



# **A Report on the 'Health MOT Roadshow' Community Health Check Project**

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## Summary

- The NHS Health Check is a national screening programme targeting cardiovascular disease (CVD), the leading cause of death in the UK
- Effectiveness of the NHS Health Check is still under evaluation and no randomised controlled trial (RCT) has been undertaken to date. Current research results are largely inconclusive.
- Initially low, programme uptake has been increasing in recent years, reaching nationally up to half of the eligible population
- While the research data gives a mixed picture, concerns have been raised about differential uptake among different demographic groups, including those living in more deprived areas. Area deprivation is known to correlate with higher CVD risk.
- Public Health England, among other bodies, have called for further research into the impact and coverage of NHS Health Checks
- The 'Health MOT Roadshow' is a community-based health check programme consisting of outreach, referrals, and on-site Health MOTs as well as NHS Health Check. It is delivered by Wellbeing People, a Kent-based private sector company, in co-operation with statutory and third sector services.
- Initial results from the project show promise in view of engaging hard-to-reach populations and improving service uptake at a competitive cost

## Background

The following overview is based on a literature review conducted in Google Scholar in December 2015 and updated in January 2016. Search terms included: NHS health checks, impact and uptake. The website of Public Health England (PHE) was also searched. Most recent (2014 onwards) and/ or relevant publications available were prioritised. A list of relevant studies compiled by PHE (PHE, 2014) was also reviewed.

## Introduction

The NHS Health Check was introduced in 1999 as a pioneering, population-wide cardiovascular disease prevention programme for all adults aged between 40 and 74 irrespective of health status. It is a screening and intervention programme aiming to prevent, identify and treat cardiovascular disease (CVD), which is the leading cause of death in the UK (Forster et al., 2015) and moreover reported to account for a third of the difference in life expectancy between spearhead areas and the rest of England (Graley et al., 2011). Currently, NHS Health Checks also target stroke, diabetes and kidney disease, as well as raising awareness of dementia (PHE, 2015).

Primary Care Trusts and GP surgeries have considerable freedom in how to organise Health Checks, including budgeting and measurement tools used. Consequently, differences have been found in the delivery and reach of Health Checks depending on area (Graley et al., 2011, Nicholas et al., 2013, Artac et al., 2013a, Chang et al., 2015). Demographic factors, alongside recruitment strategies, additionally influence the uptake of NHS Health Checks (Attwood et al., 2015, Burgess et al., 2014, Cooper and Dugdill, 2014, Gidlow et al., 2015, Dalton et al., 2011). There have been widespread concerns regarding the low uptake of Health Checks in some UK regions (Chang et al., 2015, Visram et al., 2015) and the impact of this on existing health inequalities. Targeted community-based recruitment has been suggested as one way to address the issue, but robust evaluation of such approaches is currently lacking (Visram et al., 2015).

Since its launch, the NHS Health Check programme has attracted various criticisms within the public health and clinical community (Luteijn & Wald, 2016, McCartney, 2013, McCartney, 2014). Nevertheless, government support for the programme in the UK remains strong and public investment in the programme has continued (Krogsbøll et al., 2012, O'Dowd, 2015). At the beginning of 2015, Public Health England published a response to a consultation around research priorities regarding the programme (PHE, 2015). Priority areas were the impact of the programme on morbidity, mortality and cost-effectiveness. Other relevant areas for examination that were identified relate to uptake and various factors affecting programme uptake and effectiveness. Robust national research on the impact of the NHS Health Checks is reported to be underway (O'Dowd, 2015). Large-scale retrospective studies evaluating intervention coverage and impact include recently published studies by Imperial College (Chang et al., 2015) and Queen Mary University (Robson et al., 2016).

Being the first screening and intervention programme of its kind in the world (Robson et al., 2016), outcomes of the NHS Health Check intervention are of great interest to the global public health community. However, the impact of complex public health programmes that consist of more than one type of intervention is generally difficult to prove. For example, findings from a wide-ranging and longstanding coronary heart disease prevention programme, the well-published North Karelia project in Finland – originally part of the Comprehensive Cardiovascular Community Control

Programme (CCCP) launched by the WHO in 1974 – continued to be debated in academia nearly thirty years after its launch (e.g. Ebrahim and Smith, 2001, White, 2001). In the absence of randomised controlled trials or other appropriately matched evaluations, the effectiveness of the NHS Health Check -programme remains a subject of further investigation, and further research to inform potential improvements to programme implementation is awaited.

### Summary of prevalence and impact studies

A recent study found that the NHS Health Check programme is identifying CVD risk factors in a large proportion of a previously presumed healthy and untreated population of relevant age (Forster et al., 2015). At 15 months' follow-up, there was only a small reduction in CVD risk factors. This contrasts with the more significant changes reported in an earlier study with a 12-month follow-up (Artac et al., 2013c), where evidence on possible impact on smoking cessation was stronger. Due to the absence of a control group not receiving the intervention and other methodological limitations, no direct conclusions can be drawn from these two studies regarding the impact of the NHS Health Check.

A controlled study (Caley et al., 2014) drawing on 38 GP practices found that a considerable previously undiagnosed case of disease was found in approximately 7% of Health Checks. However, over a three-year follow-up, no statistically significant differences were found between the intervention and control groups for prevalence in any of the five major disease conditions studied. A recent quasi-experimental study found a modest beneficial impact on global CVD risk, especially amongst patients at high CVD risk, but not on other outcomes (Chang et al. 2015).

Conclusions drawn from meta-analyses of general health checks (not limited to NHS checks) are similarly mixed, with more evidence supporting the finding of no or limited impact. For example, a Cochrane systematic review found no evidence to support general health checks (Krogsbøll et al., 2012), whereas another recent systematic review which included fewer historical interventions did find support for significant reductions in morbidity, but not mortality (Si et al., 2014). Due to the scarce evidence-base, there are few studies comparing GP-based health checks with community-based checks. Si et al. (2014) hypothesised that GP-based checks would be more effective than those based in the community, but the limited data available did not favour either type of intervention over the other.

The two most recent and comprehensive retrospective studies evaluating NHS health checks (Chang et al., 2015; Robson et al., 2016) make only modest claims concerning intervention impact, owing largely to different risk profiles among attenders and non-attenders, missing data, absence of robust longitudinal data for outcomes and generally low coverage of the programme among all eligible populations. Prescription of statins among those identified as high-risk also appears relatively low at present. Nevertheless, both studies consider the programme to have potential benefits with improved coverage and implementation.

### Summary of uptake studies

Younger age, male gender and living in an area of greater deprivation, among other factors, have been found in a number of studies to be associated with lower uptake of NHS Health Checks across England (Cook et al., 2016, Gidlow et al., 2015, Attwood et al., 2015, Dalton et al., 2011), raising concerns over the reach and benefit of the programme. However, other studies in urban localities have produced contrasting results, for instance area deprivation was found to predict higher uptake/coverage of NHS Health Checks in some London boroughs (Artac et al., 2013b, Artac et al., 2013c). Similarly, coverage in a deprived London community reached over 70% – well above the national

average – and was similar across all deprivation groups following an early implementation strategy underpinned by education, IT support and financial incentives for the primary care trusts (Robson et al., 2015).

A recent rapid review (Cooper and Dugdill, 2014) concluded that evidence in this area is limited. Recommendations from this review include auditing local NHS health check uptake data and conducting qualitative research both on attenders and non-attenders. A common concern is that irrespective of demographic profile, NHS health checks only identify a small proportion of patients at high CVD risk (e.g. Robson et al., 2015).

In recent national evaluations using large samples, one study reported no significant differences in NHS health check uptake by deprivation or gender (Chang et al., 2015), while another found somewhat higher uptake in participants in the most deprived quintile (Robson, et al., 2016), contrary to previous research. Higher age was associated with higher attendance according to both studies, while findings regarding levels of CVD risk scores vary between the two studies.

Using different methods to capture attendance, the two studies estimated overall NHS health check coverage to have been 12.8% (Robson, et al., 2016) and 21.4% (Chang et al., 2015) of the eligible population averaged over the first four years of the programme, with coverage increasing year on year and reaching 30% in 2012 (Robson, et al., 2016). Public Health England's most recent statistics indicate that nationally 45% of the eligible population accepted the invitation for an NHS Health Check in 2015-16 (PHE, 2016), while PHE's aspirational uptake target for 2017/8 is set at 75%.

Qualitative research has suggested that community-based recruitment and screening may be preferred and valued by some participants (Perry et al., 2014), although the longer-term impact of such approaches on participant health has not been studied. Visram et al. (2015) found that a pilot community-based approach, in which a 'mini health MOT' was offered in community settings such as workplaces and children's centres, was particularly successful among men and younger age groups. Participants from the most deprived areas appeared more likely to take up the mini MOT, but less likely to return for a full health check compared to relatively more affluent participants.

A qualitative study by Perry et al. (2014) suggested that participants valued the convenience, unhurriedness and informal personal communication offered by community-based health checks, echoing findings from another study employing community-based outreach in a deprived urban area (Gidlow and Ellis, 2014). A further small-scale study recorded similar positive experiences, but also some concerns among a small number of participants regarding the absence of privacy around health checks conducted in a pharmacy setting (Burgess et al., 2014).

## Local context

According to a recent report by Kent Public Health Observatory (KPHO), the prevalence of coronary heart disease (CHD) in Kent appears to be increasing in line with national trends (KPHO, 2015b). These increases are partly attributable to higher reporting and case finding rates. Cancer, coronary heart disease and stroke were the three leading causes of death responsible for over half of all deaths in those under 75 in Kent, despite concurrent decreases in mortality (KPHO 2015a, KPHO, 2015b). National mortality data for 2014 show significant differences according to gender, with considerably more men dying from ischaemic heart disease – the leading cause of death among men – while death from cerebrovascular disease is more common among women (ONS, 2015).

The annual target for NHS Health Checks in Kent is approximately 91,500 people (KPHO, 2015c). Since April 2013, Kent County Council has commissioned Kent Community Health NHS Foundation

Trust (KCHFT) to deliver the NHS Health Check programme across Kent through sub-contracting GP practices and pharmacies. Most recent available statistics collected by PHE indicate the cumulative (2013-15) uptake rate for Kent stands at approx. 37% which is below the national uptake figure of 48%.

Data for 2014 published by KPHO (2015c) show no clear pattern of correlation between local deprivation scores and NHS Health Check completion by GP practice. However, a significant proportion of GP practices with low completion rates were in areas of greater deprivation, including Thanet and Maidstone. Area deprivation is known to correlate with higher rates of cardiovascular disease (CVD) risk in the population, owing largely to unequal distribution of risk factors (Bajekal, 2012) but potentially also to differences in treatment uptake. Within Kent, Thanet was recorded to have the highest CHD mortality rates compared to the rest of Kent in 2010-12 (twice the rate of Sevenoaks which had the lowest CHD mortality rate in Kent), followed by Gravesham and Dartford (KPHO, 2015a).

The Kent Community Health NHS Foundation Trust is committed to addressing known health inequalities by targeting hard-to reach groups, including:

- areas of deprivation
- travellers (including those who prefer to be known as Gypsies)
- migrant workers
- individuals within the criminal justice system
- asylum seekers and refugees
- black and minority ethnic (BME) groups
- homeless and insecurely housed people
- people not registered with a GP practice.

(KPHO, 2015c)

KCC contracted Wellbeing People in 2014 to increase uptake of NHS Health Checks among hard-to-reach populations, particularly social housing tenants through their partnership with Golding Homes and focusing on the district of Maidstone.

Health inequalities are also reproduced within Kent districts. Latest (2012-14) mortality figures for Maidstone indicate that while the overall rate of circulatory disease mortality was lower compared to national and regional rates, the rate among the most deprived quintile remained over twice the equivalent rate amongst the least deprived quintile (KPHO, 2015c).



## Overview of the 'Health MOT Roadshow' project data

Wellbeing People engage businesses and organisations in health and wellbeing. An innovative private company, they provide a wide range of health and wellbeing services through both the public and private sector. To date, Wellbeing People has conducted over 150,000 health assessments in both public spaces and workplaces across the UK using their Interactive Health Kiosk.

Wellbeing People first piloted a health outreach service, the health MOT, in Gravesend, with good results. The approach was further implemented in a shopping mall in Maidstone in 2013. The Mall Health Event took place over one month and was developed and carried out by Wellbeing People in partnership with Golding Vision, a community development branch of the regional housing association Golding Homes, The Mall, Maidstone Borough Council, British Heart Foundation and Maidstone United Football Club. The objective was to reach out to the general public, particularly Golding Homes tenants, and to offer a range of health advisory and referral options including the NHS Health Check.

Building on positive experiences of engagement and user feedback from this programme, a six-month pilot programme was devised and delivered largely within Maidstone. A partnership between Kent County Council, Wellbeing People, Golding Homes, Mitie and Kent Community Health NHS Foundation Trust (KCHFT) developed the outreach programme, termed 'Health MOT Roadshow'. This consisted of a branded mobile health check unit, 2 members of Wellbeing People staff, a Health Check Assistant provided by KCHFT and an Interactive Health Kiosk to provide a means of referring to the NHS Health Check programme and KCHFT lifestyle support services.

The 'Health MOT Roadshow' operated within Kent, primarily within the Maidstone borough, travelling to a variety of locations with a particular focus on areas of deprivation. Members of the public were engaged, screened for NHS Health Check eligibility and offered a NHS Health Check 'there and then', carried out by a KCHFT Health Check Advisor or trained Wellbeing People member of staff. Those ineligible or unable to participate 'there and then' were offered a Health MOT via the Interactive Health Kiosk and the opportunity to be referred to the NHS Health Check programme at a local GP practice. Signposting and referrals to locally commissioned public health services, such as weight management schemes, smoking cessation classes or exercise schemes, were provided to those requiring further support (see Table 1 for detailed figures). Feedback from users of the service and key performance indicators (KPIs) were also recorded.

### Engagement

Over 206 operational days in total, the 'Health MOT Roadshow' delivered 1460 NHS Health Checks, 4617 Health MOTs, 104 referrals to the NHS Health Check programme and 443 referrals to locally commissioned services from the Health MOT (See Table 2 below). Feedback from those surveyed found that 80% engaged with the project having 'just come across it' and 98% considered the staff to be friendly and helpful.

During the operational period of the project, the number of NHS Health Checks delivered in Maidstone and West Kent increased in comparison to previous years suggesting that the 'Health MOT Roadshow' has helped to contribute to the increase in NHS Health Check uptake. Performance of the NHS Health Check programme in Kent improved significantly in 2014-15 with a rise in uptake of the eligible population from 32,924 checks being completed in 2013-14 (34.7% uptake) to 45,623 checks in 2014-15 (50.6% uptake) according to local data (KPHO, 2015c). Figures for West Kent show

that uptake for 2014-5 was 46.9% of an annual eligible population of 27,987. This would mean 13,126 health checks were carried out during the year 2014- 15 in West Kent. The ‘Health MOT Roadshow’ therefore can be estimated to having contributed ca. 10.5% of all health checks delivered during this period.

24.5% of NHS Health Checks and 30.5% of Health MOTs were carried out for individuals from deprived areas (defined as Quintiles 1 and 2 from IOMD data). A further breakdown of the demographic profile of participants, in comparison with data from other community-based and national surveys is provided in Table 3 below. However, since areas have different levels of deprivation it is difficult to draw comparisons between studies, so the best determinant is how each intervention does against the local levels of deprivation. In an extension of the ‘Health MOT Roadshow’ across Kent during the first Quarter of 2016, focussing on areas of the county with higher levels of deprivation, 48.5 % of participants came from Quintiles 1 and 2.

Involvement and funding from Golding Homes encouraged the project to visit areas populated by Golding Homes tenants. In so doing the reach into areas of health inequality increased – for the 16 Golding Homes located events attended by the ‘Health MOT Roadshow’, NHS Health Check uptake from Quintiles 1 and 2 was higher at 38% (vs.19.1% of postcodes in lowest two deprivation quintiles in Maidstone).

## Health data

Looking at the referral data from the health checks undertaken because of the programme, 6.3% of those tested were referred to their GP’s as being of high CVD risk according to QRisk 2. This was higher than national data cited in Chang et al. 2015 (4.6% using QRISK2) but lower than quoted by Robson et al. 2016 (14.5% using QRisk2) (see Table 3). In addition to referrals on the basis of the predicted CVD risk however, analysis of the results from a random selection of the NHS Health Checks undertaken (828 out of 1384 health checks, 60%) was carried out. This showed that 42% of the people who had NHS Health Checks were referred further, with a breakdown of the reasons for referral being outlined in the table below.

**Table 1: Reasons for referral**

<b>Reason for referral</b>	
Overweight	21%
High blood pressure	18%
High cholesterol	10%
Categorised as high CVD risk by Q Risk 2	6%
Health Trainers	3%
Referral to smoking cessation	2%
Referral for alcohol intervention programmes	0.4%

The ‘Health MOT Roadshow’ shows similar levels of referral for CVD risk to national levels (see Table 3), with higher levels of engagement among higher deprivation quintiles than that the numbers that exist within the targeted population in Maidstone. Additionally, since anyone ineligible for an NHS Health check could still receive a ‘Health MOT’ the total number of referrals for lifestyle interventions was considerably larger than would have been the case on the basis of an NHS Health Check alone. These additional referrals can prove important in defining the overall effectiveness of a broader community-based health check programme.

**Table 2: Numbers of referrals to behavioural intervention services**

Referral	Overweight services (healthy eating/ exercise)	Smoking cessation	Alcohol services	GP referral†	Total referrals
Health Check (n=1460)	170	15	3	307	495
Health MOT (n=4617)	373	63	7	n/a	443
Total	543	78	10	307	<b>938</b>

†Participants were referred to their GP's on the basis of a range of criteria including high CVD risk as well as overweight and high blood cholesterol or increased risk of developing Type 2 diabetes for further testing.

The additional benefit of the Interactive Health Kiosk ('Health MOT') in terms of service uptake shows an additional number of referrals into health improvement services, with NHS Health Checking alone producing 495 referrals whereas the presence of the Health Kiosk almost doubles that figure to 938 people in total referred to health improvements services.

Table 3: Summary of demographic and outcome data: key community-based and national studies compared with data from the 'Health MOT Roadshow'

<i>Study ID</i>	<i>Setting</i>	<i>Sample size</i>	<i>Health check recruitment method</i>	<i>Intervention</i>	<i>Gender</i>	<i>Target population</i>	<i>Age</i>	<i>Ethnicity</i>
<b>COMMUNITY-BASED STUDIES</b>								
<b><i>Gidlow, 2014</i></b>	Unnamed UK city, deprived areas	512	Public outreach; various community settings	Health assessments by programme workers	69% women, 31% men	Aged 45-65	Mean age 54.2 ± 5.7 years	94% White British
<b><i>Visram, 2014</i></b>	County Durham	774	Public outreach; various community settings	Health-trainer led community health check/ Mini MOT only	Mini MOT: 62% women, 38% men; Health check: 53% women (33% of eligible women), 47% men (59% of eligible men)	Aged 16+	Mini MOT: 56% 40-49, 44% over 60. Health check: 64% 40-49 (59.6% of eligible people); 24% over 60 (34% of eligible people)	Not reported
<b><i>'Health MOT Roadshow'</i></b>	Maidstone, Kent	6,077	Public outreach; various community settings	Health MOT, Community health check (HC), health trainers	MOT: 52% women, 48% men; HC 63% women, 37% men	Aged 16 +	MOT: 14% 16-24 22% 25-34 16% 35-44 19% 45-54 13% 55-64 17% 65+ HC: 20% 35-44 36% 45-54 26% 55-64 17% 65-74	MOT 80% white British; HC 88 % white British
<b>NATIONAL STUDIES</b>								
<b><i>Chang, 2015</i></b>	National	20,409 health check attendees	Mainly through standard GP-based invitation	NHS health check	55% female (22% of eligible population); 45% male (20% of eligible population)	Aged 40-74	37% 40-49; 34% 50-59; 29% 60-74	71.4% White

<b>Robson, 2016</b>	National	214,295 health check attendees	Mainly through standard GP-based invitation	NHS health check	52% female (13.2% of eligible population), 48% male (12.3% of eligible population)	Aged 40-74	34% 40–49; 32% 50–59; 34% 60–74	86% White
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Study ID	Deprivation measure	Deprivation data	Overall CVD risk measure	CVD risk data	Other health variables reported	Source of data/ data collection period
<b>COMMUNITY-BASED STUDIES</b>						
<b>Gidlow, 2014</b>	'National rankings'	44% in lowest 20% of national rankings	N/A	N/A	BMI, waist circumference, weight category, blood pressure, hypertension, BP medication	Gathered through intervention, 12 months
<b>Visram, 2014</b>	Index of Multiple Deprivation (IMD) 2007 – client postcodes (1 <sup>st</sup> quintile <b>most</b> deprived )	61% from 1 <sup>st</sup> and 2 <sup>nd</sup> quints.; 14% from 3 <sup>rd</sup> quint.; 25% from 4 <sup>th</sup> and 5 <sup>th</sup> quints.	'Calculated using specialized software'	57% low risk; 29% moderate risk; 13% high risk. Gender significant moderator.	BMI, blood pressure, NHS health check eligibility (MOT) + waist circumference, cholesterol level and CVD risk score (full health check), referrals to GP/ lifestyle advice	Gathered through intervention (Jan – June 2012)
<b>'Health MOT Roadshow'</b>	Index of Multiple Deprivation (IMD) 2010 (1 <sup>st</sup> quintile <b>most</b> deprived )	MOT 30.5% Q1-Q2; HC 24.5% Q1-Q2 (In Maidstone, 19.1% in lowest two deprivation quintile postcodes)	QRISK2	75.5% low risk; 18.2% moderate risk; 6.3% high risk	BMI, Blood pressure, body fat content, HC Cholesterol level/CVD risk	Gathered through intervention (19 November 2014 – 30 September 2015 )
<b>NATIONAL STUDIES</b>						
<b>Chang, 2015</b>	IMD 2010 – 1 <sup>st</sup> quintile <b>least</b> deprived	18.4% least deprived quint. (21.8% of eligible population); 19.1% most deprived quint. (24% of eligible population)	Framingham, QRISK2	4.6% high risk Using QRISK2; 14.4% high risk of CVD using NICE Framingham equation	Blood pressure, BMI, Cholesterol levels, Smoking status	Longitudinal dataset from the Clinical Practice Research Datalink (CPRD) database, April 2009 – March 2013
<b>Robson, 2016</b>	Townsend score, 1 <sup>st</sup>	19% most affluent	Framingham,	Of those attendees	Smoking status, alcohol	QResearch database,

quintile <b>least</b> deprived	quintile (12% of eligible population); 23% most deprived quintile (15% of eligible population)	QRISK2 (high risk: 10-year risk of 20% or more)	with QRisk2 scores recorded, 14.5% were at high CVD risk, and 20.7% of those with Framingham scores recorded were at high CVD risk. In total, 12.9% of all attendees were recorded at high CVD risk using either QRisk2 or Framingham.	intake, BMI, blood pressure, cholesterol levels, positive family history	April 2009 – March 2013
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Studies:

CHANG, K. C., SOLJAK, M., LEE, J. T., WORINGER, M., JOHNSTON, D., KHUNTI, K., & ... MILLETT, C. 2015. Coverage of a national cardiovascular risk assessment and management programme (NHS Health Check): Retrospective database study. *Preventive Medicine*, 78, 1-8.

GIDLOW, C. & ELLIS, N. 2014. Opportunistic community-based health checks. *Journal of Public Health*, 128, 582-584.

ROBSON, J., DOSTAL, I., SHEIKH, A., ELDRIDGE, S., MADURASINGHE, V., GRIFFITHS, C., & ... HIPPISEY-COX, J. 2016. The NHS Health Check in England: an evaluation of the first 4 years. *BMJ open*, 6(1), e008840.

VISRAM, S., CARR, S. & GEDDES, L. 2015. Can lay health trainers increase uptake of NHS health checks in hard-to-reach populations? A mixed-method pilot evaluation. *Journal of Public Health*, 37, 226-233.

## Case studies

### Case Study 1

An effective example of working in partnership can be seen from the 'Match fit programme'. Staff from the 'Health MOT Roadshow' carried out recruitment of individuals for a Men's Health programme (called Match fit) which was run in partnership with Maidstone United Football Club, Golding Homes, Wellbeing People and Maidstone Borough Council during attendance at two MUFC home games. It was part of the plans to reach more Golding Homes tenants. The programme involved recruiting men who had a BMI of over 28 and wanted to exercise more who then could self-refer to the programme. It consisted of a 10-week course of one-hour exercise sessions, run at the Gallagher Stadium with an exercise professional and guidance on aspects of mental wellbeing, goal setting, diet and nutrition.

Participants also received free pedometers to monitor their exercise between classes and were signed up to 'Wellbeing Tracker' an online portal that encouraged them to continually monitor their health. It has the capability of individuals setting themselves short-term 'challenges' to help them improve aspects of their health. Thirteen individuals initially signed up for the initial two courses and 11 people completed (average age 54, average BMI 34). Although not designed specifically as a 'weight loss' programme, many participants set themselves weight loss targets and the average weight loss for the group was 2.2 Kg per person.

One participant, Male, aged 32, with a BMI of 30, wanted to exercise more and possibly lose weight in the process. After 10 weeks his fitness levels had improved considerably, he was making more effort to incorporate activity into his life at work, had lost 5.5 Kg (5% of his own body weight), and reduced his BMI by 2 full units. He commented, "I struggled with my weight initially but once I took the online challenges in Wellbeing Tracker, the weight just flew off."

### Case Study 2

The engagement of people in a community setting demonstrated the impact of the 'Health MOT Roadshow' in empowering an individual to make lifestyle changes to improve their health and wellbeing. The Vine Church, Shepway hosted the 'Health MOT Roadshow' in order to extend the reach of the NHS Health Check into an area of health inequality. The engagement of one participant was typical of many that engage with the project.

A male with no prior health concern or intention to undergo a NHS Health Check or 'Health MOT' decided to participate following his curiosity and consequent discussion with the 'Health MOT Roadshow' staff. The outcome of his visit was an appointment with the GP and a resultant diagnosis of Type 2 diabetes. He was prescribed medication and decided to make changes to his diet and enrol into the NHS DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) programme. As a result he lost 13 Kg of weight and reduced his blood sugar to a level that his nurse suggested could almost be considered non-diabetic. He commented "I'm really grateful that I chanced to visit the Roadshow, and that the staff member was so approachable."

The experience of this individual is an example of the impact of convenience and approachability demonstrated by the 'Health MOT Roadshow'.

The 'Health MOT Roadshow' demonstrated the concept of tri-sector integration with regard to developing and operating a public health outreach project. Feedback from users and KPIs suggest that the 'Health MOT Roadshow' is a convenient, approachable and engaging service.

## Cost analysis

The cost-effectiveness of the NHS Health Check programme has been widely debated. Local authorities struggling with reduced budgets may not have been able to implement the programme effectively in the past (Artac et al., 2013a). Partnering with community-focused organisations in the private and third sectors offers a distinct model to distribute costs across sectors. To our knowledge, no similar community outreach programmes have been reported in the research literature.

The introduction of matched funding facilitated by Wellbeing People and with contributions from Golding Homes, Mitie and Wellbeing People, Kent County Council received delivery of a £150,000 (+VAT) project in return for a £50,000 (+VAT) investment. A normal cost per health check *via* conventional GP letter is approximately £27 per health check, while for such an outreach project anything up to twice this figure (£55) has been known (KCC, personal communication). Additionally, the reach of the programme goes well beyond those eligible for NHS Health Checks; significant numbers of referrals via Health MOTs (for those who were ineligible for the full NHS Health Check) increases the scope of the programme. This is particularly true for referral into health improvement programmes as well as engaging with higher numbers of people from more deprived backgrounds. So, for a typical day with approximately 8 NHS health checks and 22 Health MOTs for those ineligible for NHS health checks, this would work out at approximately £23.83 per health interaction. The 'Health MOT Roadshow' with its unique tripartite funding can deliver health checks at considerably reduced cost to the public purse.

The bringing together of the three sectors allowed for an effective targeted strategy to better serve the local community, with a particular focus on the areas of health inequality. The person-centered, community approach instigated by KCC has enhanced the unique approach being delivered by Wellbeing People and the targeted community action from Golding Homes has added considerable social value. Mitie has seen this as an opportunity to enhance the social value of their work (*vide infra*) and to ensure lasting value in their involvement with clients.

## Social value

Housing providers are increasingly expected to use data and evidence to inform all aspects of their decision-making. New regulatory rules require housing providers to demonstrate the value for money of their social, as well as financial returns and provide evidence they are spending money as effectively as possible. The Public Services (Social Value) Act 2012 has placed a requirement on housing providers to consider their social impact when undertaking procurement activities. The Housing Association Charitable Trust's (HACT) have published a Social Value Bank (available from <http://www.hact.org.uk/social-value-publications>) which attempts to quantify the Social Value of a wide range of public interventions.

Using the NHS Health Check Ready Reckoner (available from [http://www.healthcheck.nhs.uk/commissioners\\_and\\_providers/national\\_resources\\_and\\_training\\_development\\_tools1/ready\\_reckoner\\_tools/](http://www.healthcheck.nhs.uk/commissioners_and_providers/national_resources_and_training_development_tools1/ready_reckoner_tools/)) it could be predicted that as a result of the NHS Health



Checks undertaken by the 'Health MOT Roadshow', 98 people will join a weight loss programme, 25 will increase their activity level and two will quit smoking. HACT's Social Value Bank estimates that these outcomes hold a social value of £341,507. There is no actual figure within the HACT Social Value Bank for weight loss, so we have conservatively estimated that at this stage a social value of £2500 could be attributed to the attendance and completion of a weight loss programme.

As a result of the Health MOTs delivered as part of the 'Health MOT Roadshow', an additional 337 people were referred to the KCHFT Health Trainer Service and a further 93 people were referred to Maidstone Borough Council Health Living Programmes. For the purpose of estimating social value outcomes, making the assumption that the outcomes for every three Health MOTs equate to the outcomes for 1 NHS Health Check, the estimated social value of Health MOTs delivered would be £341,507. This would mean that, based on the social value delivered over the duration of the 'Health MOT Roadshow' project an estimate is that for every £1 invested in the Roadshow, the social value would be between £3 and £5. This shows the value to the partners in the housing sector of participating in such an innovative project.

These numbers can be further refined on the basis of actual, rather than calculated levels of people participating in health improvement programmes once those are known.

## Conclusion

The 'Health MOT Roadshow' resulted in a total of 1460 NHS Health Checks, 4617 Health MOTs (among those ineligible for a NHS Health Check), 104 referrals to the NHS Health Check programme and 443 referrals to locally commissioned services over a six-month period. Referral data combining both types of health check indicate that the leading cause for a referral was overweight (21%), followed by high blood pressure (18%). However, only 6.3% of the population who had an NHS Health Check were recorded as having high CVD risk (> 10% according to QRisk2).

The programme demonstrated the concept of tri-sector integration with regard to developing and operating a public health outreach project. Feedback from users and KPIs suggest that the 'Health MOT Roadshow' is a convenient, approachable and engaging service. 24.5% of those opting for a NHS Health Check were from the two most deprived quintiles. While the health MOT engaged similar proportions of men and women, NHS Health Check uptake was higher among women than men.

Further data, once available, should be looked at among those referred forward alongside any diagnosis or resulting treatment. In addition, actual social value outcomes could be calculated with access to follow-up data. Wellbeing People is committed to transparency and sharing of their data with interested public health bodies. In addition, Wellbeing People is interested in further collaborating with all stakeholders in the project to improve longitudinal collection, monitoring and analysis of relevant data within data governance protocols. Health data collected through the 'Health MOT Roadshow' could be used by local authorities to inform and develop targeted local services and to inform public health programmes, including preventative community-based interventions

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