Economic Assessment of the 'Supporting Health and Promoting Exercise' Programme

SUPPORTING HEALTH AND PROMOTING EXERCISE

Economic Case for SHAPE

Supporting Health and Promoting Exercise
in young people diagnosed with a severe mental illness

Introduction

The purpose of this economic assessment is to set out the costs associated with setting up and delivering a targeted exercise and wellbeing programme for individuals diagnosed with a serious mental illness (SMI). It then outlines a plan for collecting and analysing data to help predict the longer term economic impact of this programme.

Scarbourgh et al. (2011) reports on the prevalence of CVD, Diabetes and obesity in the general population and that the economic burden due to inactivity and lifestyle factors has the highest risk factor on NHS. The NICE clinical guidance (2014) 178 Chapter 7 provided guidance on treatment and management of psychosis and schizophrenia in adults. Ch 7 emphasises the importance of taking preventative measures to prevent CVD risk in those diagnosed with SMI.

Apart from this recent activity and reports from within public health and organisations promoting physical activity for individuals with SMI, such as the Department of Health Start Active Stay Active and the Healthy Active Lives (HeAL) project, that are related to investing in physical health and wellbeing, those diagnosed with an SMI are already at a disadvantage and would expect to have a reduced life expectancy of between 16 – 25 years compared with the general population. This is mainly due to the consequence of cardiovascular disease underpinned by metabolic risk factors such as poor diet and nutrition, smoking, drug and alcohol use as well as reduced activity levels due to poor routine and poorer access to services and side effects of treatment with obesegenic medication used to treat mental health conditions. Such a reduction in life span is unacceptable by any standard as this implies a higher incidence of disease, an increased severity of disease or both. Hence, this is a major social and public health issue that warrants urgent and sustained attention. Increased transparency by health and social services that provide medical treatment is required along with social support to target those at risk and provide interventions to reduce the risk.

The purpose of economic assessment and methodology used

This economic assessment should be treated as a first step in clarifying costs and providing a basis upon which we will be able to model the potential economic benefits of the intervention described (SHAPE) through a cost avoidance approach over the longer term.

We are not able to produce calculations of current decreased spend due to limited data available at this point in the project. We will use comparable measures pre SHAPE and predict costs incurred without intervention using standardised care against those who have received the intervention. We assume that if behaviour change was sustained longer term it will improve outcomes and reduce burden of costs to health service providers.

We will therefore make an argument for the continued delivery of the SHAPE programme following on from the success of the pilot project and identify costs and benefits in relation to reduced risk of prevalence of diabetes through targeting BMI and group intervention compared to 1:1 contact with no targeted intervention for physical health, it will also explore the wider benefits.

Economic assessment of the SHAPE programme will calculate setup and running costs against the potential cost savings that may be made from reduced primary and secondary health care costs comparing our 12 month BMI change data for cohort 1 participants against reported BMI changes in the Bondi EIP standard care group. This calculation will be done using formulae derived from BMI values in the 'Lighter Life' Clinical Obesity (2014) cost evaluation paper which are linked to likely diabetes and CVD prevalence. They also use a 'Quality of life' index which will allow us to look at our BMI changes in relation to their potential impact on Quality of Life. We will also be able to evaluate the likely prevalence and associated health care costs of type 2 diabetes and CVD risk using a similar comparison between our SHAPE cohort 1 data and Bondi standard EI care data where a 10% weight loss for individuals has been shown to reduce risk for type 2 diabetes by 30% and CVD risk by 10%, and where a 10% weight gain increase has been shown to increase type 2 diabetes risk by more than 35% and CVD risk by 20% (McQuigg et al. 2008).

Pre SHAPE: what the service looked like

Prior to the SHAPE programme, there was inconsistency in the regional monitoring and measuring of the physical health of patients, including gaps in blood monitoring and no sustained intervention offered to motivate or sustain physical activity and well-being to make an impact on future health risks of CVD and diabetes.

Introduction of the programme

In response to this pressing issue, the NHS Worcestershire Early Intervention Service decided to improve the physical health pathway of its patients. In April 2014, our project team secured funding from The Health Foundation SHINE funding scheme (£74,000) to deliver a 12 month pilot project aimed at targeting the physical health and well-being of its patients. The remit of the Early Intervention Service is to work with young people between the ages of 14-35 years presenting with first episode psychosis and bipolar disorder. Therefore, we aim to provide both mental and physical health support to individuals at this early stage to ensure the best possible outcome and management of their condition. We are therefore best placed to undertake preventative measures to those with an early diagnosis and journey of illness.

SHAPE is a ‘real-life’ evaluation model designed and delivered in collaboration between local health services and education providers based at the McClelland Health and Well-being Centre situated on the University of Worcester city campus which is easily accessible by public transport (main rail and bus stations are located within 5-10 min walk away). We purposely decided on this socially inclusive setting to increase

participant engagement as it normalises the intervention within a non-medical setting encouraging peer support. In addition to the 12 week intensive health and physical exercise programme, SHAPE offers an additional year's free gym membership to encourage continued programme adherence. Our programme was based on a similar project delivered in Bondi, Sydney called Keeping the Body In Mind (KBIM) (Curtis et al. 2013) which has shown a positive impact on key metabolic risk markers (weight, BMI and waist circumference) following completion of 12 week lifestyle intervention programme.

Benefits of the SHAPE programme

The potential causes of death and illness which contribute to this reduction in life expectancy may be treated, prevented, or attenuated through timely access to targeted health promotion efforts, and physical health monitoring and preventative interventions.

The aim of the SHAPE programme is to reduce the risk of co-morbidity by preventing weight gain and adverse lipid changes that occur in early treatment with second-generation antipsychotic medication which has been shown to increase the lifetime risk of CVD and metabolic disorders (e.g. Type 2 diabetes).

Although still early on in the project we are able to collect limited quantitative and qualitative data pre and post completion of the 12 week programme and current 12 month data of those partaking in the first cohort shows that we are on track to avoid weight gain that is predicted.

Baseline data

Mean baseline data suggests this population group are at an increased physical health risk due to elevated values in resting heart rate, triglycerides (blood lipids), body mass index (BMI) and waist circumference (see Table 1).

Table 1. Baseline characteristics of SHAPE participants.

Variable	N	Mean (SD)	Normal range	Reference
Age (years)	66	25.8 (4.9)		
Males (%)	45	68%		
Cardiometabolic Health Measures				
Body mass index (kg/m^2)	63	29.1 (6.3)	< 25	*Lester UK Adaptation (2014 update)*

Waist circumference (cm)	♂ 41 ♀ 18	♂ 93.8 (21.4) ♀ 99.2 (12.5)	♂ <94 ♀ <80	*International Diabetes Federation (Albierti et al., 2006)*
Systolic blood pressure (mm Hg)	52	121.2 (16.9)	< 140	*Lester UK Adaptation (2014 update)*
Diastolic blood pressure (mm Hg)	52	79.3 (13.9)	< 90	*Lester UK Adaptation (2014 update)*
Resting heart rate (beats/min)	46	88.2 (18.8)	< 80	*NICE guidelines*
Total cholesterol (mmol/L)	49	4.8 (0.9)	≤ 5	*Lester UK Adaptation (2014 update)*
Triglycerides (mmol/L)	21	2.02 (1.34)	< 1.7	*NICE guidelines*
$HbA1_C$ (mmol/mol)	31	37.4 (8.9)	< 42	*Lester UK Adaptation (2014 update)*
Prolactin (mIU/L)	38	458.1 (378.4)	< 400	*NICE guidelines*

Note: the red text denotes those values above the recommended thresholds.

At the initial health screening (n=**63**), 71% (n=***45***) were classified as overweight (BMI > 25.0 kg/m^2) or obese (BMI > 30.0 kg/m^2); five of whom were classified as morbidly obese (> 40.0 kg/m^2). As shown in Table 2, over 50% were smoking daily and ate less than 5 portions of fruit and vegetable a day and 52% were taking the most obesogenic drugs (Clozapine and Olanzapine).

Table 2. Lifestyle behaviours and antipsychotic medications of SHAPE participants at baseline.

Variable	N	% of SHAPE Participants
Currently smoking	62	50% (n=31)
Alcohol use (> 1 unit)	60	38% (n=23)
Drug use	59	20% (n=12)
Sedentary lifestyle (< 90 min/wk)	62	40% (n=25)

Unhealthy eating* (< 5 fruit+veg/day)	59	64% (n =38)
Medications		
Aripiprazole	54	17%
Clozapine	54	24%
Olanzapine	54	28%
Paliperidone	54	2%
Quetiapine	54	22%
Risperidone	54	7%

Note: the red text denotes those categories with high incidence.

12 month Post-intervention Data

Thus far, 8 participants from Cohort 1 have completed the 12 month follow up. As seen in Table 3, there was a 5.9 cm mean reduction in waist circumference (p=0.04); no change was observed in mean BMI, body mass or any other physiological variable. Almost all patients maintained or decreased body mass, one patient increased weight by 20 kg due to severe illness. Positive impacts on lifestyle behaviours' included 4 patients reported eating healthier (p=0.05), 2 ceased substance use, 1 ceased alcohol use and 3 were less sedentary.

Table 3 Comparison of anthropometric and physiological variables from pre- to 12 months post-intervention (Cohort 1: attended > 3 weeks of the intervention).

	N	Pre-intervention	12 months Post-intervention	95% CI	*t*	*P*
Anthropometric Measurements						
BMI (kg/m^2)	8	34.8 (9.7)	35.6 (10.9)	0.7 (-2.6, 4.1)	0.526	0.62
Body Mass (kg)	8	105.3 (32.3)	107.2 (34.0)	1.9 (-8.1, 11.8)	0.443	0.67
Waist Circumference (cm)	7	110.3 (29.6)	104.4 (28.8)	-5.9 (-11.3, -0.4)	0.971	0.04*
Physiological Factors						
Resting Heart Rate (beats/min)	7	83.0 (18.2)	78.0 (15.7)	-5.0 (-10.2, 0.2)	-2.363	0.06

Systolic Blood Pressure (mm Hg)	8	121.8 (22.3)	131.8 (20.5)	10.0 (-2.9, 22.9)	1.836	0.11
Diastolic Blood Pressure (mm Hg)	8	79.8 (11.1)	77.0 (11.0)	-2.8 (-6.5, 1.0)	-1.718	0.13
Total Cholesterol (mmol/L)	6	4.1 (1.0)	3.7 (0.7)	-0.4 (-1.1, 0.3)	-1.505	0.2
Triglycerides (mmol/L)	3	1.8 (1.9)	2.1 (2.4)	0.3 (-1.1, 1.7)	1.000	0.42
HbA1c (mmol/mol)	6	35.7 (5.5)	37.7 (10.6)	2.0 (-3.7, 7.7)	0.907	0.41
Prolactin (mIU/L)	4	765.5 (803.2)	369.3 (299.4)	-396.2 (-1472.4, 679.9)	-1.172	0.33

Although it is still too early to make any conclusive statements, the emerging data suggests that we are likely to be on track with preventing weight gain. These results compare favourably to a similar intervention programme entitled 'Keeping the Body in Mind' delivered in Bondi, Australia (Curtis et al. 2013). Of the 27 patients that completed the programme, 13 patients maintained (± 2 kg), 6 decreased (2-7 kg) and 7 increased (2-9.6 kg) body mass; only 1 patient exceeded the recommended weight gain (+ 7 kg).

If early results for SHAPE are manifested more strongly over time as we collect more 12-month follow up data, we may be able to make a number of assumptions around the implications of this based on the outcomes of KBIM and the attribution of these outcomes to the KBIM intervention. For example:

- A more streamlined approach to screening following the LESTER tool which provides a clear pathway to ensure this is embedded within the care planning process following screening of metabolic health needs and improving in levels of activity
- Reduced numbers in smoking and alcohol/ drug use
- Improved nutrition and levels of activity.
- Positive impact on health, mental and social well-being
- Improvement in Physiological changes in relation to BMI, weight and waist circumference and lipids.

If these assumptions are valid and the programme is successful, it should result in cost savings over the longer term for SHAPE participants in terms of reductions in diabetes and CVD risk and for the broader health economy, through reduced future use of health services through encouraging regular exercise and reducing key risk factors such as tobacco smoking and poor diet.

Cost savings predicted associated with this

We aim to calculate likely savings based on assumptions around changes in BMI and associated reductions in the risk of CHD and diabetes which have an annual cost. If we prove if we have reduced this risk we can work out the values and impact on cost as shown in the Lighter Life weight management programme (Lewis et al. 2014) along the lines of the KBIM study.

The key measures used for evaluation include percentage change in body mass (McQuigg et al. 2008), change in prevalence (based on BMI) of coronary heart disease and Type 2 diabetes (Lewis et al. 2014). Additional potential cost savings can be calculated based on reduction in clinical services required, and changes in lifestyle behaviours including cessation of smoking, substance use and excessive alcohol consumption.. At this stage, we have only been able to estimate potential financial impact based on the change in prevalence in CHD and Type 2 diabetes (see Table 6). At this stage, we are limited in our ability to provide an accurate cost-reduction based on the 12 month evaluation as most of the impact of the programme aims to prevent future risk and use of acute and specialist diabetes and CHD services over decades which cost data is not available in mental health populations.

Table 4 shows the cost of QALY (Quality of life years) can be reduced if patients can avoid the 7% weight gain and stop smoking as recommended in NICE CG178. This shows the impact of SHAPE of reduced weight gain on BMI and therefore predicting a reduction in the prevalence of diabetes that will impact future cost in QALY.

Table 4. Change in body mass index by BMI classification.

BMI group (kg/m^2)	N	Pre-SHAPE	12 months Post-SHAPE	12-month change in BMI	% change in body mass‡	Subsequent yearly BMI change
SHAPE						
Cohort	8	34.8 (9.7)	35.6 (10.9)	-0.75	+1.8%	0.160
25 +	2	27.2 (2.8)	24.9 (0.8)	-2.29	-9.3%	0.160*
30 +	2	34.1 (0.2)	38.4 (7.3)	+4.28	+11.7%¥	0.160*
40 +	3	45.2 (2.6)	45.7 (1.6)	+0.55	+1.0%	0.160*
New South Wales Standard Care	12	24.8 (3.3)	27.4 (3.1)	+2.6	10.2%	0.160

*Assumed equal to the natural BMI change used in ‘no treatment’ group (Lewis et al., 2014; Ara et al., 2012) due to lack of control group data. This change would be for non-psychosis peers.

One individual gained 20 kg due to severe illness.

Key Cost Measures and Financial Impact

Currently, we are limited in our ability to provide an accurate financial impact assessment based on the 12 month evaluation data for two reasons: 1) the programme aims to prevent future risk and use of acute and specialist diabetes and CHD services over decades where care costs data is not available yet for mental health populations: and 2) we do not have data from a matched FEP control group for immediate data comparison with SHAPE outcomes.

However, key cost measures that can be used in a future SHAPE programme cost evaluation include:

1. percentage change in body mass (McQuigg et al., 2008 and subsequent improvement in quality of life years (QALY), where the cost of Quality of Life Years has been shown to reduce if patients can (a) avoid 7% weight gain and (b) stop smoking (NICE CG178). A sample data comparison using data from the KBIM study 'Standard EI Care' control group is presented in Table 5.

2. percent change in prevalence (based on BMI change) of CHD and Type 2 diabetes (Lewis et al., 2014). A sample data comparison using data from the KBIM study 'Standard EI Care' control group is presented in Table 6.

3. cost avoidance based on changes in lifestyle behaviours including cessation of smoking, substance use and excessive alcohol consumption.

Although there are limitations with our comparative care control group sample, using data taken from the 'EI Standard Care' group reported in the Bondi KBIM Programme group study publication (Curtis et al 2015), the data in Table 5 suggests that the SHAPE intervention has diminished the percentage BMI increase (1.8% vs 10.2% BMI rise) which should have a positive impact on QALY costs. Table 6 data shows a lower % change in prevalence for type 2 diabetes and CHD for SHAPE (12 month) data compared with the NSW 'EI Standard Care' group (12 week) data which suggests that the SHAPE intervention may also have reduced the potential for an increased prevalence for type 2 diabetes and CHD and their associated care costs.

Table 5. Change in body mass index.

BMI group (kg/m^2)	N	Pre- SHAPE	12 months Post- SHAPE	12-month change in BMI	% change in body mass‡

SHAPE Cohort 1	8	34.8 (9.7)	35.6 (10.9)	+0.8	+1.8%
NSW EI Standard Care	12	24.8 (3.3)	27.4 (3.1)	+2.6	+10.2%

‡ Cost of quality of life years (QALY) has shown to be reduced if patients can (a) avoid 7% weight gain and (b) stop smoking (NICE CG178).

Table 6. Prevalence of co-morbidities: type 2 diabetes and Coronary Heart Disease (CHD) based on BMI change.

BMI group (kg/m^2)	N	Type 2 diabetes Prevalence		Percent change in prevalence of Type 2 diabetes	CHD Prevalence		Percent change in prevalence of CHD
		Pre	Post		Pre	Post	
SHAPE Cohort 1	8	10.54%	11.2%	+0.7%	6.98%	7.21%	+0.2%
NSW EI Standard Care	12	4.62%	5.72 %	+1.1%	4.10%	4.85%	+0.8%

Note: the SHAPE Cohort 1 data is 12 months post-intervention and the NSW EI Standard Care data is 12 weeks post-intervention. However, without intervention, we would expect the NSW EI Standard Care group to show additional weight gain over 12 months based on the weight gain projections in FEP over time reported by Alvarez-Jimenez et al. (2008).

It is important to recognise there are huge benefits that we will not be attempting to monetise, in relation to qualitative benefits for the patient, learning for staff and organisational benefits in the form of meeting local and national targets and reputational value such as nomination and shortlisting for HSJ award. SHAPE enables care quality standards to be met as set by NICE (standards 6 and 7) that provides recommendations supporting the measurement of improvement in services. These standards state the need to assess physical health (standard 6) and promote healthy eating, smoking cessation and physical activity (standard 7).

National and local CQUINS have been set to ensure services are targeting this disparity between physical and mental health which ensures good practice and increase the awareness of practitioners caring for patients with SMI and set targets to ensure that we are screening for cardiovascular risk factors and it is evident in the care planning process.

Limitations

It is important to recognise that as a new project there may be some limitations as to the overall comparisons as sustainable benefits in relation to cost effectiveness for the economic argument can only be predicted over the longer term.

Risk assessment calculators such as Q risk and JBS3 3 remain prejudiced to those with an SMI therefore we have been unable to accurately predict cost savings through reducing cardiovascular risk. It was initially hoped to predict life years gained through reducing CVD risks as this does not take into account SMI as an independent risk factor.

We are assessing a young population and we do not know that following the intervention that it is likely to be influenced significantly. The difference at a young age is more marked so an individual gets older the calculated risk becomes more accurate. Participants are already at a disadvantage due to higher BMI it is impossible to make huge changes in BMI due to % of those with obese or morbidly obese measures at start of programme (see fig 1) and that 50 % of the participants are on the most obesegenic medication Olanzapine and Clozapine starting off with a higher BMI range pre intervention.

There are clearly difficulties attributing savings directly to complex risk factors such as BP or lipid changes therefore we are restricted to analysing impact on smoking and BMI.

Costs

The following sections state the financial cost of setting up and running the initial pilot programme. It needs to be recognised that the initial set up and running phase was cost intensive and it is predicted that future delivery of the programme will be at a reduced cost.

The initial SHAPE programme has been funded by the Health Foundation through its SHINE programme. We were successful in securing funds of £74000 which enabled us to set up a project group in order to plan, facilitate and evaluate the interventions over a 15 month period from April 2014 – September 2015.

Table 6. Financial costs for the research, design and development of the SHAPE programme.

Dates	Direct costs	Staffing	Hours/ time spent WTE costs	Activity
June 2014 – Set 2014	**Set up costs**	Psychology professor	£1,155 2 hr/ wk	Writing exercise programme , Training staff evaluation
		Exercise Physiologist	£1,444 2 hr/wk	Training EAYL students, data evaluation
		Project lead	£2,662 0.1 FT	Admin planning room booking/ facilitation Project management
		Clinical lead	£2,486 0.1 DT	Recruiting participants, baseline physiological, data collection
September 2014 – September 2015	**Running costs**	Project lead	£10,648 0.1 FT	Managing project team writing reports
		Clinical lead	£9,444 0.1 FT	PHC facilitating programme
		Psychology professor	£5,030 2 hr/wk	Follow up measures Evaluation
		Exercise physiologist	£3,399 2 hr/wk	Data collection and analysing data set
		Administrator	£4,643 0.1 FT	Training EAYL students
		Psychology assistant	£5,269 0.3 FT	Organizing staff and programme Facilitating group, administration
		Nutritionist	£3,399 2 hr/wk	Educational sessions
		EAYL	£14,711	Peer support as required paid per hour up to 4 per session.
		Guest instructors	£350	Sessional instructors Tai Chi Body balance 3 x1 hr per cohort
Travel Conferences		Project lead Uni lead	£5000	Travel to Japan IPHYS conference
Materials		T shirts banners	£2,500	
In Kind		PR/ Marketing Water bottles/ pedometers / tape measures		Commercial Sponsors: Concept advertising Postcode anywhere
Total Award			£74,995	

Total Spend	**SHINE**		**£74,295**	**All costs covered**

This table breaks down how associated funds were distributed across the project, all funds were allocated as identified in table above showing a cost intensive set up phase. To support SHAPE content development, programme design, implementation and initial evaluation of the intervention. This was to use the specific staff skill set in writing and facilitating the programme and clinical and academic expertise. Clinical time was 1 day a week to undertake physical health checks and collect data and facilitate group over the 12 month period.

Estimated Costs of Existing Services

SHAPE project funding has been used for the content development, programme design and implementation and evaluation of the intervention. It has enabled care quality standards to be met as set by NICE (standards 6 and 7) that provides recommendations supporting the measurement of improvement in services. These standards state the need to assess physical health (standard 6) and promote healthy eating, smoking cessation and physical activity (standard 7).

National and local CQUINS are set to ensure services are targeting this disparity between physical and mental health which ensures good practice and increase the awareness of practitioners caring for patients with SMI and set targets to ensure that we are screening for cardiovascular risk factors and it is evident in the care planning process. There is an expectation to achieve this as part of business as usual.

Financial Costs of SHAPE

Future NHS delivery of the SHAPE intervention has been projected based on a 'streamlined' program delivery and implementation to 4 centre locations within a county/region. It is expected that the programme will be offered to a wider range of patient population within the mental health services which will reduce overall cost per person thus increasing the likelihood of offering the model to a wider population within mental health services.

Implementations costs of Intervention

SHAPE project funding has been used for the content development, programme design, implementation and evaluation of the. We predict that the total set up cost and annual delivery of the programme to a specified region would be ~ £64,654 a cost of £53, 88 per contact. This is calculated based on a total reach of approx 20 patients per group over a total of 60 sessions over a 12 month period. This model would allow for sustainable delivery as an integrated programme within the NHS mental and physical health care package and has potential to include primary care patients as well as those within secondary care.

Table A

£	8,217	Peer support 15 hrs
		Support worker (in kind)
£	8,205	1 day band 7 mgt time
£	29,793	Exercise Physiologist (37.5hrs) band 5
£	3,500	Travel
£	360	Guest
£	14,080	Venues
£	500	Materials
£	**64,654**	**Total SHAPE cost over 12 months**

£	53,88	Per patient contact (60)

This shows a group contact with targeted physical intervention over sustained period assuming results of a future cost saving reduction in CHD or diabetes if there would be no identified targeted intervention.

Implementation costs per region would include staff training, recruitment of an appropriately trained staff member to lead the physical activity programme. SHAPE package and materials, venue costs, guest speakers for the educational sessions and staff transport costs and Initial management supervision of a lead clinician to oversee the programme.

Costs accrued 'in kind' would include 1) a clinician positioned within the community mental health team that would engage, refer and complete physical health checks (no additional costs as this would be included in the standard physical health pathway); and 2) peer support workers to support participants during the programme.

Recommendations for the future

It has proved difficult to evidence clear cost savings due to the limited data available for this population group. We can only presume there will be longer term impact in relation to predicted future savings on the NHS and personal reduction and impact of burden on NHS service usage assuming there is a sustained longer term change in individual's health behaviour requiring reduced demand for specialist services.

In respect of business needs and in order to convince commissioner we need to encourage service leads and responsible clinicians to embed this practice to ensure parity between services and quality of intervention that meet current CQUIN and NICE guidelines and quality standards.

We will work alongside public health to identify areas of local need and improve collaboration with other services to share good practice and reduce duplication and what the potential options are in terms of the potential scope, solution, delivery, implementation and funding of the underpinning policies and programmes and ensure portability to outlaying areas.

However there remains a prejudice against those diagnosed with SMI with lack of transparency in relation to treatment and prolonged side effects of treatment and the way they are seen within society. It is hoped that by bridging the gap and providing a preventative approach with prolonged interventions alongside screening we can reduce the risk factors associated with such preventable diseases, and can provide it in a cost effective way to reduce the economic risk and future burden to the NHS.

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*This case study was completed by **Marie Band**, Nurse prescriber/Senior Case Manager, SHAPE Programme Clinical Lead, Worcestershire Health and Care NHS Trust in **December 2015**.*

Marie successfully completed a collaborative learning programme designed to empower nurses to understand, generate and use economic evidence to continuously transform care.

The programme was delivered by the Royal College of Nursing and the Office for Public Management, funded by the Burdett Trust for Nursing and endorsed by the Institute of Leadership and Management.

You can contact Marie by email marieband@nhs.net

Appendix 1 - Wider Benefits

- Reputational value for e.g. mentioned at least twice as an example of good practice in the recent HACW NHS Trust CQC report and Nominated and shortlisted for a HSJ 2015 award.

- It has generated a lot of interest from other services and has a national and international profile

- The SHAPE programme offers benefits to our university project partners by offering real world clinical experience to sports and exercise science and nutritional therapy students.

- Supporting academic research (e.g., conference presentations and journal publications) and increased national profiling

- Led to enquiries about using McClelland for physio appts and other health related projects such as Research Fellowship bid and future larger research grants to continue evaluation

- Helping the Trust stand out as an innovative partner in the tendering bid for Birmingham 0-25 yr. services.

Wider benefits and learning for staff and individuals

Training and opportunities for Earn as you learn university student's provides income and funding for university and opportunities for students to partake in real life evaluation programme and gives opportunity for practice and enhances skills and knowledge and prevents stigma.

Encourages collaborative working within the local community and reduces stigma.

Improves physical health and wellbeing of staff therefore empowering change through evidence based working wider learning and dissemination of our collected outcomes and impact increases awareness for the individual, professionals, peers the community and family to motivate change in behaviour and practice.

Appendix 2 - Innovation Benefits

Shape is a first UK real world evaluation model of practice combining screening and intervention in one place.

Sharing good practice with other services and organisations which in turn increases reputational value for the trust Contribution with collaborative working with local community and university make SHAPE a best practice example at local and national conferences

It provides real clinical experience and opportunity for sports and exercise and nutritional therapy students who offer peer support and 1; 1 appointments targeting individual goals.

It has provided the Opportunity to collate data for evaluation and research grant applications.

There are few similar interventions where we have only identified 4 other similar models but where SHAPE is unique in offering a group based approach offering a bespoke healthy eating and exercise programme geared to this client groups needs vs an individual care plan just using a local public gym.

SHAPE offers a model attracting interest to be rolled out elsewhere and is already begun to be replicated in the North of the county. Starting September 2015

Appendix 3 - Benefits to Productivity

- Use of peer support workers and support workers can be used to facilitate the group thus reducing running costs with group contact and using peer support is evidenced to benefit engagement. Enables Partnership working across health and education contributing to skills. learning and expertise
- Group contact saves 1; 1 ‘one stop shop' holistic approach.
- Avoids costs per patient for individualise contact for smoking cessation and nutrition appointments and health trainers through a sustained group contact and the ability to target several health issues within the programme therefore reducing need for contact with GPs. For e.g. monitoring of B.P and identifying need for beta blockers.
- Use of nutritional advice 1; 1 help with menu planning and identifying intolerances in diet that may impact physical and mental health

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