – pa not suitable (e.g. back problems, lung & heart conditions, BMI too high, osteoarthritis & too elderly/frail)	21% (n=7)
Poor location of facilities	6% (n=2)
Already slightly active	3% (n =1)
Overweight but not obese (yet!)	3% (n = 1)
Lack of knowledge/unsure of inclusion criteria	9% (n = 3)
Scheme not flexible e.g. times	3% (n = 1)
The referral form (hard to complete/unsure of the latest version)	12% (n = 4)
If clients have tried the scheme before	3% (n = 1)
Lack of childcare facilities	3% (n = 1)
Inclusion criteria are too restrictive	3% (n =1)

Q4: What could we do to encourage you to refer more patients?

Table 5.3 lists the suggestions made by healthcare professionals to improve referral rates. Many suggestions related to the provision of more information about the scheme and referral process to healthcare professionals and patients, and information to professionals in relation to outcomes. These suggestions mirrored the points made by the interview sample. In addition, GPs suggested relaxing inclusion criteria, allowing online referrals, and providing more information about the inclusion criteria would also be useful.

Table 5.3 What do GP's nurses think would increase referrals?

Reason	Percentage (n)
More info about the scheme	18%(n =6)
Promote service to patients	15%(n = 5)
Relax inclusion criteria	12% (n = 4)
Online referrals	12%(n = 4)
Allow patients to self-refer	9%(n=3)
Reminder for us to refer (e.g. league table/newsletters)	9%(n = 3)
Provide information to give out to patients	6%(n =2)
Provide feedback on referrals – are they appropriate, do they start and outcomes	6% (n =2)
Allow health care assistants to refer	3% (n=1)
More flexibility with session times	3% (n = 1)
Lack of knowledge/unsure of inclusion criteria	9% (n = 3)
Scheme not flexible e.g. times	3% (n = 1)
Promote successes in the press	3% (n = 1)
Extend scheme beyond 12 weeks	3% (n = 1)
Reduce waiting times	3% (n = 1)
Provide family support	3% (n = 1)
Free crèche	3% (n = 1)
Help to engage patients	3% (n =1)
Use Chew Valley Gym	3% (n =1)

Q5: Do you have any feedback on the referral process to Passport to Health or any suggested improvements for the scheme in general?

- 21% believe the referral form needs to be altered; however there was no consensus on this, some asked for more space to fill in, and others asked that it be made shorter
- 12% think P2H needs increased promotion
- 12% think we need to change the criteria around who can refer to allow health care assistants to refer or to allow self-referral if patient is medically stable
- 9% have concerns about the length of time it takes for patients to start the scheme

- 6% think that there should be better communication with surgeries and more available info on the scheme
- 3% think the scheme should be longer than 6 weeks (suggesting inaccurate knowledge)
- 3% would like to make an online referral
- 3% think the scheme should offer greater flexibility in terms of session times
- 3% suggested developing resources to give to patients at the point of referral
- 3% felt patients should be given a second chance if they have been previously referred
- 3% want to us to include Chew Valley

5.3 Summary

The interview and survey data mirrored the findings from patients reported in Part 2, confirming that health professionals are aware of being somewhat confused as to what P2H is. They believe this is problematic as they cannot provide patients with adequate advice about the service, or confidently confirm that it is appropriate for them. The suggestions for improvement from referrers to the service included;

a) Provision of up to date information about the content of the exercise referral scheme, including differentiation from other lifestyle services.

b) Provide literature that can be given to patients to explain the service to them.

c) Provision of regular feedback about the service performance, number of referrals, uptake and completion rates and individual patient progress.

d) Provision or training about the scheme inclusion criteria and referral process, and/or clearer information on who is eligible and who may benefit.

e) Simplification of the referral form and the processes involved.

f) Increase the range of health and allied professionals who can make referrals.

Part 6 - An Economic Evaluation of Passport to Health

An economic evaluation was conducted to obtain the cost per quality adjusted life year (QALY) of P2H based on outcomes at 12 weeks. This provides values to compare against the threshold for cost-efficacy of services recommended by the National Institute for Health and Clinical Excellence (NICE). NICE recommend a threshold of £20 000-£30 000 per QALY (NICE, 2008).

The analyses were based on the following costs per person:

Table 6.1: Costs of the service per person

		Total costs (evaluation sample)
Administrative costs per person	£11.25	£1316.25
Costs of services: Facilities route (n=95)	£50 start + £38.75 if complete*	£9500
Community activators (n=22)	Average £210 per person	£4620
Total Cost		£15436.25
Average cost per person		**£131.94**

*a conservative estimate was made based on the assumption that all clients complete.

6.1 Outcomes

Based on an intention to treat analysis (i.e., no change was assumed for patients who did provide data at the second measurement point) there were significant increases in steps and MVPA (as reported in Part 4). There were some differences between the people who did and did not provide data after 12 weeks; women, older people and those who were lighter at baseline were more likely to provide complete data. As such, the missing data at 12 weeks are unlikely to be 'missing at random', suggesting there may be some bias in the findings if the physical activity outcomes differ according to these baseline characteristics. We cannot estimate the extent of this effect with the numbers we have, but need to note this when interpreting the findings.

Table 6.2 shows the costs per increased activity unit and QALY for the sample involved in the P2H evaluation. Based on 12 week data, the cost per QALY is £11,892.22. When people referred for CHD risk are analysed separately, this cost reduces to £7,106.92 per QALY, predominantly as this group were less active to start with.

The cost per QALY compares favourably with NICE thresholds of £20-30,000. However, it is likely to be an overestimate of the cost-efficacy of the service as the model assumes that changes in physical activity will be maintained. We cannot accurately estimate this due to low numbers providing physical activity measures at 1 year, but we know from the data we have that physical activity decreased over this time. As such, the cost per QALY will increase as maintenance of physical activity decreases.

Table 6.2: Cost efficacy analysis

Costs per increased minute of MVPA per person	
Facilities route*	
Community route	£28.01
	£73.16
Costs per increased step per person	
Facilities route*	
Community route	£0.13
	£0.07
Expected QALY gains (per person)**	
CHD	0.0065
Stroke	0.0002
Type II diabetes	0.0044
All three disease states	0.0111
Average cost of QALY gain per person	**£11892.22**
CHD route only:	
Increase in those active	11%
Increase in QALYs:	0.0186
Average cost of QALY gain per person	**£7106.92**

Notes: *assuming full cost of completion, **Decision threshold = 20mins/day

6.2 Comparisons with other exercise referral schemes

A useful comparator for interpreting this finding comes from an evaluation of the cost effectiveness of all available published evaluations of exercise referral schemes led by Brunel University in 2011 (Anokye et al., 2011, Pavey et al., 2011). While the same means of calculating cost effectiveness was used in this work as in the economic analysis of P2H, direct comparisons should still be made with caution as; (i) the inclusion criteria for the duration of study follow-up was solely that exercise was sustained 'long enough to attain a health benefit'; thus some studies were shorter, and others longer than the P2H evaluation, and (ii) all studies included reported only self-reported physical activity. Self-reported physical activity typically provides an overestimate of activity levels, and is less accurate (e.g., would have

less verified consistency between two measurement points) compared with the objective measures used to evaluation P2H.

Notwithstanding these caveats, the overall estimate of cost per QALY in sedentary individuals with a diagnosed medical condition through this systematic review process was £20,876. It was further estimated that there is a 50% probability that referral schemes are cost-effective at the NICE lower bound for NHS services (£20,000 per QALY), and 88% probability they are cost-effective at the upper bound (£30,000 per QALY). While costs per QALY were lower for obese and hypertensive sedentary patients, as is comparable to our findings, the cost per QALY for people with depression was lower than for other groups (£8414 per QALY). The cost per QALY gained was higher for this group in the P2H sample.

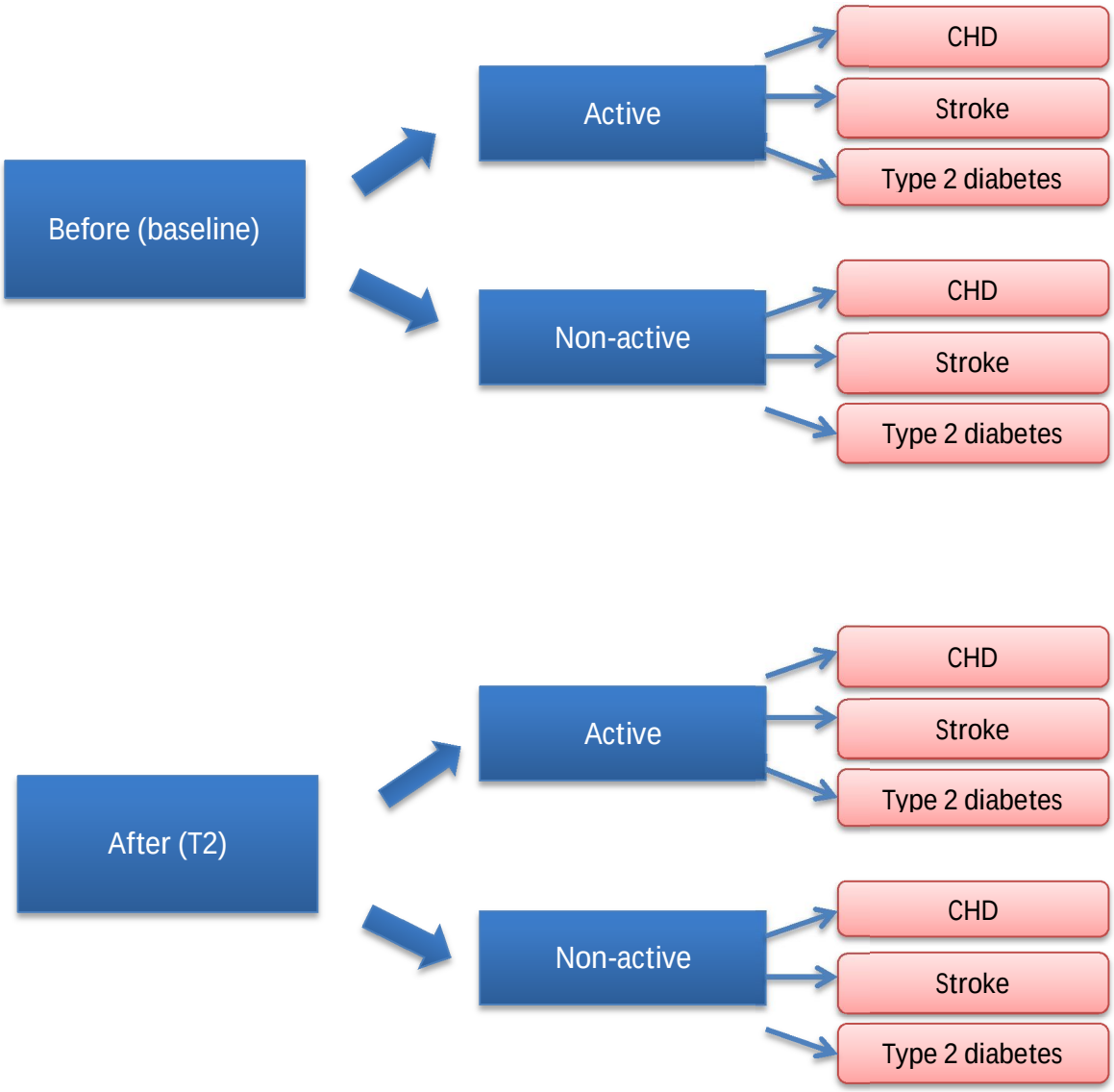
A more recent review of the cost-efficacy of exercise referral schemes in Wales has also been conducted (Edwards et al., 2013), which resulted in an estimate of £12,111 per QALY gained which is much closer to that computed for P2H. This was calculated based on 798 service users across Wales using a similar method of analysis, but again relied on self-report physical activity estimates at 6 and 12 months post enrolment.

Thus overall, the cost effectiveness of P2H appears to be comparable to exercise referral schemes run within Wales, and at the lower bound of costs for those previously evaluated in the UK as a whole.

6.3 Methodology

The calculations were conducted by Dr Gavin Shaddick, a Reader in Mathematics at the University of Bath using a decision analytical model (Figure 6.1). The model used data to estimate the probability of the people enrolling on P2H becoming more physically active (using the primary outcome of moderate to vigorous physical activity), and subsequently the probability of them developing the conditions associated with physical inactivity (i.e., heart disease, stroke and Type 2 diabetes). The analysis was run using Monte Carlo simulations to incorporate uncertainty, and for each iteration calculations are made to estimate the expected cost savings of not developing these diseases and expected increase in QALYs (Quality of Life Years). The probabilities used in the analysis are provided in the Appendix 7 for reference.

Figure 6.1: Decision analytic model on which cost efficacy calculations are based



Part 7 – Evaluation Toolkit

The Evaluation Toolkit was developed based on our experience in evaluating Passport to Health, in terms of the available information, feasible approaches to gathering new information, and the most pertinent questions to ask in relation to a service. It was designed to primarily facilitate the monitoring and evaluation of services and new health and wellbeing initiatives introduced by local authority employees, however it is sufficiently generic to be relevant to services across the full range of public health and other community based services and interventions. The toolkit is hosted on Bath & North East Somerset Council, webpages[1].

The toolkit consists of six short guides that provide guidance on:

- Monitoring service performance
- Measuring client satisfaction
- Choosing appropriate research methods
- Evaluating a new intervention or service
- Using focus groups and interviews
- Conducting data analysis.

The guides were designed to summarise best practice in each of these areas, providing a brief summary of what an evaluation would involve, and means for local authority staff to quickly familiarise themselves with the key relevant issues. The toolkit was not designed to be exhaustive, but to act as a single point of reference that could act as a springboard to further resources when necessary.

The toolkit contains additional resources that can be used to facilitate and improve service evaluations. These include:

- A glossary of useful terms to assist in the interpretation of research evidence and guidance.
- Best practice guidance for service monitoring – a list and description of factors to record as part of usual practice to ensure that monitoring data captures service impact.
- A pool of validated measures which can be used to assist in the selection appropriate and valid measures to use in service evaluations.
- Links to more detailed evaluation toolkits that are available online - this will signpost employees to more in-depth guidance and information when needed.

The toolkit will be maintained by the Active Lifestyles and Health Improvement Team within the Local Authority.

Copies of the toolkit are provided in Appendix 3.

[1]http://www.bathnes.gov.uk/services/sport-leisure-and-parks/health-and-fitness/passport-health/evaluation-tool-kit

Part 8 – Impact of the Evaluation to date

During the process of conducting this evaluation, the outcomes of each section have been fed back through the project steering group at regular intervals. As a result, a number of changes have already been made to improve the P2H programme and processes acting on these findings:

8.1 Service delivery

1. Based on the outcomes of the work reported in Section 3, a standardised protocol has been developed for use by exercise referral consultants, to make it clearer what core components P2H referrals should receive at their first appointment.

2. A team away day was delivered in November 2012 based on the key findings from the observation study incorporating feedback and training in relation to the following elements:
    a. Goal setting; removing requirements to set three goals (as many clients struggle to do this unassisted, which may have resulted in some advisor-set goals), and discussing the need to set process goals focussed on physical activity targets, rather than outcome goals, focussed on weight loss.
    b. Using standardised measures to assess clients' starting physical activity levels (using the GPPAQ), and health-related quality of life (using the Dartmouth Coop). This means that patient outcomes can be monitored in a more reliable fashion.
    c. Providing feedback; exercise referral consultants were reminded of the importance of giving patients feedback on what their baseline measures mean. For example whether their blood pressure is healthy or not, what weight category they fall into, or helping them to identify how much exercise they are doing.

3. Establishment of regular bi-annual team away days to review current practice, provide updates and refresh advisors on what P2H requires relative to their usual practice in other roles.

The impact of these measures on the content and variability of delivery is being assessed in June/July 2014.

8.2 Service monitoring

4. A quarterly customer service survey has been established whereby all people referred are contacted to gain insight into the performance of the service for those who attend, and reasons for non-engagement for those who do not take up their referral.

8.3 Referral processes

5. The referral process has been reviewed and streamlined. Clients with no medical risk factors (e.g. CHD) are able to self-refer providing they pass a PARQ assessment.

6. Following the completion of interviews and surveys with potential service-users and referrers, we used a systematic process of intervention mapping to design the content a leaflet-style resource aiming to improve the referral process. The design process involved matching each barrier identified to a behaviour change strategy that is proposed to target it (for example, lack of understanding can be addressed through provision of clear, accessible information), to result in a comprehensive theory and evidence-based resource (Appendix 5).

   We sought research funding to develop and formally trial this resource in practice (from the National Institute of Health Research (NIHR), and Medical Research Council's Public Health Intervention Development Scheme (PHIND) although we have been unsuccessful so far. However, the local authority has committed to invest in developing the resource nonetheless, and we anticipate that using the evaluation toolkit (Part 7), they will be able to explore its impact using existing monitoring data.

7. We have also developed a proposal for how the P2H programme could be extended at affordable cost to provide some support beyond the end of 12 weeks. Unfortunately this was not funded on its first application, but we remain positive that this could be achieved in the future (e.g., through a PhD studentship or application to a different funding body).

8.3 Career Development

8. Over its duration, five MSc Health Psychology students on placement with the Department for Health have contributed to the project. The volume of work that we have conducted could not have been done without them. However, the project in turn has helped in the development and potential employability of these students within the public health field. For example, one student who worked on the project over two years (Mira Koseva) won a national prize for the best Health Psychology Masters dissertation by the British Psychological Society, based on her work on P2H, and has gone on to start a job in the field of health promotion within another local council. Thus, the process of working in partnership between the university and council has helped the career development of excellent students within the field, and also inspired them to keep working within this field.

Part 9 - Recommendations

Based on the findings of the evaluation as a whole, the following recommendations are proposed;

1) Increase the provision of information to referrers

Referrers reported the same uncertainty as to what P2H involves as did the patients that they referred. This uncertainty resulted in them making fewer referrals, and less confident referrals than they would otherwise do. This was corroborated by the comments of patients, who interpreted this uncertainty as their doctor or nurse perceiving P2H to be of limited potential efficacy of importance for them, which undermined their own motivation to take part.

Referrers suggested that referrals could be enhanced through: (i) providing league tables of the number of referrals by each GP practice, (ii) providing feedback on the progress of individual patients through the service, and (iii) providing clearer information about the programme to clarify what is involved both to themselves and the patients they refer.

2) Provide information direct to patients on referral

The interview and survey data with clients who were referred but did not attend a first appointment showed that a large number of those who did not start on P2H were motivated and keen to attend the service, but were discouraged by the referral process. Reasons for this included; misunderstanding the offer of what is available, delays between referral and first appointment, and confusion about different healthy lifestyle services.

Implementing and evaluating a scheme that better informs patients of the options open to them, thus putting some of the power back into patients' hands, may help to address some of these without changing the existing infrastructure. One example of how this could be done was developed during the project, in the form of 'Action Packs' to provide to prospective clients at the point of referral. This includes information provision, motivational content, and details of how to get started if there is a delay in getting an advisor appointment (e.g., by self-monitoring, thinking about goals and different types of exercise, who to contact if no contact is made etc.). The further development and implementation of the 'Action Pack' resource provides a low cost initial means of attempting this (Appendix 5).

3) *Monitor and address delays and non-attendance*

Many patients and referrers criticised the time taken from referral to starting on P2H. However, currently little is known about how long referral does take; are patients being unrealistic, or is there a real problem? As patients will often have negotiated their way through four different sets of people by the time they reach their first appointment (referrer, healthy lifestyles hub, P2H team, exercise referral consultant), there are many points at which delays may occur. We note that following the introduction of a new computer system (System 1) which allows P2H staff to see referrals directly, this has been partly improved already.

Monitoring the referral process would help to asses where and why delays occur. Our research suggests some of this may result from misunderstandings, for example if advisors are not able to leave messages for patients when contacting them and do not routinely follow up with letters, the patient may well believe no attempt has been made to get in touch. Formal monitoring of this process from both sides (advisors and patients) may illuminate potential problems and help to generate solutions.

4) *Improving flexibility of access*

Clients who took part in P2H (whether they completed the programme or not), reported a lack of perceived flexibility in the time slots available as a barrier to doing more exercise. This dissatisfaction may be reduced if patients understand better why this is (e.g., if they are not aware that this is a result of the subsidy they receive on gym use), or if they are aware of all the facilities or exercise sessions that they could access beyond their usual session (i.e. that they are able to switch from gym access to classes or vice versa as and when it is convenient for them). It may be worth investigating if this information is regularly shared with new referrals and setting in place measures to ensure that it is.

Further, it could be investigated whether additional off-peak time slots could be provided for clients with low health risk, who would not need additional supervision.

5) *Enhance motivational content of sessions*

While P2H brought about significant improvements in physical activity after 12 weeks, this was not closely linked to increases in motivation, and there was no reported improvement in self-efficacy. Evidence suggests that introducing behaviour change techniques that target these two constructs could be pivotal in further improving outcomes, and importantly in sustaining them over the longer term.

Long-term behaviour change is predicted by enjoyment of physical activity, but also a person's self-efficacy to cope with challenges to usual routines (e.g., getting back to exercise after holidays or illness, finding new forms of exercise if existing options are discontinued or cease to be enjoyable), and belief that physical activity is personally meaningful to them, rather than something they undertake to avoid feeling guilty or letting their family or doctor down. The addition of simple techniques and adjustments to delivery style (as has already been initiated as a response to the observation work reported in Part 3), and standardisation of the support that people feel they receive from their exercise referral consultants (be it accessibility, frequency of contact, proactive enquiries from the consultant, or other characteristics) could help to facilitate this.

6) Recognition and management of patients' weight loss goals

The majority of people joining P2H had a primary goal of weight loss. It would not be expected that clients of P2H would lose significant amounts of weight by exercise alone, as they are starting from relatively low levels, so would need considerable increases in volume and intensity without dietary compensation to a achieve negative energy balance. Therefore, while it may be useful for advisors to acknowledge clients' goals, it is important to help clients to set more realistic expectations of achievable outcome of P2H alone, and focus on the independent health and wellbeing benefits of exercise. Such goals will be more achievable, and thus more likely to provide positive feedback and support ongoing motivation.

It is not within the role of exercise referral consultants to provide dietary advice, or support for dietary change. However, in acknowledging that patients will want to discuss weight and weight loss, it may be useful to ensure that they help in facilitating a concurrent referral to SOR if appropriate, or are able to signpost clients to other sources of help and advice such as online through NHS choices of Change for Life.

7) Extension of support beyond initial 12-weeks

Increases in physical activity were maintained only for the number of steps taken at the end of one year. This suggests that additional strategies to boost long term outcomes would be useful. As a basis, this may be achieved through building in more support for self-determined forms of motivation and greater self-efficacy to sustain an exercise regime without the need for external support, as discussed in Recommendation 5. Structural changes may also be useful in achieving this, examples of which could include;

- A more standardised and focussed protocol to ensure that full and supportive information is provided to clients at the end of 12-weeks. This would ensure that all clients always provided with details of different

options available (including low-cost and no-cost community activities, not just those provided by Aquaterra).

- A low-intensity follow-up programme, in which clients are contacted by phone at various future points (e.g., at 6 and 12 months) to receive a 'booster' session. This was the focus of an unsuccessful grant application in 2013, but we would be happy to revisit this with the added information from the 1 year follow up data now available.
- The option to transfer into the group session route of P2H where capacity allows, to sustain contact with a source of support while establishing more long-term routines.

8) Continued assessment of service performance

The findings of this evaluation report provide an indication of how the service has been performing over the past two years. However, as service changes are made there will be an ongoing need monitor service performance and outcomes. The evaluation toolkit (Appendix 3) can be used to monitor the service performance of the P2H service and other services within the local authority. Dissemination to other services within and beyond the local authority may help to raise the profile of good practice in data monitoring, to facilitate comparison between services and future collaborations (e.g., with services delivered in BANES by other providers).

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Appendices

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Ref – Ne

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Passport to Health Evaluation Form

You were recently referred to the Healthy Lifestyle Service for support to increase your activity levels through the Exercise Referral Service – Passport to Health.

As part of an evaluation of the Passport to Health we would like to find out more about your opinions about the **exercise referral service**. We would like to hear your views. Please complete the following questions by ticking the relevant boxes and add your comments in the spaces provided.

1) Do you remember being referred to Passport to Health?

☐ Yes
☐ No

2) Did you request a referral or was it suggested to you?

☐ I requested it
☐ It was suggested to me
☐ I was unaware I had been referred

3) If the referral was suggested to you, how did you feel about accessing the service?

☐ Positive
☐ Looked forward to becoming more active
☐ Looked forward to losing weight
☐ Unsure
☐ Concerned about using a gym
☐ Did not feel confident in my ability to exercise
☐ Worried about how much it would cost
☐ I did not feel a referral was necessary
☐ Other (please state):

……
……
……
……

4) **Do you recall receiving a message or letter from the Passport to Health coordinators?**
   - ☐ No - Did not hear from Passport to Health coordinators
   - ☐ Yes – but did not reply to Passport to Health coordinators
   - ☐ Yes – replied but did not hear back
   - ☐ Used Slimming world/Weight watchers instead of Passport to Health

5) **What best describes why you did not access the service?**
   - ☐ Did not want to be referred
   - ☐ Did not understand what I was being referred for
   - ☐ I am active enough and do not need support
   - ☐ Not interested in increasing my physical activity levels
   - ☐ Wanted to exercise independently
   - ☐ Not motivated
   - ☐ Not the right time for me
   - ☐ Could not afford to start
   - ☐ Did not want to go to the gym
   - ☐ Do not have time to exercise
   - ☐ Exercise options not local to me
   - ☐ Wanted to focus on other lifestyle issues
   - ☐ Was not contacted
   - ☐ Unresolved medical issues
   - ☐ Do not feel able to exercise
   - ☐ Other (please state overleaf)

     ……
     ……
     ……

6) **What do you know about the Passport to Health programme?** (Tick all that apply)
   - ☐ Nothing/Did not know what to expect
   - ☐ Free access to leisure centres
   - ☐ Reduced cost access to leisure centres
   - ☐ Free personal training
   - ☐ An individualised programme of exercise
   - ☐ Slimming World or Weight Watchers vouchers
   - ☐Other (please comment below)

     ……
     ……
     ……

7) **Is there anything that you feel may have helped you to access the service?**
   - ☐ Yes (please comment below)

☐ No

……
……
……..

8) If you were referred for other Lifestyle Services, did you access these?

☐ Yes
☐ No

9) Please tick which service(s) you have accessed. (Tick all that apply)

☐ Slimming World or Weight Watchers
☐ Lifestyle Advisor
☐ Stop Smoking Service
☐ Cook It

Thank you for your time.
Please return this survey in the envelope provided.

If you would like to be entered into a prize draw to win **£100** worth of love2shop vouchers (two runners-up prizes of **£50** vouchers); please print in BLOCK CAPITALS your name and contact number below.

NAME: …….. Contact number:,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

If you would be happy to take part in further research about your opinions towards physical activity and this service please tick this box ☐

Appendix 2a: Protocol coding form for consultation observations

Coding Matrix for Adherence to P2H protocol by P2H advisors

Locality: _____ Delivery Staff ID _____ Participant Number _____

Initial consultation

Date:		
Processes	**Present Y/N**	**Notes**
1. ***Greeting and introduction***		
a) Greeted in leisure centre reception	Y/N	
2. ***Explanation of P2H***	Y/N	
3. ***Purpose/overview of initial consultation***	Y/N	
4. ***Referral context***	Y/N	
5. ***Medical history/ medication use/lifestyle history***	Y/N	
6. ***Exercise levels***		
a) previous history	Y/N	
b) current levels	Y/N	
c) activity preferences	Y/N	
7. ***Personal details***	Y/N	
8. ***Consent***	Y/N	
9. ***PAR-Q assessment***	Y/N	
10. ***General lifestyle issues Circle***		
a) **Diet**	Y/N	
Discussion/Advice/Referral	Y/N	
b) **Smoking**	Y/N	
Discussion/Advice/Referral	Y/N	
c) **Alcohol**		
Discussion/Advice/Referral		
d) **Mental health**		
Discussion/Advice/Referral		
11. ***Baseline measures (feedback = f)***		
a) Purpose of measures	Y/N F	
b) Height	Y/N F	
c) Weight	Y/N F	
d) BMI	Y/N F	
e) Waist circumference	Y/N F	
f) Percentage of body fat	Y/N F	

g) Blood Pressure	Y/N F	
12. ***Self-reported measures***		
a) **Self-esteem (1-4vs. open ended)**	Y/N	
b) **Confidence in being regular active (1-4vs. open ended)**	Y/N	
c) **General health and wellbeing (1-4vs. open ended)**	Y/N	
d) **Current PA levels (in minutes/days)**	Y/N	
e) **Feedback on government guidelines**	Y/N	
	Y/N	
13. ***Barriers and fears for physical activity***		
14. ***Set specific and measurable goals***	Y/N	
a) client set	Y/N	
b) feedback on realistic goals		
	Y/N	
15. ***Recommendations (please state)***		
	Y/N	
16. ***Buddy vouchers***		
17. ***Programme info***	Y/N	
a) Gym induction (if applicable)	Y/N	
b) membership card	Y/N	
c) Review in 2 weeks and 6 weeks	Y/N	
d) Exit in 12 weeks	Y/N	
e) 3 month follow up	Y/N	
f) Tour of the facility		
	Y/N	
18. ***Questions***	Y/N	
19. ***Contact details***		

Appendix 2b: Coding schedule for Behaviour Change Techniques

	Behaviour Change Technique	Present	Notes
1	Provide general information on the consequences of the behaviour in general	(y/n)	
2	Provide information on the consequences of behaviour to the individual		
3	Provide information about others' approval		
4	Provide normative information about others' behaviour		
5	Goal setting (behaviour)		
6	Goal setting (outcome)		
7	Action planning		
8	Barrier identification/problem solving		
9	Set graded tasks		
10	Prompt review of behavioural goals		
11	Prompt review of outcome goals		
12	Prompt rewards contingent on effort or progress towards behaviour		
13	Prompt rewards contingent on successful behaviour		
14	Shaping		
15	Prompting generalisation of a target behaviour		
16	Prompt self-monitoring of behaviour		
17	Prompt self-monitoring of behavioural outcomes		
18	Prompting focus on past success		
19	Provide feedback on performance		
20	Provide information on where and when to perform the behaviour		
21	Provide instruction on how to perform the behaviour		
22	Model/demonstrate the behaviour		
23	Teach to use prompts and cues		
24	Environmental restructuring		
25	Agree behavioural contract		
26	Prompt practice		
27	Use of follow-up prompts		
28	Facilitate social comparison		
29	Plan social support/social change		
30	Prompt identification as a role model/ position advocate		
31	Prompt anticipated regret		
32	Fear arousal		
33	Prompt self-talk		
34	Prompt use of imagery		
35	Relapse prevention/coping planning		
36	Stress management/emotional control training		
37	Motivational interviewing		
38	Time management		
39	General communication skills training		
40	Stimulate anticipation of future rewards		

Source: Michie et al., 2011.

Appendix 2c: Coding schedule for Client-Centred delivery style

BECCI CHECKLIST

Processes	Advisor Rating				
	0 not at all	1 minimally	2 to some extent	3 a good deal	4 to a great extent
1. Practitioner invites participants to talk about behaviour change					
2. Practitioner demonstrates sensitivity to talking about other issues					
3. Practitioner encourages participants to talk about current behaviour or status quo					
4. Practitioner encourage participants to talk about change					
5. Practitioner asks questions to elicit how participants feel about the project					
6. Practitioner uses empathic listening statements when the participants talk about the topic					
7. Practitioner uses summaries to bring together what the participants say about the topic					
8. Practitioner acknowledges challenges about the behaviour change that the participants face					
9. When the practitioner provides information it is sensitive to participant concerns and understanding					
10. Practitioner actively conveys respect for participant choice about behaviour change					
11. Practitioner and participants exchange ideas about how the patient could change current behaviour					

Source: Lane et al., 2005.

Checking the accuracy of monitoring data

Missing data

Monitoring data should be regularly screened to identify patterns of missing data. This process can help to identify problems that are often easily resolved; for example, if particular staff are not routinely collecting certain information additional support/training can be provided, or if data is missing as questions are not acceptable or easily answered by clients, more appropriate/alternative measures can be developed.

Ensuring consistency

To ensure the validity and comparability of monitoring data, forms should be brief, unambiguous, and response formats standardized. If complete data is not routinely returned, consider organizing training and developing a protocol with clear instructions for staff involved in data collection.

Monitoring service performance: a best practice checklist

- ☑ Identify service outcomes and performance indicators to be monitored.
- ☑ Map indicators and outcomes to validated measurement tools.
- ☑ Review and update existing monitoring practices.
  - ⇒ Are the most appropriate and valid measures being used?
  - ⇒ Are all important outcomes being routinely measured?
  - ⇒ Is anyone responsible for maintaining and monitoring the service database
- ☑ Are data collection methods standardised across staff?
- ☑ Do patterns of missing data exist?

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Monitoring service performance

A best practice short-guide to monitoring public health services

February 2014

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Why is monitoring important?

Monitoring service performance allows us to;

i) check that services are reaching the people for whom they are intended.
ii) explore patterns of service use.
iii) check that services are delivering what was intended.
iv) monitor service outcomes.

Monitoring allows informed decisions to be made about how services can be improved, and helps commissioners to justify continued investment.

How is monitoring different to evaluation?

Monitoring involves capturing routine data to facilitate an accurate assessment about service performance, matched against standard outcomes over time. Evaluation represents a deeper form of analysis, for example, exploring whether a service is performing as intended, and is sufficient to bring about meaningful improvements to health.

What information should I monitor?

Key monitoring questions are:

i) How many? Quantify the activity of the service. For example;

⇒ the number of people using the service.
⇒ the number of sessions/courses/clinics delivered.
⇒ the number of people trained.
⇒ the number of campaigns delivered, or information disseminated.

ii) How well received? Assess uptake and acceptability. For example;

⇒ Level of service use (referral rate, uptake, completion rates),
⇒ Client satisfaction,
⇒ Satisfaction with training delivered.

iii) What effect? Monitor services outcomes. For example, does the service change;

⇒ Primary health outcomes (e.g. weight loss, fitness, smoking rates),
⇒ Secondary outcomes (e.g., motivation, confidence, self-esteem, wellbeing).

Choosing appropriate outcome measures

Choosing a reliable outcome measure is important in ensuring that your findings are valid. Where possible, use measures that are;

i) Validated - measures that have been demonstrated to be reliable and accurate by wider research.

ii) Objective - measures taken by staff (i.e., weight and height) rather than self-report.

A selection of validated measures for common outcomes is provided on the council website: [INSERT LINK TO WEB RESOURCE}

This short best practice guide is bought to you by the University of Bath in collaboration with Bath & North East Somerset Council. For more information about monitoring and evaluation please see [Insert link]

Drawing conclusions

1. **Who took part in the research?**

Ensure interpretations take account of whether feedback was obtained from all demographic groups, and from a similar sample to the full range of service users. Underrepresentation of specific groups can lead to their views being neglected. Failing to include all groups could mean that the service becomes catered to the needs of majority groups.

2. What are the validity of findings?

Are prominent findings from interviews supported by survey data? Are findings from surveys replicated over time? It is important to understand the validity of findings before making decisions that impact upon service delivery. By ensuring that views are widely endorsed rather than that of a vocal individual it will enable informed decisions to be made about future service directions.

3.What are the limitations of the research?

Interviews and focus groups provide insight into client experiences but are not generalizable data. To draw conclusions it is worth using a mix of methods to increase the strength of evidence available. Also note that methods used are cross-sectional and only reflect opinions and views at the time of research, and cannot be used to justify a conclusion of cause and effect.

Client satisfaction: a best practice checklist

- ☑ Define the purpose of the research. Do you want to gain an insight into experiences or do you require objective data?
- ☑ Choose methods appropriate to your aims and objectives.
- ☑ Consider the tools used to collect data (e.g. interview schedules, questionnaires). Make sure that these are adequate. The conclusions you draw are only as good as the data you collect.
- ☑ Design a data collection protocol. Consider how clients will be approached and how bias will be minimised.
- ☑ Compare your final sample with the full client group to reflect on how representative your findings are.

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Client Satisfaction

A best practice short-guide to exploring client satisfaction

March 2014

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Why is it important to monitor client satisfaction?

Feedback from a representative sample of clients can help to identify ways that a service can be improved to meet clients' needs and improve experiences. Satisfied clients are more likely to make full use of the service and recommend the service to others.

The most useful methods of gaining insight into client satisfaction are:

i) Questionnaires/surveys
ii) Interviews/focus groups

How can client satisfaction be monitored?
The choice of method will depend on the question you want to answer.

⇒ Interviews and focus groups are useful if you want to understand client experiences, e.g. if you want to explore why uptake is low.

⇒ Questionnaires and surveys are useful if you want to get an overview of client satisfaction levels.

Eliminating bias

With research and evaluation; bias can occur at the planning stage, when data are collected or when data are interpreted. These questions may help to ensure that your findings are as balanced as possible.

Planning

1.What marker of customer satisfaction could you use?
Make sure you have identified your primary marker of client satisfaction before you start. Different outcomes are useful for different purposes; e.g. self-reported '*satisfaction*' may be sufficient for standard monitoring purposes, but '*willingness to recommend the service to others*' may be more useful if lobbying commissioners/providers for change.

2. What questions will you ask?
The questions we ask limit the data collected. It is important not to bias findings by asking misleading or narrow questions.

3. How will you capture responses?
Free text allows people to propose responses that are meaningful to them. However, free text can be time consuming to analyse in large samples. Forced responses may be more appropriate to answer specific questions (e.g. gauging the support for changes to services).

4. Who is being asked to take part in the research?
Include clients who have disengaged from the service in addition to those who used it to the full, Groups who are typically less likely to respond to surveys may need to be 'oversampled' in order to ensure you have representation from the full range of clients.

Data collection

1. **How are data collected?**
Do data collection methods promote honesty? Are clients informed that their views will be anonymous? Clients may be less honest if they have to provide feedback to the member of staff they dealt with. More open responses are obtained when feedback is anonymous and submitted away from staff members (e.g. posted to a central site or entered online).

Ideally interviews and focus groups should be conducted by someone neutral and clients reassured that their conversations and contributions will remain anonymous. Be prepared that some feedback might be uncomfortable to hear; but your role is to understand clients not challenge them.

This short best practice guide is bought to you by the University of Bath in collaboration with Bath & North East Somerset Council. For more information about monitoring and evaluation please see [Insert link]

Quantitative research methods

⇒ **Before/after studies**
Repeating the same measures pre- and post-intervention to detect change.

⇒ **Secondary data analysis of monitoring data**
Analysis of existing resources to extend knowledge about service utilization and outcomes.

⇒ **Questionnaires**
Used to explore service users' attitudes, needs, expectations, preferences and knowledge.

⇒ **Observation research**
Use of systematic checklists to describe and quantify naturalistic events e.g. such as service delivery.

Qualitative research methods

⇒ **Interviews**
Client-centered means of exploring people's views and experiences.

⇒ **Focus groups**
Used to explore attitudes and opinions where interaction between people may raise additional insight. Usually involve 6-8 people with similar experiences/ characteristics.

Choosing research methods: a best practice checklist

- ☑ Create a research proposal detailing your aims, objectives timeframe and resources, to ensure you have considered all necessary elements of the evaluation.
- ☑ Ensure your chosen research methods match your aims and objectives.
- ☑ Plan to collect the type of data appropriate to your chosen quantitative/ qualitative research methods.
- ☑ Consider your stakeholders; can you involve them in the research design process?
- ☑ Do you have enough resources to conduct the research in the way that you would like?
- ☑ Is the research justified? Have others completed similar research previously?

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Choosing research methods

A best practice short-guide to choosing appropriate research methods

March 2014

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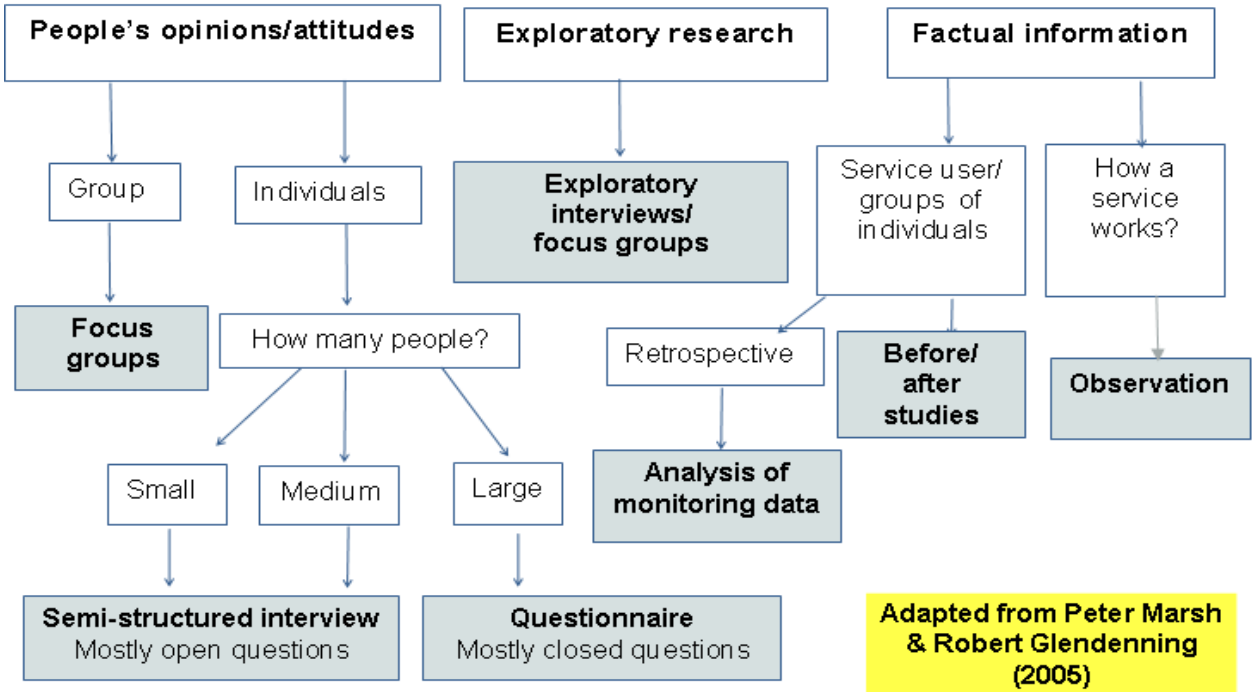
Which method should I use?



Adapted from Peter Marsh & Robert Glendenning (2005)

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Which approach?

Research can be quantitative or qualitative in nature.

Quantitative research

⇒ Used to test specific hypotheses, using pre-defined outcome variables.
⇒ Data are numerical and analysis typically involves conducting statistical tests
⇒ Usually involves a large sample size (number of people).
⇒ If data are representative of the full population, results allow inferences to be generalised.

Typical examples are questionnaires, randomized controlled trials, observation research

Qualitative research

⇒ Used to answer exploratory questions, and understand the meaning that people attach to their experiences.
⇒ Data are often very rich and descriptive.
⇒ Usually involves a small sample size (number of people).
⇒ No generalisations can be made from data, but can help to generate ideas and hypotheses to explain what is observed more widely.

Typical examples are interviews & focus groups

Enhancing Quality

Consider how you can reduce bias:

⇒ How were participants selected (are they representative of all clients)?

⇒ If using comparison groups; do groups differ in relation to underlying characteristics (such as age, socioeconomic status, or motivation) which could impact upon outcomes?

⇒ Were all data collected in a routine and standardised manner? Developing a protocol to ensure that all data collectors are doing the same can help with this.

Consider methodological assumptions:

⇒ Findings of qualitative research (such as interviews and focus groups) are not generalizable to wider audiences. Instead they give a snapshot insight into views and experiences.

⇒ How far you can generalise from quantitative methods will depend on how representative the sample is in relation to the target population and whether the data collected is of a high quality (e.g. little missing data, valid measures, appropriate analysis).

These factors will impact on the conclusions that you can make about the data.

Evaluating a new intervention: a best practice checklist

☑ Before you invest time and resources evaluating be confident that you know how the intervention is being delivered and are familiar with existing evidence.

☑ Spend time considering your outcomes. What are you hoping to change and how could this be collected objectively? Consider what other people may have done to evaluate similar interventions.

☑ Choose an appropriate research design. Make sure you are familiar with its assumptions and limitations.

☑ Develop a research protocol which standardises how the evaluation would run. Be clear about who is involved, timeframes, patient selection and planned data analysis.

☑ See our wider resources on research design and analysis at [insert weblink]

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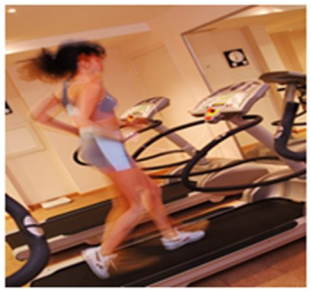
Evaluating a new intervention

A best practice short-guide to evaluating a new intervention



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Before you evaluate ....

An intervention can be a service or a health campaign which is aiming to change behaviour or increase awareness.

Before you evaluate, check the following to ensure that your findings will be valid :-

⇒ Has the intervention been piloted to resolve teething problems?

- if not, resolve these first.

⇒ Is the intervention being delivered in a standardised manner (i.e., are all patients getting the same treatment?)

- If not, consider staff training/ revising protocols so findings are comparable and meaningful.

⇒ Have you identified objective or valid measures for main and secondary outcomes?

- Without these, you can't be sure, what you have reliably measured.

⇒ Have you assessed the resources (time, money and expertise) you will need to conduct a meaningful evaluation?

- If not, identify additional support before you start.

TABLE 1:

Process	Description
Interviews or focus groups	Used to explore service user (or staff) experiences of accessing (or delivering) interventions.
Observations	Used to assess whether the intervention is delivered consistently by all staff, and as intended by the protocol.
Outcome	
Randomized controlled trial (RCT)	Considered gold standard evidence, but difficult to conduct in practice. Provides information of client outcomes, controlling for what happens over time if no support is received. Time consuming and may require specialist expertise.
Prospective (or retrospective) cohort study	Involves observing the impact of the intervention on a cohort of service users over time. Can be done retrospectively using existing monitoring data (if available) or prospectively (easier to ensure all data is collected).
Controlled before/after study	Compares pre– and post-data of people using a service (or exposed to a health campaign, policy change etc). More informative if compared with a 'control group 'of matched participants who did not receive the intervention.

How do I evaluate?

Table 1 contains a summary of evaluation methods and their purpose.

Process evaluation: to explore how an intervention is delivered in practice, and how it works.

⇒ Useful if unsure whether the intervention is being delivered as intended.

⇒ Can help to avoid wasting resources evaluating an intervention that first needs additional staff training or updating.

⇒ Useful to identify how an intervention works (i.e., what aspects clients find most important).

Outcome evaluation: to establish whether an intervention works.

⇒ Useful to see what changes, how much things change, and who benefits most.

⇒ Can include cost effectiveness (does the intervention provide value for money).

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Practicalities

⇒ It is important to adopt an objective and neutral role during data collection. Questions should be neutral and researcher interaction should be kept to a minimum.

⇒ Due to the rich nature of qualitative data it is standard practice to audio-record Interviews and focus groups to assist future data analysis.

⇒ Recordings need to be transcribed. This is an very time consuming process, so using professional transcription services is quicker and usually more cost effective.

⇒ Qualitative data analysis is also time consuming, so leave time for this. The process is to read, and re-read transcripts identifying common themes. Asking a second person to review the themes relative to the transcripts can be useful to check validity. See website for guidance on qualitative data analysis.

Conducting interviews and focus groups: a best practice checklist

- ☑ Decide on your research question and develop an interview schedule, or focus group topic guide, study information sheets and consent forms.
- ☑ Consider your sampling strategy.
  - ⇒ Who are you targeting? And how?
  - ⇒ Set out an inclusion and exclusion criteria to define eligibility for the study.
- ☑ Consider whether you need ethical approval for your study; if so seek this as early as possible.
- ☑ Consider piloting interview schedules and other forms with participants to ensure clarity of wording and that they are adequately capturing the right data.
- ☑ Set out a protocol detailing who will be involved with transcription and data analysis.

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Conducting focus groups and interviews

A best practice short-guide to conducting focus groups and interviews

April 2014

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What is qualitative research?

⇒ In its simplest form qualitative research can be seen as any method which generates data in the form of words.

⇒ Qualitative research methods are often used to understand the meaning that people attach to what they experience.

⇒ Qualitative research does not seek to generalize or conclude but to gain insight and explore.

⇒ Areas of inquiry may be pre-defined but there is an openness to explore the findings that emerge.

⇒ Client numbers are lower compared to quantitative research due to the intensive nature of qualitative research.

The most commonly used qualitative methods are **interviews & focus groups**

Interviews

Interviews are an excellent way of exploring an individuals personal views and experiences.

Interviews can differ in the level of structure they have. They can be:

⇒ unstructured (no interview schedule and very exploratory).

⇒ semi-structured (guided by an interview schedule but the researcher has flexibility to add in interview questions as/when necessary).

⇒ structured (where no flexibility exists to deviate from the interview schedule).

Semi-structured interviews are most popular, as they allow you to tailor your approach to the interviewee, but ensure everyone is asked similar questions.

It is considered best practice to stop data collection when you reach data saturation (i.e. you are not getting any new information). Generally speaking, informative and reliable results can be achieved from 7 –15 interviews or 5-10 focus groups.

Focus groups

Focus groups are a way of exploring group attitudes and opinions, and can be useful for research questions when you are interested in a consensus. They may also be less intimidating for some target groups. Like interviews, focus groups can vary in the level that they are structured by a topic guide, but you typically have less control over where the group discussion will lead.

Focus groups normally consist of a group of 5-10 people. A final decision on numbers will depend on your participants. The aim is to create an environment where participants engage in healthy discussion (rather than shouting each other down) and feel able to voice their opinions freely. Therefore, a fully representative sample may not always be possible.

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Glossary of useful terms

⇒ ***P-values*** are used to illustrate a finding's ***statistical significance.*** Findings less than 0.05 indicate that you can be 95% sure that findings are not due to chance.

⇒ ***Confidence intervals*** are used to show the accuracy of average effects. For example, if the average (mean) weight loss after service use is 1.6, with confidence intervals of 1.2-1.8, we can be 95% confident that the true value lies between these figures.

Please see the website for step bystep guides on performing data analysis, examples of each test and tools to facilitate data analysis.

Conducting data analysis: a best practice checklist

☑ For quantitative research, develop an analysis plan by identifying the following:

- ⇒ Who will be involved with data analysis?
- ⇒ What are the specific questions you want to answer?
- ⇒ What are the predictor and outcome variables?
- ⇒ What type of analysis would match your research question? (see website for guidance on this).
- ⇒ Can you conduct the test with the data you have? (see website for more information).

☑ For qualitative research

- ⇒ With content analysis and thematic analysis; consider interpretations can they be supported by the data?
- ⇒ Will you perform validity checks with a second coder?

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Conducting data analysis

A best practice short-guide to conducting data analysis

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Deciding which analysis you need to do ...

The type of analysis that you conduct will depend primarily on whether you want to analyse qualitative data (words) or quantitative data (numbers), and what questions you want to answer. Common analytic methods are summarised within this guide.

Qualitative data analysis

Two common forms of qualitative data analysis are:

⇒ **Thematic analysis** involves reducing qualitative data (interviews, focus groups) into *themes*. Themes are a reductionist way of capturing the meaning within datasets.

⇒ **Content analysis** involves the analysis (and coding) of written text (documents, reports, websites etc) to identify meaning.

Guidance on performing these methods can be found on the website.

Quantitative data analysis

The type of quantitative analysis that you perform is largely determined by the questions that you are asking. Common questions are:

⇒ **Are there any differences between groups in relation to their specified characteristics or outcomes?**

For example, are there differences between the characteristics of women and men using services? Are there differences in outcomes (e.g. weight loss, increased physical activity) between different services or pathways? Do outcomes change following service use?

For these questions perform t-tests, ANOVA

⇒ **What factors are associated with, or predicative of specific outcomes?**

For example, is age associated with weight loss outcomes? Does deprivation predict service uptake or completion?

For these questions calculate correlations and odds ratios

Definitions of quantitative statistics

T-test: A way of testing whether two groups (or outcomes measured on two different days) are statistically different.

ANOVA: Similar to t-tests, but extend the comparison to three or more groups or time points.

Correlation: Provide an indication of the strength of relationship between variables.

Odds ratio: Calculates the comparative odds of a person in one group experiencing an outcome, relative to the odds of a person in another group. For example, the likelihood of a person who completed a 12 week intervention losing weight compared to those who dropped out after using 1-2 sessions.

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What shall I measure?	How shall I measure?
Reach	
Uptake	• Number referred by a third party, or sent an appointment but who did not attend. • Number who attended at least one appointment. • Number who met criteria for recommended service use (i.e., according to the service's definitions).
Attendance	• Recording the number of weeks or sessions that a client attended e.g. attended for a total of 4 out of 6 weeks.
Client demographics	• Gender • Age • Social deprivation, estimated from postcode data can be classified into deprivation quintiles (where 1 is considered least deprived and 5 most deprived). More information about the Indices of Deprivation can be found here https://www.gov.uk/government/collections/english-indices-of-deprivation and an online postcode checker is available here: http://tools.npeu.ox.ac.uk/imd/ • Ethnicity • Locality
Delivery	
Adherence to service protocol	• Proportion of active staff who have received appropriate training • Proportion of active staff reporting to be aware of, and working to the service protocol • Completion rates of required process and monitoring forms and data.
Delivery	• Number of services on offer • Mapping variation in service delivery across localities. • Training/awareness raising about the service to health professionals (e.g. practice visits, training courses).
Costs	• Central administrative costs for the service, and any additional costs per client • Costs of staff time per client, per appointment

Tool	Who is the target population?	Has it been validated?	Are there are restrictions on use?
Physical activity			
International physical activity questionnaire (IPAQ)	Adults	Yes	None: and it is available in many languages and formats. https://sites.google.com/site/theipaq/
General practitioner physical activity questionnaire	Adults (16-74 years)	Yes	None: https://www.gov.uk/government/publications/general-practice-physical-activity-questionnaire-gppaq
Physical activity questionnaire for children (PAQ-C) and adolescents (PAC-A)	Children and Adolescents (Ages 8-20 years) during the school term	Yes	None: http://www.dapa-toolkit.mrc.ac.uk/documents/en/PAQ/PAQ_manual.pdf
Diet			
DINE – Dietary Intervention in Primary Care	Adults	Yes	Yes: need permission from the Department of Primary Care at Oxford University – contact Liane Roe lsr7@psu.edu
FACET – Five a-day Community evaluation Tool	Adults	Yes	None: http://webarchive.nationalarchives.gov.uk/20080814090217/dh.gov.uk/en/Policyandguidance/Healthandsocialcaretopics/FiveADay/FiveADaygeneralinformation/DH_4001893
Child Nutrition Questionnaire (CNQ)	10-12 year olds	Yes	None: http://www.ijbnpa.org/content/5/1/5/additional
Family Eating and Activity Habits Questionnaire (FEAHQ)	Parents of children aged 6-11 years	Yes	None: http://www.nature.com/ejcn/journal/v52/n10/pdf/1600647a.pdf

Tool	Who is the target population?	Has it been validated?	Are there are restrictions on use?
Smoking			
Heaviness of smoking index	Adults	Yes	None: https://www.asco.org/sites/default/files/tobacco_cessation_hsi.pdf
Alcohol			
Audit-c	Adults	Yes	None: http://www.alcohollearningcentre.org.uk/Topics/Browse/BriefAdvice/?parent=4444&child=4898
Psychological health and wellbeing			
Dartmouth COOP	Adolescents and Adults	Yes	Yes: please obtain a license agreement from Deborah Johnson, Deborah.J.Johnson@Dartmouth.EDU.
WHQOL-BREF	Adults	Yes	Yes: Please obtain permission from WHOQOL@who.int
Rosenberg self esteem scale	Adults	Yes	None: http://www.yorku.ca/rokada/psyctest/rosenbrg.pdf

EXISTING EVALUATION TOOLKITS

Guidance on conducting evaluations

- NHS Cambridgeshire
  http://www.clahrc-cp.nihr.ac.uk/wp-content/uploads/2012/07/Full_Evaluation_Toolkit.pdf

- Avon Primary Care Research Collaborative Toolkit
  http://www.apcrc.nhs.uk/evaluation/toolkit.htm

- Charities evaluation services
  http://www.ces-vol.org.uk/tools-and-resources

- Ontario Centre of Excellence for Child and Youth Mental Health
  http://www.excellenceforchildandyouth.ca/sites/default/files/docs/program-evaluation-toolkit.pdf

- Greater Manchester Fire and Rescue Service
  http://www.manchesterfire.gov.uk/about_us/policies_and_publications/evaluation_toolkit.aspx

- NHS Health Scotland
  http://www.healthscotland.com/resources/researchinformationguidance/monitoringevaluatinginterventions.aspx

- Agency for Healthcare and Research and Quality – NHS Scotland
  http://www.knowledge.scot.nhs.uk/media/CLT/ResourceUploads/4021291/AHRQ%20NRC%20Evaluation%20Toolkit.pdf

Research methods guidance

- NICE
  http://publications.nice.org.uk/methods-for-the-development-of-nice-public-health-guidance-third-edition-pmg4/appendix-d-glossary-of-study-designs

- ESRC
  http://www.socialscienceforschools.org.uk/images/Part%201%20-%20What%20is%20SS%20research_tcm20-23983.pdf

Data analysis

- NIHR
  http://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/9_Qualitative_Data_Analysis_Revision_2009.pdf

- The Pell Institute
  http://toolkit.pellinstitute.org/evaluation-guide/analyze/analyze-quantitative-data/

Specific guidance on evaluating weight management, dietary and physical activity interventions

- British Heart Foundation National Centre Physical Activity and Health
  http://www.bhfactive.org.uk/sites/Exercise-Referral-Toolkit/

- Public Health England
  http://www.noo.org.uk/core/frameworks

- Welsh Assembly
  http://wales.gov.uk/statistics-and-research/evaluation-national-exercise-referral-scheme/?lang=en

Evaluating public engagement

- University College London Public Engagement Unit
  http://www.ucl.ac.uk/public-engagement/evaluation/toolkits

- Scottish Health Council
  http://www.scottishhealthcouncil.org/publications/research/evaluation_toolkit.aspx

Ethics

- NHS Health Research Authority
  http://www.hra.nhs.uk/

Glossary of useful terms

- Medical Research Council
  http://www.sphsu.mrc.ac.uk/glossary/

Economic evaluations

- National Obesity Observatory -
  http://www.noo.org.uk/visualisation/economic_assessment_tool

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Glossary of

Aims: *what you intend to do or achieve.*

Anova: *or analysis of variance. A statistical test which compares the mean difference between three or more groups.*

Between subjects: *is a research design which seeks to compare two unrelated groups.*

Bias: *can be any variable or factor which has a systematic influence on the data collected.*

Case study: *a detailed analysis or record of a person, group or phenomena.*

Comparison group: *a group of participants that can be used to compare to the treatment/intervention group. The comparison group usually receives a placebo or standard care.*

Confidence interval: *a range of values within which we can be 95% confident that the real value lies.*

Content analysis: *the analysis of the substantive information communicated in written, verbal and online texts.*

Control group: *is similar to a comparison group except participants are controlled so that differences between them and the experimental group are reduced.*

Data saturation: *the point in qualitative research after which no new themes or ideas emerge from further interviews.*

Demographics: *quantifiable statistics which define a population group such as age, sex, ethnicity, education.*

Evaluation: *to appraise and assess the value or performance of something.*

Focus groups: *a structured conversation with a group of people for the purpose of group discussion on specified topics.*

Group dynamics: *the interactions between people within groups that may influence outcomes.*

Hypothesis: *a prediction that can be tested through the scientific collection and analysis of data.*

Index of multiple deprivation: *a composite measure of an area's deprivation which is based on income, employment levels, the levels of health and disability, education, skills and training, barriers to housing and services, living environment and crime.*

Intervention: *something 'done to' people to influence their health or behaviour; can be a service, or an advertising or education campaign.*

Interviews: *a structured conversation for the purpose of exploring an individuals views and experiences.*

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Missing data: *gaps in a database due to incomplete record keeping or data inputting. If a lot of data is missing it may be problematic for the interpretations which can be made.*

Monitoring: *observing and measuring performance over a set period of time.*

Objective measures: *measures which are not subject to interpretation of the person taking the measures.*

Objectives: *are the steps involved to achieve an aim.*

Odds ratio: *a statistical value which shows the relative odds of an event occurring in two pre-defined groups.*

Outcome evaluation: *a form of evaluation which seeks to define the outcomes associated with an intervention.*

Outcome variable: *any factor which can be defined as an outcome of a service or intervention such as weight loss or increased physical activity.*

Outputs: *something tangible produced by a project/service or other activity. This could be reports, presentations or physical changes.*

***P* value:** *the probability of the test statistic being true or occurring by chance. Values below .05 are considered statistically significant and not likely to occur by chance.*

Pre/post study: *a research or evaluation which collects and compares data before and after the service or intervention is delivered.*

Process evaluation: *a form of evaluation which explores how a service operates.*

Psycho-social variable: *any factor which can be considered social or psychological in nature such as motivation, confidence, self-esteem.*

Qualitative research: *is used to explore individual or group experiences or beliefs.*

Quantitative research: *the scientific investigation of phenomena using numbers and statistics.*

Randomization: *usually used in relation to the allocation of people to different study or service conditions (intervention vs. control group) when testing intervention effectiveness.*

Randomized controlled trial: *considered 'the gold standard' in clinical trials. Participants are randomized to an experimental or control group to test the effectiveness of an intervention or treatment.*

Reliability: *the extent to which a finding would be replicated with subsequent testing.*

Representative data: *is defined by the level of similarity in terms of demographic characteristics between participants and the population they represent e.g. all service users or the local population.*

Research: *a systematic investigation into a specified phenomena with the aim of generating new information.*

Research proposal: *a document which specifies the rationale for research, how it will be conducted and by whom, resources required and how data would be analysed.*

Risk ratio: *the odds of an event occurring in an exposed group compared to an unexposed group. Unlike an odds ratio a risk ratio relates to the population at large.*

Secondary data: *is any data that is already in existence (often collected for another purpose). This could be a monitoring database, interviews, focus groups or text documents.*

Statistical significance: *the outcome of a formal statistical test to establish whether a finding is likely to have occurred through chance alone.*

Statistical tests: *calculations which aim to establish the statistical significance in relation to group differences and effects.*

Survey: *a method of using set questions to examine the opinions of a large number of people. Surveys can be performed face to face or through other methods such as telephone or post.*

Thematic analysis: *a form of qualitative analysis which seeks to establish the main points (themes) observed within and between participants or data sources.*

Transcribing: *is the act of converting an audio (or visual) recording in to text.*

T-test: *a statistical test which determines whether a significant difference exists between the means of two groups.*

Validity: *refers to the extent which a questionnaire or a scale actually measures what it meant to. i.e. does a scale measure confidence or is it actually measuring another concept*
.

Within subjects: *a research design which compares the performance or outcomes of the same people over time or after receiving different interventions.*

For further terms please see the Medical Research Council's glossary of terms.

http://www.sphsu.mrc.ac.uk/glossary/

Research proposal outline: An Intervention to Boost Engagement in Exercise Referral Services

Aims:

The aim of the proposed intervention (i.e., leaflet style resource) will be to increase the number of referred patients accessing and using Passport to Health. Objectives it is designed to meet include:

- Increasing confidence in referrers, to encourage patients to perceive the referral as important
- Improving patient and referrer knowledge of what P2H is, and what patients can expect following referral
- Maintaining and enhancing patient motivation to attend, through the provision of accurate information to frame expectations (of content and likely time to start), and encouraging preparatory activities
- Enhancing initial meetings with exercise referral consultants, as patients will arrive with a better understanding of the process and options, for more informed discussion and goal setting process.

Design:

Elements of the intervention will draw on the key findings from evaluation studies, and will address the following barriers:

Organisational level

- Too long between referral and receiving an initial contact from the service
- Sessions not convenient

Individual level

- Not wanting to go to a gym, and not being aware that there are alternatives
- Uncertainty as to the amount of exercise that will be 'required'
- Confidence in ability to exercise to the 'required' level (whether through fitness or health restrictions, or through anticipating lack of enjoyment)
- Belief in ability to exercise at a level that will bring any benefit
- Understanding the referral – confusion as to what/who they have been referred to, or not realising that they have been referred
- Having a previous poor experience of either exercise, or health promotion services
- Not believing that there is a problem

- Failing to realise expectations; focussing on often unrealistic weight loss outcomes, rather than exercise related fitness and health outcomes
- Lack of social support to start or continue
- Lack of time

Inter-personal level

- Patients perceiving low levels of enthusiasm from either referrers or initial exercise referral service contacts

Barriers for health professionals

- Lack of information about the service; uncertainty about what they are referring patients to
- Lack of feedback on patient progress; uncertainty as to whether the service is effective

Intervention content and format:

The proposed intervention has been developed by mapping specific strategies to address the various barriers to, and determinants of engagement with exercise referral services that this work has identified. The strategies selected are grounded in theory and research (i.e., shown to be effective in targeting these behavioural determinants in previous studies). In pragmatic terms, the funding organisation specifically asks for interventions that can be *added to* existing services, rather than redesigning services, and that are applicable to more than one service.

Process (detail of content provided in next section):

- Patients will be referred through standard, existing routes.
- On receipt of the referral[2], an "Action Pack" will be posted out to patients. This will ensure delivery of information to all participants in a consistent style, framing expectations at the outset, and providing a resource for patients to retain for reference.
- Health professionals referring patients to the programme will receive a copy of the pack, and will be updated via a training session on the implications for their practice (e.g., shift of focus from weight to exercise goals, discussion of self-monitoring outcomes).
- To encourage a greater number of referrals, made with greater confidence, a feedback system will be established to inform GP surgeries on patient progress and/or outcomes.

[2] May require a check for eligibility

Intervention Design Map

Phase 1 – To boost uptake of referral, and attendance at the first session

Barriers	Strategy	What the patient will see….
Perceived delay between referral and contact from service	Immediate provision of information on referral (Action Pack)	- Flowchart of what the process is, where they are now in that process, and what to expect and when - Section entitled "*What you can do now….*" that will encourage them to start considering their exercise preferences and monitoring their current activity level
Uncertainty of level or type of exercise available / possible	Provision of information (on range of services available)	- Outline of all activities available through service - Outline of other ways to increase exercise at home
Confidence to exercise	Modelling competence by similar others	- Case study example (person with objectively poor health) - Case study example (person who prefers not to use the gym) - Case study example (person who has not enjoyed exercise in the past)
Uncertainty as to the amount of exercise that will be 'required'	Provision of information (on expectations)	- Section emphasising the tailored approach taken to setting exercise goals
Uncertainty of what/who referred to	Provision of information (on local services)	- Signposting to other services locally, clarification of remit of different services (i.e., distinction of exercise referral from slimming on referral) - Welcome statement and photo from service providers who they will speak to (i.e., first point of contact)
Belief in ability to exercise at a level that will benefit	Educational component	- "*Did you know…*" section highlighting health and wellbeing benefits of exercise

Barriers	Strategy	What the patient will see….
Having a previous poor experience of either exercise, or health promotion services	Modelling	- Case study example (person who has not enjoyed exercise in the past)
Not believing that there is a problem	Facilitation of self-monitoring	- Provision of a pedometer - Provision of self-monitoring diary - Suggestion patients monitor their 'usual week' using the pedometer, and take this to discuss on their first appointment
Perceiving low enthusiasm from referrers	Provision of feedback (to referrers on patient progress) Provision of information (to referrers on service)	- Referrers receive updated information about the programme prior to the study start (this should remain available in the surgery) - Referrers receive a letter for each patient on exit or discontinuation (links to the service website for more information) - Referrers receive quarterly update on referral figures across the locality (as per other public health referrals such as stop smoking)

Phase 2 – To boost engagement and adherence to the programme post-initiation

Barriers	Strategy	What the patient will see….
Failing to meet expectations (focussing on weight loss, not than exercise related outcomes)	Facilitation of self-monitoring Exercise goal setting Modelling Education component	- Provision of a pedometer and self-monitoring diary to emphasise aims in terms of increasing physical activity, not reducing weight - Orient patients to set goals in terms of physical activity improvements rather than weight loss (more achievable, more visible) - Case study example (person who has achieved benefits in how they feel, not necessarily through weight loss) - (see above)

Barriers	Strategy	What the patient will see….
Lack of social support	Facilitation of peer support	- Establishment of an opt-in buddy scheme - Establishment of a social networking forum - 'Buddy vouchers' to exercise with a friend at similar subsidised cost initially
Perceiving low enthusiasm from exercise consultants	Facilitation of mutual understanding	- Provision of flow chart, and welcome statements so patients know who is who, and what their role is (i.e., managing expectations) - Provision of written information prior to first appointment may reduce need for information transmission, and free-up time available for discussion of patient experiences/preferences - Encouragement for patients to bring along baseline steps diary for starting conversation - Training of exercise consultants to focus on proximal exercise rather than weight loss goals (which they are likely to feel more confident about the client achieving, and therefore more naturally enthusiastic to endorse; pedometer and diary will serve as a prompt to focus on exercise goals)

Dissemination activities

Conference posters and presentations:

November 2014, European Public Health Conference (applied, no response as yet)

- F E, Beck. F B, Gillison. M, Koseva. M Baquedano. M, Standage *The differential impact of an exercise referral scheme on physical activity outcomes according to indicators of social deprivation*

September 2014, British Health Psychology Conference, York (oral presentation)

- Beck, F., Gillison, F.B. & Standage, M. *Not just for research: The role of process evaluation in enhancing health promotion in established practice*

August 2014, European Health Psychology Conference, Austria. (oral presentation)

- Gillison, F.B., Beck, F. & Standage, M. *The impact of patient exercise referral schemes on quality of life.*

December 2013, UK Society of Behavioural Medicine, Oxford (poster presentation)

- Beck, F., Koseva, M. & Gillison F. *Not just for research: the role of process evaluation in enhancing health promotion in established practice*

February 2012, South West Public Health Scientific Conference, Weston-Super-Mare (poster presentation)

- Koseva, M., Beck, F. & Gillison, F. *Exploration of Passport to Health Exercise Referral Scheme Uptake, Completion and Outcomes in Bath and North East Somerset (B&NES)*

Proposed local and network dissemination activities:

Within B&NES

- Dissemination to the CCG facilitated through public health steering group members (e.g., through the learning seminar programme that they run)
- Evaluation tool kit linked to Quartets Funding (i.e., could be sent out with application packs)
- Links to the intelligence team to discuss where the evaluation toolkit would be best sited on the council website for use by a range of services

Local media

- As part of the council's ongoing information regarding physical activity opportunities locally
- Through university marketing team

Local networks

- Wesport, County Sports Partnerships
- Council team away days
- Circulate to Sirona and other commissioned organisations

Proposed sites circulation / upload for main report:

South West Public Health Observatory http://www.swpho.nhs.uk/

- Final reports to be submitted at project end
- Provide access to evaluation toolkit at project end

Public Health England

- Final reports to be submitted at project end
- Provide access to evaluation toolkit at project end

National Obesity Observatory http://www.noo.org.uk/

- Final reports to be submitted at project end
- Provide access to evaluation toolkit at project end

Proposed academic outputs:

Paper 1: *Exploring the application of taxonomies of behaviour change techniques in evaluating and enhancing established health promotion practice.* Target outlet: J Epidemiology and Community Health

Paper 2: *Why do people referred to exercise referral services fail to enrol? A qualitative study.* Target outlet: Public health related journal

Paper 3: *Exploring service users experiences of an exercise referral programme.* Target outlet: Psychology related journal (J of Health Psych / BJHP)

Paper 4: *Predictors of short– and long-term success in an exercise referral scheme*. Target outlet: Journal of PA and nutrition.

Paper 5: *A mixed methods exploration of barriers to referral to an exercise referral programme among GPs and practice nurses.* Target: Br J Gen Practice

Passport to Health Initial Consultation Protocol

INTRODUCTION

- Introduce yourself
- Briefly explain your role
- Give a brief agenda for the consultation

INFORMATION GATHERING

- Clients understanding of reason for the referral
- Physical activity assessment
  - *Motivation for change*
  - *Current activity levels*
  - *History & Preferences*
  - *Barriers to change*
- Medical history
  - *Current issues*
  - *Medication*
  - *Past issues*
  - *Barriers to change*
- Dartmouth Coop and Questionnaires
  (Rationale, completion & feedback)

INFORMATION GIVING

- Physical outcome measures
  (Feedback if they want it)
- Explanation of physical activity
  - *Definition*
  - *Potential benefits for them*
- Explanation of Passport to Health
- Explanation of your role within the programme and theirs
- Facilities and activity options
- Buddy vouchers
- Any questions

SHARED DECISION MAKING

- Check if client wishes to engage with the programme
- Behaviour change techniques
  - *Rationale for use*
  - *Goal setting; focus on process goals*
  - *Barrier identification*
  - *Self-monitoring; activity diary*
  - *Action planning*
- Closing; plan next session etc.

Appendix 7: Probability statistics on which cost-efficacy calculations are based

CHD

- Probability of CHD when active, p=0.014
- Probability of CHD when not active, p=0.027
- Utility of CHD state = 0.55
- Life years remaining after onset of CHD = 18.41
- Lifetime treatment costs associated with CHD state = £17,728
- QALYs associated with CHD state = 9.94

Stroke

- Probability of stroke when active, p=0.011
- Probability of stroke when not active, p=0.015
- Utility of stroke state = 0.52
- Life years remaining after onset of stroke = 5.12
- Lifetime treatment costs associated with stroke state = £1,965 (event cost)
- QALYs associated with stroke state = 5.15

Type II diabetes

- Probability of diabetes when active, p=0.022
- Probability of diabetes when not active, p=0.044
- Utility of diabetes state = 0.7
- Life years remaining after onset of diabetes = 28.13
- Lifetime treatment costs associated diabetes state = £50, 309
- QALYs associated with diabetes state = 14.18

Background/non disease state

- Utility of non-disease state = 0.7
- Average age of cohort = 48 years
- Lifetime treatment costs associated non-disease state = £0
- Average age of mortality = 84 years
- QALYs associated with non-disease state = 17.18