Tackling obesity: an evaluation of Age Concern Kingston upon Thames' fit as a fiddle programme

October 2011

LOTTERY FUNDED

Foreword

This report evaluates year one of Age Concern Kingston's Tackling Obesity programme, which is being funded for two years by Big Lottery's national fit as a fiddle initiative. The report, by leading European research and consultancy company Ecorys, was commissioned by the administrator of the funding. The researchers used the framework and methodologies of Social Return on Investment (SROI) to evaluate the social value of the programme, and concluded that the approximate social return on investment generated by Tackling Obesity is about **£3.50 for every £1 invested**.

Our fit as a fiddle programme aims to tackle obesity amongst older people from groups deemed hard to reach: older people with weight and/or other health problems, from ethnic minorities or from areas of social deprivation. In this it aligns with the health improvement objectives of the NHS locally. The programme arose from learning from our previous three-year Active Living scheme which successfully engaged over 2,000 older people in increasing their levels of exercise. We wished to build on this success and continue to promote active and healthy ageing as a priority for the local area, whilst taking an innovative targeted approach.

The needs of older people from hard to reach groups have been well documented in local and national reports (*Kingston Joint Strategic Needs Assessment*, *2010*; *Health Care London Needs Assessment 2009*.) Research by Sports England in 2009 demonstrated that just 17% of older people in Kingston were active enough to maintain health. Levels of obesity are higher, and opportunities to get active lower, in areas of social deprivation. Our programme has measurable health and well-being outcomes and wider impact in terms of the improvements in lifestyle of the participants, and learning what works in motivating older people to exercise more.

We engage participants by providing free Keep Fit classes and activities that older people may not have tried before: Nordic walking, Bollywood, Line Dancing, and Aquacise. Courses last six weeks and are linked with healthy lifestyle workshops. In its second year, since May 2011, the programme has targeted another excluded group: older people with mental health needs, including dementia.

The evidence shows that the approach adopted, tested and refined by Age Concern Kingston over the past five years is proven to be highly successful in engaging older people in physical activity, recreation and exercise, and to change their eating habits for the better. The model has produced demonstrable results and has also been successful in motivating and supporting people to sustain the healthy habits learned. The programme has been shortlisted for the 2011 Guardian Public Services Awards.

Shane Brennan, Chief Executive, Age Concern Kingston upon Thames, October 2011

shane@ageconcernkingston.org

Ecorys Case study report – Tackling Obesity

1.1 Introduction

Ecorys has been commissioned by Age UK London to evaluate Age Concern Kingston's Tackling Obesity project. This case study takes a 360 degree in depth look at this fit as a fiddle funded project which ran from April 2010 until March 2011.

The case study has been informed by in-depth interviews conducted with key stakeholders and beneficiaries triangulated with other data sources including monitoring data, reports and any self-evaluation outputs generated by the project.

Interviews were conducted with the project management team within Age Concern Kingston; and with key partner stakeholders such as Kingston Primary Care Trust, the Royal Borough of Kingston upon Thames Local Authority, and DC Leisure, who provide the leisure services for the borough. In addition a focus group was carried out with 13 older people who had been involved in both the Alpha Road and the YMCA fit as a fiddle projects. The fieldwork was carried out by Nicolas Lee from 6th-15th July 2011.

This case study covers the following key themes:

- Impacts on older people
- Equality and diversity
- Partnerships
- Sustainability
- Economic benefits of fit as a fiddle

1.2 Background information

The aim of Age Concern Kingston's fit as a fiddle project was to tackle obesity through physical activity and promoting a healthy lifestyle. The programme comprised of ten 6-week courses delivered across the borough over the course of a year. These courses lasted 2 hours each week and were divided between an hour of physical exercise, which aimed to promote flexibility, strength, balance, coordination and muscle tone, and a similarly timed healthy lifestyle workshop which focused on healthy eating, menu planning, sharing recipes, mapping exercises, and incorporated a weekly weigh-in. In addition to the weekly weigh-in, waist and BMI measurements were recorded at the start and end of each 6-week programme. These measurements in combination with self-evaluation questionnaires completed by older people at the start and end of the programme provided evidence of the impact on the beneficiaries. Though there are alternative weight management programmes and activities promoting greater participation in the area, there is nothing that specifically focuses on the older people.

"I went to my Doctor's surgery and everywhere I could and there was nothing for senior citizens, nothing at all." – fit as a fiddle participant

Though the programme was initially targeted to engage around 80 older people, ultimately it achieved more than doubled this target with 166 older people participating from across the borough. This could be explained in part due to the activities themselves which aimed to be both fun and involve moderately intensive activity to support weight loss and fitness. They involved Nordic Walking, Keep Fit, Bollywood Dancing, Line Dancing and Aquacise. These activities were chosen both in consultation with older people themselves and were also the most popular activities in an Active Living programme for people aged over 50 which ran in the borough and had acted as a precursor to fit as a fiddle. The programme was publicised in a wide variety of areas including in local community shops, doctor surgeries, neighbourhood centres, libraries, presentations to social clubs, and in college course booklets.

"*It's a fantastic programme and is flexible as its focus evolves, last year it was obesity and this year its mental health. It's driving [the areas that are] prominent. It's not just an activity programme; it actually has a focus on a specific population, which I think makes the difference".* – Partner organisation

Given this previous Active Living initiative there were minimal teething problems in establishing the fit as a fiddle programme, strategic partnerships were already in place, and the that programme acted as a template in setting up the fit as a fiddle activities. However the more successful projects tended to exist in areas where there was a strong community spirit such as at the Alpha Road project, and with the Milaap Centre for Asian Elders among others.

The fit as a fiddle programme funded one member of staff for 25 hours per week to both coordinate and deliver the programme for the year. Initially volunteer mentors were proposed to lead each groups, however in order to make it very local to specific target groups the project coordinator had to ensure activities were provided within the targeted community. Therefore instead each activity was lead by a local champion, these were participants who were either identified prior or during the programme and whose role it was to provide a focal point to the activity, to help with publicity, and ultimately to play a role in the sustaining of the activity.

"The key thing that makes it a lot more concentrated and successful is that you have a dedicated coordinator, who is just running this programme." – Partner organisation

1.3 Impacts on older people

The programme had inbuilt mechanisms to quantitatively evidence weight loss for the duration of each 6-week programme, weight was measured on a weekly basis in addition to measurements in body mass index & waist size taken at the beginning and end of the course. The results of these measurements revealed a high degree of success of the programme in achieving the goal to lose weight: 73% of participants lost between 1-5kg weight during the programme; 63% reduced their waist size by between 1-5 cms; and 55% reduced their Body Mass Index by 1-3 points. Overall 77% of participants demonstrated a reduction in one or more of these measurements. The exit questionnaire revealed that 82% of participants felt that they had lost weight.

1.3.1 Healthy eating

The impacts of the programme on the healthy eating habits of older people have been evidenced both through the self completion questionnaires completed at the beginning and end of the programme which provided qualitative data relating to improvements in their eating habits, and in the focus group conducted with former fit as a fiddle participants.

The questionnaire revealed that the number of participants who reported that they ate a healthy balanced diet had increased from 58% to 94% by the end of the programme, likewise the number of participants who now ate fish twice a week had increased from 48% to 73%, similarly those that ate wholemeal bread, pasta, or rice increased from 73% to 88% by the end of the programme. 93% claimed that they had learnt health eating habits, and 75% claimed that they applied healthy eating habits.

These findings were supported in the focus group where the healthy living workshops were a much missed aspect of the programme. Weight loss was experienced widely, and in the minority of instances where this hadn't occurred, participants expressed that their body shape had changed. These developments had allowed a number of participants to wear clothes that they hadn't been able to fit in before. Some reported that their cholesterol had been lowered whilst they were undertaking the programme.

The main messages from the workshops were around: rehydration, using less salt, less fat, less sugar, cooking from fresh ingredients and avoiding processed food. Free equipment such as Tupperware (to encourage storing of freshly cooked meals in the freezer) and special microwave dishes (in order to steam fish) proved popular.

"[Healthy eating aspect] opens your eyes to a lot of things you don't realise. I came from an age when my mother had to make do from anything, like tripe, everything cooked in a saucepan…She only had about 3 bob a week to feed us all, what an age! What knowledge I gained. I sat down and thought 'my god, my mother almost killed me.'" – fit as a fiddle participant

The participants acknowledged that one of the key success factors of these workshops was completing a diary to record what had been eaten on a weekly basis and monitor weight loss. This was an effective tool in delivery because they could see exactly what they were doing on a weekly basis, set targets for themselves and keep on track.

"[The diary was] good for setting objectives, it was very motivational [because there was] very gentle peer group pressure" – fit as a fiddle participant

1.3.2 Physical exercise

The self-evaluation questionnaire revealed that 99% of participators felt that their activity levels had increased by the end of the programme. Prior to the programme 48% had undertaken moderate exercise once or twice a week and 18% had undertaken none at all. The end questionnaire revealed that 86% were undertaking moderate exercise at least 3 to 5 times a week.

These increases in physical activity also increased participants' fitness and enabled them to undertake activities that they had been unable to engage in before. Some were more likely to walk longer distances, a number were finding that they were not breathless after physical exercise so could for example climb stairs more easily.

"There's a difference, not only have I started this [keep fit classes] which was the very first time I'd done any exercise. But I also started walking again which I used to love, and I do 3 hours a week, an hour every other day. And that is only from [fit as a fiddle], Its amazing, I don't get so breathless, I can now walk again." – fit as a fiddle participant

"I can play tennis and football with my grandchildren and I'm not getting breathless like I used to" – fit as a fiddle participant

In addition to the fitness benefits of the programme, participants also reported that they had improved muscle tone and were stronger. These physical improvements enables some of the participants to have an enhanced standard of living, two of the participants reported that they had been able to take baths again, where previously they were not strong enough to easily get in and out of the bathtub.

"When I first started coming, I didn't have strength in my arms. I couldn't even get out of the bath, my knees weren't as strong. So I stopped having baths. Since I've been coming I can now do that. My arms and knees have been strengthened." – fit as a fiddle participant

Likewise the physical activity aspect of the programme was widely held to have enhanced participants' posture, and improved balance and flexibility. These benefits had impacted on their coordination and their mobility and ability to walk properly. A large proportion of the focus group reported a reduction in the number of falls they had experienced.

"I don't fall over so much, now it's stopped. I feel much more confident that I'm not going to fall. It's really tremendous what its done for our balance." – fit as a fiddle participant

"I found within the first 6 weeks, my doctor was saying 'What are you doing? There's a difference, you're able now to do this [move arms more flexibly]'. And they could see the whole thing was now improving. I couldn't get my arms up to do my hair, but I can now". – fit as a fiddle participant

1.3.3 Mental wellbeing

The social aspect of the fit as a fiddle programme was consistently highlighted as an important benefit of partaking in the programme. 99% of those completing the questionnaire highlighted that group support had been an important factor in helping complete the programme. The locally-based nature of the provision gave the realisation that participants were neighbours, and they would help each other out and meet socially outside of the programme. They shared recipes within the healthy living workshops, and gave each other advice about places to shop.

"It's become like a social club, we've gelled" – fit as a fiddle participant

Participants enjoyed doing exercises with people who were in a similar physical condition, those who had experienced mixed-age classes were embarrassed by their limitations and often found that exercises were inadequately adapted to their ability

"I went to another class, but eventually it got so embarrassing… they had 20 mins doing exercises on the floor, but I was finding this more and more difficult due to my arthritis in my knee. I found that I was having to crawl to the radiator to pull myself up. But it was really embarrassing because there were lots of young mum's there, leaping about all over the place." – fit as a fiddle participant

In addition, the physical activities were enjoyable and participants had fun. Many highlighted that doing the exercises lifted their mood and made them feel good about themselves, building their confidence to try new exercises and activities. Some reported that they felt younger.

"When you get old you don't think you can do things, so you don't try. It's given me confidence I now know I can do anything" – fit as a fiddle participant

"Because we get so encouraged and praised [by each other], you don't feel like a senior citizen no more. That's what its done for me." – fit as a fiddle participant

1.3.4 Other impacts

Longer term impacts of sustained physical exercise, improved mental wellbeing and healthier lifestyles are expected in preventative health. Long-term health benefits highlighted by a partner organisation could be around stroke prevention, reduced osteoarthritis, and reduced risks of cardio-vascular disease and cancer, as well as a lower risk of depression.

"If people do these programmes and are more physically active, it helps with mind health. They're then more social which then helps with their wellbeing emotionally… They're likelier to think healthier in terms of trying to help themselves a bit more instead of just turning to the GP. For people of this age group isolation is such a big problem, it makes a big difference to be with other people. Hopefully that will make them more motivated to do more, to join another club or do something else." – Partner organisation

In the 9 months after completing the fit as a fiddle programme, some of the participants noted that they had visited their GP less often than they would normally have done.

"I haven't been to my doctors since I've been here. [Before] I would have gone 5 or 6 times a year I would have thought." – fit as a fiddle participant

1.4 Meeting the needs of older people including hard to reach groups

At the outset the programme was envisaged to target hard to reach groups in the borough, specifically those living in areas of social deprivation, or from ethnic minority groups. These

had been highlighted in the borough as those with the greatest need to address weight and fitness issues by the PCT and Public Health Reports.

In order to target those on areas of deprivation, areas were identified, links were established with key contacts in these areas, and community meetings were attended by the coordinator to establish activities which would interest the community. Importantly local community venues were utilised that could deliver both aspects of the programme, and would engage the community.

"The dedicated project worker was crucial… Engaging and delivering as well as strategically planning. There was a consistent face, a key person who can inspire confidence by engaging people with activities that they actually wanted to do. People in hard to reach areas have a lot of barriers so the consistent messages are really important. Also local community venues were identified, which is really important as people are less likely to travel further or go miles out of their way" – Partner organisation

Examination of the demographics reveals that ultimately the programme was very successful at targeting ethnic minority groups with 38% representation, 33% of which were from an Asian background. To target these groups, the coordinator established links with the Milaap Centre for Asian Elders, and with a Tamil group and advertised the sessions in their specific newsletters. In these cases the fit as a fiddle session was brought to pre-existing weekly social groups to help ensure participation as it was felt that perhaps these communities would not engage otherwise. The healthy living workshops were also tailored to be culturally sensitive, for example advising to use sesame oil instead of olive oil to make it relevant.

"[It's] hitting a large number of people that without that programme would never have engaged with physical activity" – Partner organisation

The fit as a fiddle did have problems engaging older male participants, with only 11% over the year. This was potentially due to the types of activity being offered. Nordic Walking and Aqua-cise were more popular activities for men, and activities such as Keep fit and dancing seemed to put men off. Anecdotal evidence suggested that male participants wanted more competitive activities, where they could more easily target achievements.

1.5 Impacts on organisations, and partnerships

Fit as a fiddle matched Age Concern Kingston's strategic objectives, and the funding enabled them to continue with the successes that had been experienced with the Active Living project. They utilised existing partnerships with the local authority, the local PCT and DC Leisure (local leisure services provider) which enabled them to hit the ground running and proved a valuable resource, providing expertise, knowledge and general mutual support. For example, the partnership not only provided advice and information on public health, it also identified potential contacts which helped to set up projects, and enabled access to organisations and venues that would have been difficult to gain access to otherwise. Furthermore the partnership was crucial in identifying exit and progression routes for participants.

"*You can't do this sort of job without partnerships…because it gives it strength and validity. The PCT are targeting similar people to us, they had various programmes. We had an understanding if people were suitable for programmes we can mutually refer*." – Age Concern stakeholder

From a PCT perspective the fit as a fiddle programme fitted in with their health agenda, and provided an opportunity to identify across the borough the health needs of the older population as well as health and equalities. It ensured that the NHS health agenda was understood and information shared on it. They were using a case study of the project in their Annual Public Health Report, as evidence that they are meeting their health objectives.

From the perspective of the DC Leisure the fit as a fiddle project had had a big impact. They had seen a greater involvement of older people using their facilities, and there has been a spike in the volume of older people taking up the Active Kingston card enabling subsidised access to facilities. They were convinced a fair proportion of this spike was due to fit as a fiddle because at the end of each 6 week programme the card was discussed, application forms handed out, along with information sheets and timetables. Anecdotal evidence suggested that the majority had never heard of the card before and so would have joined for the first time. Though the spike did coincide with the change in government policy entitling vulnerable groups to free swimming which could have accounted for some of the increase. In addition the programme helped change their organisational priorities. Traditionally the focus has been on children, families or middle-aged people and where they had been targeting resources. However the success of the programme acted as a catalyst, and now they were more actively targeting harder to reach communities. They had developed experience of how to work effectively with third sector organisations which ultimately would fit with their main aim to get more people to use the leisure centres.

The local authority had noted an increase in participation in physical activity in older people, which has a positive effect on their Active People survey, looking to increase sporting participation. It was felt that awareness had been raised about this target audience who required a service that previously had not been offered. They were particularly impressed that hard to reach groups had been engaged in an activity that previously they would never would have engaged with.

1.6 Sustainability

One of the main success factors of the fit as a fiddle programme has been the sustainability of the groups afterwards, All but two of the groups are still continuing between 3 months to a year after the respective 6-week programmes came to an end. Some of the activities, such as Nordic Walking, were free the programme having supplied all the equipment required, others continued at a reduced rate for participants.

"*I've seen groups sustained which was a real surprise and not something I see with any other groups I organise. Usually attendance starts trailing off during [programmes] and few people*

end it let alone continue it. It's been a real surprise that the participants have continued the programme at their own expense in the main." – Partner organisation

One of the factors has been the use of 'champions', participants who'd been identified within the 6-week activity as enthusiastic and who ultimately would be able to drive the project forward. In addition to this the partners all fed into progression routes and worked effectively at looking for further options once each fit as a fiddle programme finishes.

"Part of brief is to get exit routes and pathways so that when people finish they are not in a vacuum, there's a strategy. This has occurred with this age group more than for example with children with weight management issues. We have very good rate of continuation, either continuing an activity or taking up an Active card." – Partner organisation

At the end of the 6-week programmes participants were issued with booklets identifying potential follow on programmes. The participants found this particularly useful to identify progression routes after their programme. At one leisure centre they had a keep fit, aqua-cise and a supervised gym programme for over-50s since the 1980s that had been in decline for sometime. But since fit as a fiddle its started to grow again for the first time in a few years.

“At the end she found a range of exercises that we liked and so could continue with and compiled a booklet of various exercise classes in the borough and was able to say which ones she personally knew the instructors [who could pitch at the right level] and so was a very personal guide to the sorts of exercises you might be looking for." – fit as a fiddle participant

1.7 Social value of the project

This section considers the 'social value' of Age Concern Kingston's Tackling Obesity project. Although a full Social Return on Investment (SROI) analysis is not within the scope of this study, the approach and framework as endorsed by the Cabinet Office / Office for Civil Society is used to generate values for the social impact of the project.

In order to quantify what is sometimes referred to as 'social value'; this encompasses social benefits with both a monetary value (such as public service costs avoided, or productivity improvements) and a non-monetary value (e.g. the work done by volunteers, or pollution to the nature environment). SROI embeds aspects of different methodologies, including those often referred to as 'cost-benefit analysis', 'social accounting', 'triple bottom line' and 'economic impact assessment'. Ecorys was involved in the Steering Group which helped develop Government guidelines for SROI in 2008[1].

1.7.1 Summary of data available

As part of the project's monitoring, quarterly updates and individual activity group reports and an end of project report were produced. Monitoring data was also recorded on to a database which contains SNAP data, health status, self evaluation questionnaire (entry and exit), BMI, weight and waist measurements.

A total of 97 beneficiaries completed the entry questionnaire (before the project) of which 77 completed the exit questionnaires (after the project) that were captured and recorded by the project management team.

A detailed SROI impact map table can be found in Annex 1, which provides a full overview the assumptions, sources of data and a break down of the calculations used in the SROI analysis.

1.7.2 Value of services provided

The Tackling Obesity project delivered ten six-week courses, which combined an hour of physical activity (i.e. Nordic walking, keep fit, Bollywood dancing, line dancing, and aquacise) with an hour workshop on healthy lifestyle (including a weigh in, discussions on healthy eating, menu planning, recipes and exercise). A total of 166 beneficiaries from across the borough participated in Tackling Obesity (table 1.1).

[1] http://www.sroiproject.org.uk/

Table 1.1 Number of classes and beneficiaries

Physical activity and healthy lifestyle workshop	No. of six week classes	Total no. of beneficiaries
Nordic Walking	3	43
Keep Fit	4	81
Line Dancing	1	10
Bollywood	1	16
Aquacise	1	16
Total	**10**	**166**

Source: Tackling Obesity End of Project Report

The first step of the SROI analysis is to calculate the total value of the services provided. The market value of the services is estimated to be £10 per week, which is based on a proxy of the average unit cost of attending a local group exercise class (£.5.20) and a local weight loss group (£4.80) (table 1.2). These two types of classes provide similar activities as the Tackling Obesity project and are estimated to be of a similar value. It assumes that beneficiaries would receive similar services and benefits if they took part in a local group exercise course and a weight loss/healthy lifestyle class[1].

Table 1.2 Market value of alternative services

Average market value of similar services	Average unit cost per hour
Local group exercise classes*	£5.20
Classes provided by local healthy lifestyle/weight loss group+	£4.80
Total	**£10**

*Source: * Average cost of classes at Malden Centre and Kingfisher Leisure Centre, Kingston; + Average cost of classes at Weight Watchers, Slimming World, and Rosemary Conley*

Tackling Obesity targeted specific groups of 'hard to reach' older people and 73% of its beneficiaries had a BMI of 25 or above. Although there was other exercise classes for older people available locally which some beneficiaries might have used in the absence of the Tackling Obesity project, none were specifically targeted at those who were overweight. Likewise, none of the other healthy lifestyle/weight loss groups available locally were specifically targeted at older people.

The beneficiary focus groups and the self evaluation questionnaires revealed that a high proportion of beneficiaries would not have been physically active and would have not taken up exercise or weight loss classes in the absence of the project (18% of beneficiaries were inactive prior to the project). For some beneficiaries the cost of these classes exceeded what beneficiaries were willing or able to pay, which acted as an initial barrier to participation.

[1] Financial proxies have been selected that represent the value to the stakeholder as much as possible. Each financial proxy and its source are detailed In Annex 1 on the impact map.

Therefore the associated outcomes for the beneficiaries are highly attributed to the project, and an estimate of the project's attribution is 80%.

For the physical activity classes, the weekly cost saving to each beneficiary is estimated at £5.20 per week for the initial six weeks of the project, based on the average unit cost of a similar weekly local group exercise class available at local leisure centres in Kingston.

After the project finished, many of the physical activity classes continued, however the healthy lifestyle workshops only ran for the six weeks of the project. It is assumed that after the project finishes beneficiaries will no longer be supported to maintain their healthier diets and lifestyles. Consequently drop off is likely to be relatively high but it is assumed that approximately half may continue to eat healthier diets and manage their weight (83 beneficiaries). This assumption was made based on the beneficiary self evaluation questionnaire, as 70% of beneficiaries intended to continue to lose weight or maintain a healthy weight through healthy eating and/or 29% stated that they would join a weight loss group (table 1.3).

Beneficiaries continuing the physical activity classes after the project finished, paid a subsidised rate of £3 per weekly class which pays for cost of the venue and the instructor, so the cost saving for each beneficiary continuing would be £2.20 per week, assuming that the market value of the services was still £5.20 per hour.

A conservative estimation of the number of beneficiaries continuing physical activity classes after the project finished is 100 beneficiaries, assuming that 64% of beneficiaries sustained regular physical activity for the remaining 46 weeks of the year (equivalent to a 36% drop off rate). This assumption is based on the beneficiaries' responses to the self evaluation questionnaire, as 70% stated that they aim to maintain or improve their activity levels by continuing to exercise and 59% stated that they aim to maintain or improve their activity levels by joining an exercise group.

Table 1.3 Market value of Tackling Obesity

	During the project		After the project	
Activity	Physical activity class	Healthy lifestyle workshop	Sustained physical activity	Sustained healthy lifestyle and diet
Market value of services	£5.20	£4.80	£5.20	£4.80
Number of weeks	6	6	46	46
Number of beneficiaries	166	166	100	83
Attribution	80%	80%	80%	80%
Impact	**£4,145**	**£3,825**	**£19,140**	**£14,660**

Source: SROI Analysis

1.7.3 Effects on behaviour and associated outcomes

In addition to estimating the value of services provided, it is also important to consider the effects on behaviour and associated outcomes of project. The following section examines the effects on behaviour and associated outcomes in more detail to show some of the softer outcomes that beneficiaries gain from the project. However for this SROI analysis, these associated outcomes are accounted for in the calculation of the value of services provided. Attempting to value each of these associated outcomes separately would potentially double count the benefits and may overestimate the quantity of value-added.

Physical activity

Inactivity and the lack of exercise have a range of social costs, both to the individual and to society. Beneficiaries completing the self evaluation questionnaire were asked to report how often they take moderate exercise, both before and after participating in the Tackling Obesity activities (table 1.4). It can be assumed that the distribution of the answers to the entry and exit self evaluation questionnaire shows that the project had an impact on the levels of physical activity taken over the course of the project.

Table 1.4 Physical activity levels of beneficiaries

	Before the Project (n = 90)	After the project (n=76)
I have taken no exercise in the last 0 - 3 months	18%	0%
I take moderate exercise for at least 30 minutes 1- 2 times a week	48%	15%
I take moderate exercise for at least 30 minutes 3- 5 times a week	34%	59%
I take moderate exercise for at least 30 minutes 6 -7 times a week	0%	26%

Source: Beneficiary self-evaluation questionnaire survey

There is also evidence that behaviour change would be likely to be sustained over time, with many of the physical activity classes continuing after the project finished, due to popularity of the classes and the dedication of the project's operational champions.

Healthy eating

Table 1.5 shows the healthy eating habits of beneficiaries before and after participating in the project. The shift towards healthier eating seen over the course the project in all assessed areas. For example, there has been a significant increase in the proportion of beneficiaries eating a healthy balanced diet from 58% before the project to 94% after the project.

Table 1.5 Healthy eating habits levels of beneficiaries

	Before the Project (n=88)	After the Project (n=77)
I eat three meals a day	94%	92%
I eat 5 portions of fruit and vegetables a day	80%	88%
I eat starchy foods (e.g. bread, pasta and rice) every day	73%	88%
I eat fish at least 2 times a week	48%	73%
I choose to eat low fat options (e.g. milk, spreads, meat, cheese etc) every day	88%	95%
I eat high fat/sugar snacks (e.g. cakes, biscuits crisps, chocolate) every day	23%	9%
I eat a healthy balanced diet based on the 4 main food groups every day	58%	94%

Source: Beneficiary self-evaluation questionnaire survey

1.7.4 Associated outcomes linked to changes n physical activity and healthy eating

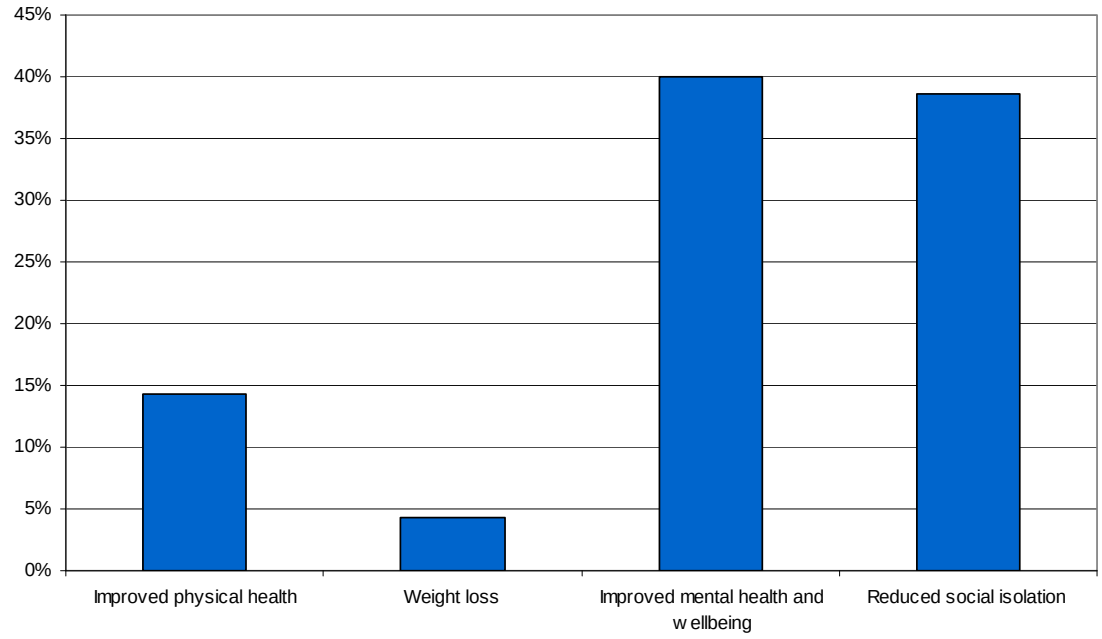
There are also a number of associated outcomes which beneficiaries experience as a result of changes to their level of physical activity and healthy eating, which are shown in table 1.6 and figure 1.1. These are the outcomes which beneficiaries regarded as most important to them.

Table 1.6 Associated outcomes linked to changes physical activity and healthy eating

Associated outcomes	Indicator
Improved physical health	Beneficiaries reporting improved fitness / balance / strength
Weight loss	Recorded improvements weight, BMI and waist measurements
Improved mental health and wellbeing	Beneficiaries reporting an increased in their self esteem and confidence
Reduced social isolation	Beneficiaries reporting that they have made friends and enjoyed being in the company of other people

Source: Beneficiary self-evaluation questionnaire survey and faaf database -weigh in data

Figure 1.1 Beneficiaries response to the "best thing about the project"



Source: Beneficiary self-evaluation exit questionnaire

Figure 1.1 shows the qualitative responses from the open-end beneficiary self evaluation question "What was the best thing about the project?" The responses were coded into a set of outcomes which emerged from the responses i.e. improved physical health, weight loss, improved mental health and wellbeing, and reduced social isolation. The most frequently reported response was the impact the project had on mental health and wellbeing (40%), followed by reduced social isolation (39%).

Studies such as Huang and Humphreys (2010)[1], have found that participation in physical provides opportunities for socialisation and helps develop communication and cooperation skills, all of which may lead to a more fruitful life. It is thus possible that participating in physical activity produces not just transitory, but long-lasting happiness and wellbeing.

Even though only 3% of beneficiaries mentioned weight loss as one of the best things about the project, 55-73% of beneficiaries actually achieved improvements to their weight, BMI and waist measurements, during the project (see table 1.7) and 82% either strongly agreed or agreed that the project helped them to lose weight. Outcomes such as a weight loss and improved physical health are benefits which are likely to be more evident if beneficiaries sustain their participation in activities after the project finishes.

[1] Huang and Humphreys (2010) Sports Participation and Happiness: Evidence from US Micro Data. Working Paper No. 2009-2010, Department of Economics, University of Alberta.
http://www.ualberta.ca/~bhumphre/class/HuangHumphreys_v2.pdf

Table 1.7 Impact on weight loss, BMI and waist reduction

	%
Percentage of beneficiaries losing weight	73%
Percentage of beneficiaries reducing their waist measurement	63%
Percentage of beneficiaries reducing their BMI	55%

Source: faaf database -weigh in data

This was also supported by the findings of the focus group, as beneficiaries were asked to list the benefits gained from the Tackling Obesity project and rank them in order of importance (table 1.8). Interestingly there is a difference between what they reported to be the most important outcomes for them and what they thought were the best things about the project. One explanation would be that many beneficiaries joined the project with the intension of improving their physical health and losing weight, but were not necessarily expecting any positive impacts on their self esteem and confidence or meeting new friends and other people. This is supported by the view of one of the partners, “they say they didn’t join for the social interaction, however this became an important part of the project."

Table 1.8 Benefits ranked by importance

Benefits gained from the Tackling Obesity	Ranked according to importance
Getting fitter	1.9
Lose weight / improve tone body	2.3
Eating healthily	2.7
Improved strength & posture	3
Improved balance	3.3
Improved confidence	3.6
Increase in social contact and friends	5
Improved self esteem	5.4

Source: Beneficiary Focus Group

1.7.5 Value of champions input

Another important element to consider is the value of the time which both the strategic and operational champions gave during and after the project. The project’s champions were a key strength of the project, as they played a vital role in setting up and sustaining the classes after the project finished. Champions were also instrumental in securing some of the instructors and venues, and for publicising the classes.

For this SROI analysis, operational champions' time is valued at the current national minimum wage, as the project would have otherwise needed to employ support staff to carry out the basic tasks of the operational champions. On the other hand, as many of the strategic champions were local councillors, heads of residents association, or staff of the local PCT,

their time is valued at same rate as the average hourly pay of public service professionals for their strategic level of inputs to the project. As there is a difference in time contribution during and after the project, these have been calculated separately to provide a breakdown of the value of champions' time (table 1.9).

In the absence of the project, it is likely that some of the strategic champions would have found other projects to support instead, therefore a conservative estimate for this outcome is that it is 60% attributable to the project. It is assumed that after the project finishes that strategic champions would gradually wind-up their involvement in the project as their role was mainly to guide the project during its earlier stages and to build the capacity of the operational champions towards self-management.

Without the project's support it would have been difficult to engage with this hard to reach target group to take on the role of the operational champions, as many of the champions were not involved in volunteering opportunities or community activities prior to the project, so a high proportion of this outcome can be attributed to the project (80%). Even though the drop off rate of operational champions is likely to be relatively low immediately after the six weeks, as most of classes were sustained beyond the end of the project, it is assumed that approximately a third of the operational champions would discontinue their involvement during the first year e.g. if there is a drop in demand for classes or other opportunities arise etc.

Table 1.9 Value of champions

	Operational champions		Strategic champions	
	During the project	After the project	During the project	After the project
Number of champions	9	6	5	1
Value of time per hour	£6	£6	£17	£17
Time input per week	3 hours	1 hour	1 hour	¼ hour
Number of weeks	6 weeks	46 weeks	6 weeks	46 weeks
Attribution	80%	80%	60%	60%
Impact	**£780**	**£1,325**	**£306**	**£117**

Source: See Annex 1

1.7.7 Health outcomes

In addition to changes experienced by beneficiaries in terms of improvements in their physical health, there are also other associated health outcomes of the project such as fewer visits to the GP and a lower risk of obesity related health problems. This not only brings benefits to the individuals but also cost savings to the NHS (table 1.10). However, given the short nature of the project, it makes it difficult to demonstrate a sustained increase in activity and the benefits are likely to be heavily discounted as NHS resource savings are only likely to be felt a long way into the future.

Table 1.10 Value of health outcome

Outcome	Indicator	Impact[1]
Reduced demand on GPs	• Avoided GP visits	**£2,230**
Reduced demand on NHS services for treatment of fall related accidents	• Falls avoided • A&E visits avoided • Hospital admissions avoided • Long term care avoided	**£29,100**
Reduced demand on NHS services for treatment of obesity related health problems	• Coronary heart disease avoided • Type 2 diabetes avoided	**£1,530**

Source: See Annex 1

Studies such as Hardiker et al. (2009) found that an increase in physical activity is associated with fewer GP visits. The average number of times older people visit their GP is seven times a year, with an average cost of £28 per GP visit. Although it was difficult to determine the actual level of reduction, this SROI analysis uses a conservative estimate of one less visit to the GP per year, would be valued at £2,230 if 64% of beneficiaries sustained regular physical activity.

There is also likely to be reduced demand on NHS services for both treatment of fall related accidents and obesity related health problems. A recent Age UK study suggested that up to one in three (3.4m) over 65s suffer a fall each year and evidence shows that specific programmes for improving strength and balance can reduce the risk of falls by as much as 55%[2]. The avoided treatment costs of falls can be estimated from a calculation of A&E attendance and hospital admission rates (see Annex 1). Overall, it is estimated that there could be approximately £29,100 of avoided treatment costs of falls per year.

For obesity related health problems, there is a 20% to 35% lower risk of coronary heart disease and a 30% to 40% lower risk of type 2 diabetes in at least moderately active people compared with those who are inactive[3]. For this SROI analysis, the cost of treating coronary heart disease is calculated as an aggregate of risk assessment, managing patients with high risk, and annual statin treatment costs[4] (combined unit cost of £135). For type 2 diabetes, the average PCT spend on drugs prescribed in primary care for treating diabetes is used[5] (unit cost of £279). The total value of the benefit for obesity related health problems is estimated at £1,530.

[1] Based on an assumption that 64% of the 166 beneficiaries sustain a moderate level physical activity throughout the year, and that 75% of the outcomes is attributable to the project or 50% attributable for obesity related health problems. As these figures are based on average costs and not marginal costs (change in total costs resulting from a one unit change in output), this may slightly overestimate the value of these benefits.
[2] Age UK (2010)Falls in the over 65s cost NHS £4.6 million a day http://www.ageuk.org.uk/latest-news/archive/cost-of-falls/
[3] Department of Health et al. (2011) Start Active, Stay Active http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_128210.pdf
[4] NHS Scotland (2007) Management of coronary heart disease http://www.sign.ac.uk/pdf/chdaudit.pdf
[5] ACCA and the Audit Commission (2011) Costing care pathways: Understanding the cost of the diabetes care pathway http://www.audit-commission.gov.uk/sitecollectiondocuments/downloads/201105costofcarepathways.pdf

1.7.8 Value of informal carers

There are also negative impacts associated with the possible reduction in informal care. Studies such as Pickard et al. (2000)[1] have found that informal care is the most important source of care for most older people. It is estimated that approximately 80 % of people aged 65 and over living in private households, who have help with domestic tasks, rely exclusively on unpaid informal help, that is, help from spouses, other household members, relatives outside the household, neighbours and friends.

The General Household Survey identifies a total of 9% of adults as providing informal care to people aged 65 and over[2], which would be equivalent to approximately 15 beneficiaries of the project receiving informal care (table 1.11). The value of their time could be calculated as average pay of care assistants / home carers (£8.63 per hour). The amount of informal care given after the project is likely to be inversely proportional to the number of beneficiaries sustaining regular physical activity (estimated to be around 36%). Although it is difficult to determine the level of attribution of the project, as there are many other possible factors influencing the level of informal care, a conservative estimate would be approximately 50%.

Table 1.11 Value of informal carers

	During the project	After the project
Number of informal carers	15	10
Value of time per hour	£8.60	£8.60
Time input per week	2 hours	2 hour
Number of weeks	6 weeks	46 weeks
Attribution	50%	50%
Impact	**-£775**	**-£3,960**

Source: See Annex 1

1.7.9 Costs

The costs of the project are based on data provided by Age Concern Kingston. The annual spend of the project was reported by the project management team. The project received £45,500 from BIG, £1,125 from LDA, and a £500 grant from Bushey Park Trust between April 2010 and March 2011. The total actual spend was £40,603, giving the project an under spend of £4,897[3].

[1] Pickard et al. (2000) Relying on informal care in the new century? Informal care for elderly people in England to 2031. Ageing and Society, 20, 745-772.
http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=68941&fulltextType=RA&fileId=S0144686X01007978
[2] Pickard, L. (2002) The decline of intensive intergenerational care of older people in Great Britain
http://www.statistics.gov.uk/articles/population_trends/intergrational_pt110.pdf

[3] If there is an underspend on the budget you should either measure the additional benefit that full spending would bring or reduce the value of the financial input you record by the amount of the underspend. CfPS (2011) Measuring what matters - A

In addition to the actual spend the project also had some in-kind contributions. In-kind contributions are treated as a cost, as the benefits are valued and taken into account in the outcomes.

The time given by the 14 champions (five strategic and nine operational champions) is an in-kind cost. The value of their contribution is estimated to be approximately £1,086[1] during the project. As well the champions, there are also in-kind costs for the venues and instructors estimated to be approximately £2,190 during the project. The actual cost of venues and instructors are:

- Venues - local community hall and leisure centres provided space where activities could take place, occasionally providing them for free or at a lower rate, which would otherwise cost approximately £40 per week to hire.
- Instructors – the project also received reduced instructor rates, the normal cost for instructors would be £50 per week.

Therefore the total cost of the project is £43,879 (table 1.12) and the estimated costs to sustain physical activity classes after the project finished is £26,797 (table 1.13). Total value of inputs is estimated at £70,676.

Table 1.12 Spend and in-kind costs during the project

	During the project
Staff salaries	£20,575
Overheads	£4,656
Management of overheads	£10,453
Other costs	£4,919
Total spend	**£40,603**
In-kind costs of champions	£1,086
In-kind costs of the venues and instructors	£2,190
Total cost	**£43,879**

Source: Total spend based on figures provided by Age Concern Kingston

guide for overview and scrutiny committees about using 'social return on investment' to measure social value http://www.cfps.org.uk/uploads.php?file=sroiguidancefinal.pdf

[1] Includes an estimate of champions time displaced from other volunteering.

Table 1.13 Estimated costs to sustain project after the project finished

	After the project (46 weeks)
In-kind costs of champions	£1,442
In-kind costs of venues and instructors	£10,727
Cost of classes paid by the beneficiaries	£14,628
Total costs	**£26,797**

Source: SROI analysis calculation

1.7.10 SROI ratio calculation

For this SROI analysis, the net present value of the costs are calculated over one year and benefits are calculated over one to five year period, using standardised discount rate of 3.5%[1] (table 1.14 and 1.15). Even though there is potentially long term change as a result of Tackling Obesity, it is difficult to be confident about the duration or attribute all this change to the project. To take this into account this SROI analysis will be limited to five years to avoid over estimating the projects contribution to this change once beneficiaries finish the project.

Table 1.14 Overview of benefits

Outcome	Impact	Duration
Outcomes of services provided and changes to physical activity and healthy eating: - Improved physical health - Weight loss - Improved mental health and wellbeing - Reduced social isolation	£41,770	3 years
Reduced demand on GPs	£2,230	5 years
Reduced demand on NHS services for treatment of fall related accidents	£29,100	5 years
Reduced demand on NHS services for treatment of obesity: - Coronary heart disease avoided - Type 2 diabetes avoided	£1,530	1 year[2]
Reduction in unpaid informal care from relatives, friends, neighbours or others	-£4,735	3 years
Total Impact	£69,895.00	

Source: SROI analysis calculation

[1] HM Treasury (2003) The Green Book - Appraisal and Evaluation in Central Government http://www.hm-treasury.gov.uk/d/green_book_complete.pdf

[2] For treatment of obesity the impact is only calculated over one year as the treatment cost avoided could occur at any point in an individual's life and has been included in this SROI calculation one-off impact is rather than an impact that occurs every year after the project.

Table 1.15 Present value of each year (after discounting)

Outcome	Impact
Year 1	66,053
Year 2	63,819
Year 3	61,661
Year 4	27,302
Year 5	26,379
Total Present Value (PV)	£245,215
Minus the value of inputs	£70,676
Net Present Value (NPV)	£174,539

Source: SROI analysis calculation

The social return is expressed as a ratio of present value divided by the value of inputs. The approximate social return on investment generated by Tackling Obesity is about **£3.50 for every £1 invested.**

SROI ratio
£245,215 = **3.50 : 1** £70,676

1.7.11 Sensitivity analysis

Given that this SROI analysis is based on assumptions about the potential impact of Tackling Obesity, it is important to consider the implications of adjusting these assumptions on the estimates of the net cost and benefits of the project.

The largest benefit attributed to the project is the reduced demand on NHS services for treatment of fall related accidents. If this figure is revised to assume that the impact lasts three years instead of five years, this reduces the rate of return to £2.70 for every £1 invested. Another area where the benefits are also most sensitive to change are the impacts on the beneficiaries' in terms of improvements in their physical health, weight loss, mental health and wellbeing and social interaction. If we adjust the drop off rate of sustained physical activity from 36% to 50%, this still provides a good rate of return of £2.60 for every £1, so even if a significant change is applied to the assumptions there is still a good level of social value created by Tacking Obesity.

Annex 1: Tackling Obesity SROI Impact Map

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit costs	Source and assumptions	Drop off	Attribution
Beneficiaries (older person)	Improved physical health Weight loss Improved mental health and wellbeing Reduced social isolation	Improvements in fitness, balance and strength Improvements in Weight, BMI and waist measurements Increase in self esteem and confidence Making friends and enjoying being in the company of other people	**166**	Average cost of weekly local group exercise classes	£5.20 per hour	Assume that beneficiaries would achieve similar outcomes if they joined a local group exercise course Assume a weekly cost saving of £5.20 per beneficiary for the initial six weeks, which is equivalent to the average cost of weekly local group exercise course. After project finishes, assume a weekly cost saving of £2.20 per beneficiary continuing, as the weekly cost of classes is subsidised at £3. Price list for local group exercise classes for over 50s: Keep Fit £50 per term (£3.03 per hour) Pilates £96 per term (£8.73 per hour) Thai Chi £80 per term (£4.85 per hour) Yoga £67.50 per term (£6.14 per hour) Fit and 50 £3.20 per session Source: Malden Centre, Kingston http://www.dcleisurecentres.co.uk/Centres/Surrey/The+Malden+Centre/The+Malden+Centre Source: Kingfisher Leisure Centre, Kingston http://www.dcleisurecentres.co.uk/Centres/Surrey/Kingfisher+Leisure+Centre/Kingfisher+Leisure+Centre	36% Drop off is likely to be relatively low immediately after the six weeks, as most of classes were sustained beyond the end of the project. Assume 36% of beneficiaries would stop going to classes or continue to exercising during the first year e.g. loss of interest or willingness/ability to pay for continuing classes etc. Assumption made based on the proportion of beneficiaries aiming to maintain or improve activity levels by continuing to exercise (70%) and/or joining an exercise group (59%)	80% Although alternative exercise classes for over 50s were available locally which some beneficiaries might have used in the absence of the project, none were specifically targeted at those who were overweight. 73% of beneficiaries had a BMI of 25 and 18% of beneficiaries were inactive prior to the project. For some beneficiaries the cost of these classes exceeded what beneficiaries were willing or able to pay, which acts as an initial barrier to participation
				Average cost per hour of weekly classes provided by local healthy lifestyle / weight loss group	£4.80 per hour	Assume that beneficiaries would achieve similar outcomes if they joined a local healthy lifestyle / weight loss group £4.80 average weekly cost of classes Price list for local weight loss classes: £6 weekly classes usually lasting around an hour each week Source: Weight Watchers	50% It is assumed that after the project finishes beneficiaries will no longer be supported to maintain their healthier diets and lifestyles. Consequently drop	80% Although alternative weight loss groups were available locally which some beneficiaries might have used in the absence of the project, none were specifically targeted

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit costs	Source and assumptions	Drop off	Attribution
						http://www.weightwatchers.co.uk/ £4.65 weekly classes (senior citizens' rate) usually lasting around an hour each week Source: Slimming World http://www.slimmingworld.com/ £5.80 weekly classes usually lasting around 1.5 hours each week Source: Rosemary Conley http://www.rosemaryconley.com/	off is likely to be relatively high but approximately half may continue to eat healthier diets and manage their weight. Assumption made based on the proportion of beneficiaries intending to continue to lose weight or maintain a healthy weight through healthy eating (70%) and/or joining a weight loss group (29%)	at over 50s. For some beneficiaries the cost of these classes exceeded what beneficiaries were willing or able to pay, which acts as an initial barrier to participation

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit cost	Source and assumptions	Drop off	Attribution
Operational Champions	Giving something back to the community Improved skills and confidence	Time contributed	**9** 9 out of 10 groups had an operational champion	Value of time based on the current minimum wage	£6 per hour	All groups bar one had operational champions. Source: Project management team. £5.93 current minimum wage for workers aged 21 and over Directgov (2010) National Minimum Wage http://www.direct.gov.uk/en/Employment/Employees/TheNationalMinimumWage/DG_10027201 Operational champions were there at each course session (so 2 hours per week), and probably spent an hour or so extra promoting, setting up, etc Source: Project management team Assume that after the project finishes that time input by operational champions is reduced to 1 hour per week for co-ordinating the exercise classes only	33% Even though drop off is likely to be relatively low immediately after the six weeks, as most of classes were sustained beyond the end of the project, assume approximately a third of the operational champions would discontinue classes during the first year e.g. drop in demand for classes or other opportunities etc	80% It is assumed that in the absence of the project and without the project's support, it would have been difficult to recruit operational champions from this target group
Strategic Champions	Giving something back to the community	Time contributed	**5** 5 out of 10 groups had a strategic champion	Value of time based on the average hourly pay of public service professionals	£17 per hour	Half of the groups had strategic champions. Source: Project management team. Value of time based on the average hourly pay of public service professionals as most strategic champions were local councillors, heads of residents association, or staff of the local PCT £16.89 average gross hourly pay of public service professionals ONS (2010) Annual Survey of Hours and Earnings http://www.statistics.gov.uk/downloads/theme_labour/ashe-2010/2010-occ4.pdf Assume approximately 1 hour of input per week during the project and reduce to 15 minutes after the project	80% It is assumed that after the project finishes that strategic champions would gradually wind-up their involvement in the project as their role was mainly to guide the project during its earlier stages and to build the capacity of the operational champions towards self-management	60% It is assumed that in the absence of the project, it is likely that some of the strategic champions may have found other projects to support instead

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit cost	Source and assumptions	Drop off	Attribution
NHS	Reduced demand on GPs	Number of avoided GP visits per year	**166** Number of beneficiaries	Avoided cost of a GP visit	£28 per GP visit	Studies found that an increase in physical activity is associated with fewer GP visits Hardiker, R. (2009) A synthesis of grey literature around public health interventions and programmes http://www.research.northwest.nhs.uk/storage/library/NHS_Northwest_Grey_Literature_Review_Final_Report2.pdf Older people make an average of seven visits to the GP per year ONS (2009) General Lifestyle Survey http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=5756 Difficult to determine the level of impact but assume a conservative reduction of one less visit to the GP per year based on an average of seven visits to the GP per year £28 per GP visit Curtis, L. (2010) Unit Costs of Health and Social Care 2010, Personal Social Services Research Unit http://www.pssru.ac.uk/pdf/uc/uc2010/uc2010.pdf	36% Based on the estimate proportion of beneficiaries sustaining regular physical activity	75% Difficult to determine the level of attribution, but a conservative estimate would be 75%, as there are some other possible factors which could have an influence on this outcome
	Reduced demand on NHS services for treatment of fall related accidents	Number of falls avoided per year	**50** Assume 33% risk of fall and 55% reduction in fall	Avoided treatment costs of falls per year		Up to one in three (3.4m) over 65s suffer a fall each year…Evidence shows that specific programmes for improving strength and balance can reduce the risk of falls by as much as 55 per cent Age UK (2010)Falls in the over 65s cost NHS £4.6 million a day http://www.ageuk.org.uk/latest-news/archive/cost-of-falls/ A&E attendance and hospital admission rates and unit costs Scuffham, P. et al. (2003) Incidence and costs of unintentional falls in older people in the United Kingdom http://www.ncbi.nlm.nih.gov/pmc/article	36% Based on the estimate proportion of beneficiaries sustaining regular physical activity	75% Difficult to determine the level of attribution, but a conservative estimate would be 75%, as there are some other possible factors which could have an influence on this outcome
		Number of A&E visits avoided	**27** Assume 54% of falls result in A&E	Average cost for ambulance journey, attendance at A&E, GP consultation	£179 + £65 + £18 per A&E attendance			
		Number of hospital admissions avoided	**8** Assume 17% of falls result in hospital	Average cost for fall related injury cases admitted to hospital	£1,897 per hospital admission			

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit cost	Source and assumptions	Drop off	Attribution
			admission			s/PMC1732578/pdf/v057p00740.pdf		
		Number of hospital admissions transferred to long term care avoided	**4** Assume 9% of hospital admissions are transferred to long term care	Average cost for admission to long term care	£9,594 per long term care admission			
	Reduced demand on NHS services for treatment of obesity	Number of coronary heart disease avoided per year	**23** Assume 17% risk of CHD and assume 20% lower risk of coronary heart disease	Avoided treatment costs for coronary heart disease per year Average cost for risk assessment, managing patients with high risk, and annual statin treatment	£24 + £59 + £52 per treatment	Around one in five men and one in seven women die from coronary heart disease NHS (2011) Coronary heart disease http://www.nhs.uk/NHSEngland/NSF/Pages/Coronaryheartdisease.aspx There is a 20% to 35% lower risk of coronary heart disease in at least moderately active people compared with those who are inactive Department of Health et al. (2011) Start Active, Stay active http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_128210.pdf Unit costs of coronary heart disease NHS Scotland (2007) Management of coronary heart disease http://www.sign.ac.uk/pdf/chdaudit.pdf	36% Based on the estimate proportion of beneficiaries sustaining regular physical activity	50% Difficult to determine the level of attribution, but a conservative estimate would be 50%, as there are many other possible factors which could have an influence on this outcome
		Number of type 2 diabetes avoided per year	**6** Assume 5% of older people develop have type 2 diabetes and assume 30% lower risk	Avoided treatment costs for type 2 diabetes per year Average PCT spend per patient on prescriptions (spend on drugs prescribed in primary care for treating diabetes)	£279 per treatment	One in twenty people over the age of 65 in the UK have diabetes Department of Heath (2007)National Service Framework for Diabetes http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4096591 There is a 30% to 40% lower risk of type 2 diabetes in at least moderately active people compared with those who are sedentary Department of Health et al. (2011) Start Active, Stay active	36% Based on the estimate proportion of beneficiaries sustaining regular physical activity	50% Difficult to determine the level of attribution, but a conservative estimate would be 50%, as there are many other possible factors which could have an influence on this outcome

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit cost	Source and assumptions	Drop off	Attribution
						http://www.dh.gov.uk/dr_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_128210.pdf PCT spend per patient on prescriptions varies from £214 to £344 ACCA and the Audit Commission (2011) Costing care pathways: Understanding the cost of the diabetes care pathway http://www.audit-commission.gov.uk/sitecollectiondocuments/downloads/201105costofcarepathways.pdf		

Stakeholder	Outcome	Indicator	Quantity	Proxy	Unit cost	Source and assumptions	Drop off	Attribution
Informal Carers	Reduction in unpaid informal care from relatives, friends, neighbours or others	Time (at average hourly pay of care assistants and home carers)	**15** Assume 9 per cent of people aged 65 and over receive informal care	Value of time based on the average hourly pay of care assistants / home carers	£8.60 per hour	The General Household Survey identifies a total of 9 per cent of adults as providing informal care to people aged 65 and over Pickard, L. (2002) The decline of intensive intergenerational care of older people in Great Britain http://www.statistics.gov.uk/articles/population_trends/intergrational_pt110.pdf £8.63 average gross hourly pay of care assistants and home carers ONS (2010) Annual Survey of Hours and Earnings http://www.statistics.gov.uk/downloads/theme_labour/ashe-2010/2010-occ4.pdf Around 2 hours home care a week would be the optimal for all user groups Pickard, L. (2004) The effectiveness and cost effectiveness of support and services to informal carers of older people http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/LitReview02final.pdf	36% Drop off is likely to be inversely proportional to the number of beneficiaries sustaining regular physical activity	50% Difficult to determine the level of attribution, as but conservative estimate would be 50%, as there are many other possible factors which could have an influence on this outcome