

# NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

## QUALITY AND OUTCOMES FRAMEWORK (QOF) INDICATOR DEVELOPMENT PROGRAMME

### Briefing paper

**QOF indicator area:** Physical activity and brief interventions for secondary prevention

**Potential output:** Recommendations for indicator development

**Date of Primary Care QOF Indicator Advisory Committee meeting:** 2–3 June 2010

The briefing paper is structured as follows:

1. Outline of the stakeholder topic suggestion
2. Overview of physical activity and the associated morbidity with inactivity, including an epidemiological summary and its current management in primary care
3. Recommendations relevant to primary care
4. Assessment of current practice
5. Initial assessment of feasibility
6. Summary of the key considerations

## **Introduction**

This briefing paper presents an assessment of the suitability of NICE clinical guideline recommendations relevant to primary care and proposed by stakeholders to progress for QOF indicator development.

The QOF indicator area is physical activity (brief interventions) and the recommendations and underlying evidence are taken from the following guidance:

- Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling. NICE public health guidance 2 (2006).

This paper is based on the evidence presented in NICE public health guidance 2 and no update searches have been performed.

## **Stakeholder topic suggestion**

Stakeholder(s) have made topic suggestions for 'the delivery of brief interventions in physical activity for primary and secondary prevention' for QOF indicator development.

NICE has a memorandum of understanding with the UK national screening committee (NSC). Topics that relate to screening are assessed by the NSC for suitability for QOF indicator development. The topic of physical activity for primary prevention was considered to be a screening topic and therefore needed to be assessed by the NSC's own criteria. On that basis the QOF programme has not developed a briefing paper on physical activity in the context of primary prevention. Therefore, this briefing paper focuses on physical activity for secondary prevention in the context managing chronic disease and conditions for existing QOF domains.

Indicators as proposed by stakeholder(s):

- assessment of adult patient physical activity levels using the general practice physical activity questionnaire (GPPAQ)

- patients screened for physical activity who have received a brief intervention in physical activity
- patients screened for physical activity who have received a follow-up physical activity brief intervention.

## **Overview of physical activity**

### ***Epidemiological summary***

#### **Definition**

Physical activity comprises a range of behaviours involving movement, expenditure of calories and raised heart rate. Physical activity can take the form of sport, recreational and occupational activity, active travel (for example, walking and cycling as a means of transport) and heavy domestic activity (for example, gardening and housework). The Chief Medical Officer's (CMO's) report 'At least five a week' provides recommendations for the amount of physical activity required for general health benefits. Specifically, adults should achieve a total of at least 30 minutes a day of at least moderate intensity activity on five or more days of the week (Department of Health 2004).

#### **Incidence, prevalence and evidence of variation by age, sex and ethnicity**

The Health Survey for England 2003 estimates that around six out of ten men and seven out of ten women are not active enough to benefit their health. Physical activity declines significantly with age for men and women.

Physical activity levels vary between different ages, genders, classes and ethnicities. The Health of Minority Ethnic Groups 1999 found that, compared with the general population, South Asian and Chinese men and women were much less likely to participate in physical activities, whether sport and exercise, walking, heavy housework or DIY. Bangladeshi men and women had the lowest level of physical activity: they were almost twice as likely as the general population to be classified as sedentary. The Chief Medical Officer report indicated that surveys including both work-related and leisure time

activities show higher levels of physical activity in the lowest social classes for men, but little class difference among women. However, people in higher socioeconomic groups take part in more leisure time activity than those in lower socioeconomic groups.

### **Morbidity and mortality**

There is a clear link between physical inactivity and ill health. People who are physically active reduce their risk of developing major chronic diseases – such as coronary heart disease, stroke and type 2 diabetes by up to 50%, and the risk of premature death by about 20–30% (Department of Health 2004). A study into the burden of physical activity-related ill health in the UK for just five conditions<sup>1</sup> estimated that the burden of physical activity caused 3.1% of morbidity and mortality in the UK.

### ***Impact on health services***

#### **Primary care**

The NICE costing report for public health guidance 2 estimated that brief interventions could be appropriate in one in nine consultations.

#### **Secondary care**

On average, inactive people spend 38% more days in hospital than an active people.

### ***Current management in primary care***

Primary care has a well established role in managing chronic disease and other conditions related to physical inactivity. GPs and directly employed practice staff have an important role in identifying inactive adults and promoting physical activity. Referral may be made to exercise schemes.

#### **Current practice**

The NICE costing report for public health guidance 2 (NICE 2006) estimated that brief interventions for physical activity were instigated on an opportunistic

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<sup>1</sup> The five conditions included in this study were post-menopausal breast cancer, lower gastrointestinal cancer, cerebrovascular disease, cardiovascular disease and type 2 diabetes.

basis in 25% of the total appropriate instances, i.e. to inactive adults presenting to general practice. No information was identified to assess baseline practice of brief interventions for physical activity in the context of disease management.

In 2009, the Department of Health launched a new physical activity care pathway called 'Let's Get Moving' (LGM) which is based on the principles of the NICE public health guidance 2. Expected commissioning of the pathway is expected to further increase the use of brief interventions for physical activity in primary care and also increase the uptake of the GPPAQ tool which is part of the set of resources for the LGM pathway.

Further information on GPPAQ and its evaluation for use in UK primary care is provided in the appendices of this report.

The QOF at present does not include dedicated physical activity indicators, although the current QOF indicator for primary prevention of cardiovascular disease (PP2) incentivises lifestyle advice on increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet for those newly diagnosed with hypertension.

### ***NHS priorities and timeliness for guidance***

- Department of Health (2004) [Choosing Health: Making healthy choices easier](#)
- Department of Health (Modified April 2010) [Let's Get Moving - introducing a new physical activity care pathway](#)
- Department of Health (March 2010) [Healthy Weight, Healthy Lives: Two Years On](#)
- Department of Health (February 2009) [Be active, be healthy: a plan for getting the nation moving](#)
- The Scottish Government [Healthy Eating, Active Living: An action plan to improve diet, increase physical activity and tackle obesity \(2008-2011\)](#)
- The Scottish Government [Let's Make Scotland More Active: A strategy for physical activity](#)

## **Review of recommendations**

### ***Summary of NICE guideline recommendations***

Two recommendations from NICE public health guidance 2 have been identified as being potentially suitable for QOF indicator development.

#### **Brief interventions in primary care**

Brief interventions in primary care are defined as any intervention involving verbal advice, encouragement, negotiation or discussion with the overall aim of increasing physical activity. The intervention should also be delivered in a primary care setting by a health or exercise professional, with or without written or other support or follow-up. Brief interventions vary from basic advice to increase activity to more extended, individually-focused attempts to identify factors influencing levels of activity, and are delivered by a wide variety of primary care professionals.

The recommendations made in NICE public health guidance 2 take into account the CMO's recommendation that adults should achieve at least 30 minutes moderate activity on five or more days of the week (Department of Health 2004).

#### **NICE recommendation 1**

Primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on 5 days of the week (or more)<sup>2</sup>. They should use their judgement to determine when this would be inappropriate (for example, because of medical conditions or personal circumstances). They should use a validated tool, such as the Department of Health's forthcoming general practitioner physical activity questionnaire (GPPAQ), to identify inactive individuals.

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<sup>2</sup> The practitioner may be a GP or another professional with specific responsibility for providing encouragement or advice. This will depend on local conditions, professional interest and resources. Health trainers are likely to have a role in offering brief advice. 'Inactive' is used as shorthand for those failing to reach the CMO's recommendation. 'Advise' is used as shorthand for 'encourage, advise, discuss, negotiate' – see definition of brief interventions.

## **NICE recommendation 2**

When providing physical activity advice, primary care practitioners should take into account the individual's needs, preferences and circumstances. They should agree goals with them. They should also provide written information about the benefits of activity and the local opportunities to be active. They should follow them up at appropriate intervals over a 3 to 6 month period.

### ***Evidence summary***

This is a summary of the evidence supporting the proposed evidence-based recommendations presented above. This section relates to the evidence summary table in appendix A of this briefing paper and focuses on the evidence for physical activity brief interventions affecting physical activity levels.

### **Clinical effectiveness**

The study population of the included studies was sedentary middle-aged and older men and women. Studies were included if the key element of the intervention was a single initial consultation delivered in a primary care setting. Effectiveness was examined over three timescales:

- the short term (6–12 weeks)
- the longer term (over 12 weeks)
- over a very long timeframe (for example, over 1 year).

There is level 1 evidence from controlled trials (randomised controlled trials [RCTs], cluster RCTs and non-randomised controlled trials) for relevant physical activity outcomes that brief interventions in primary care can be effective in producing moderate increases in physical activity in middle aged and older populations in the short term, in the longer term and in the very long term, as recommended in NICE recommendation 1.

The guideline developers considered that the findings for effectiveness of brief interventions are potentially applicable to the UK and that most interventions could be applied to primary care in the UK, assuming appropriate adaptation.

All studies reviewed involved verbal advice and supporting written material although they varied according to whether the intervention involved follow-up to reinforce advice to increase physical activity. On the basis of the small number of studies reviewed, the guideline developers agreed that a 'written prescription' outlining physical activity goals and/or step testing during the consultation may provide useful adjuncts to verbal advice to increase physical activity, as recommended in NICE recommendation 2.

The guideline developers noted that it is difficult to separate the relative contribution of these elements of the intervention from the impact of follow-up sessions after the initial consultation and studies that did not find significant effects also involved a 'written prescription'. There was insufficient evidence to support any particular way of individualising advice to patients apart from the use of an exercise prescription.

## **Recommendations on physical activity and its relationship to secondary prevention**

### *Selected recommendations from NICE and SIGN guidance*

Selected recommendations identified from NICE and SIGN guidance that support the benefits of physical activity for the management of chronic disease and conditions are presented in appendix B. These recommendations relate to the management and secondary prevention of cardiovascular disease, myocardial infarction, diabetes and mental health conditions.

The selected recommendations are intended to provide additional context to the summary of evidence for effectiveness of physical activity brief interventions for NICE public health guidance 2.

### *Summary of findings from Chief Medical Officer report*

A report from the CMO report 'At least five a week' examined the evidence on the impact of physical activity and its relationship to health. The CMO report provides compelling evidence that physical activity contributes to well-being and good health. There is also evidence that physical activity constitutes an effective therapy for many conditions (secondary prevention) although the

highest levels of evidence and the strongest effects are seen in primary prevention (Department of Health 2004).

A summary of findings made in the CMO report on the benefits of physical activity across relevant conditions and chronic diseases are provided in appendix C.

### **General Practice Physical Activity Questionnaire**

GPPAQ has been evaluated for feasibility in UK primary care in two studies (Department of Health 2006; Bull et al. 2009) and the reports conclude that the GPPAQ is acceptable for use in routine general practice and that patient interest in brief interventions was high. Bull et al. recruited patients 'opportunistically' and via disease registers. Patients reported high interest in receiving the brief intervention. A summary of the GPPAQ tool and report conclusions from the feasibility studies is provided in appendices F and G.

### **Cost effectiveness**

The guideline developers concluded that overall, brief interventions in primary care were found to be cost effective. Cost effectiveness evidence was not presented specifically in the context of secondary prevention.

## **Assessment of recommendations against current practice**

### ***Health inequalities***

There are clear and significant health inequalities in relation to the prevalence of physical inactivity according to income, gender, age, ethnicity and disability. For example, levels of physical activity are higher in men at all ages and then decline significantly with increasing age for both genders; levels are lower for black and minority ethnic groups, with the exception of African-Caribbean and Irish populations; and are lower in low-income household groups than in high-income household groups. The NICE guideline developers highlighted that the potential impact of brief interventions on reducing inequalities is unclear. One study included in the NICE evidence review that had a short-term impact was

set in a socially deprived population in the UK. However, there is no evidence that brief interventions for physical activity in the context of secondary prevention can directly impact on health inequalities. With the exception of African-Caribbean and Irish populations, all other black and minority ethnic groups have lower rates of adherence to the CMO's recommendations on physical activity for adults. Inequalities are greatest for women of South Asian origin. Only 11% of women of Bangladeshi origin and 14% of women of Pakistani origin were reported to have done the recommended amounts of physical activity, compared with 25% in the general population. [Relevance to health inequalities: medium/high]

### ***Will implementation of these recommendations lead to cost-effective improvements in the delivery of primary care?***

The uptake of brief interventions for physical activity for secondary prevention is unclear although in 2006 NICE estimated that brief interventions were made in 25% of appropriate instances within the practice population as a whole (NICE, 2006). Overall, brief interventions in primary care are considered to be cost effective.

### **Initial feasibility assessment**

Expert advice from the NICE External Contractor suggests that QOF indicator development for physical activity brief interventions, as based on NICE recommendation 1, could be feasible if focused on a specific domain such as chronic heart disease (CHD) or diabetes. Read codes for the GPPAQ tool are available. Recommendation 2 is considered less feasible and presents significant definitional issues associated with defining 'individual's needs and preferences'.

### **Key considerations**

The following key considerations summarise the key points made in the briefing paper and should be used by the Committee in their deliberations.

- NICE determined there is sufficient evidence to recommend the use of brief interventions in primary care.
- The QOF at present does not include dedicated physical activity indicators, although the current QOF indicator for primary prevention of cardiovascular disease (PP2) incentivises lifestyle advice on increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet for those newly diagnosed with hypertension.
- QOF indicator development for physical activity brief interventions which is supported by level 1 evidence could be feasible if focused on a specific domain such as CHD or diabetes.
- GPPAQ has been evaluated for use in UK primary care and has been reported to have good face validity and acceptability for use in routine general practice.

### ***Assessment against NICE's prioritisation criteria***

Physical activity is considered to have population prevalence that is high when considered in the context of secondary prevention of existing conditions in the QOF (cardiovascular disease, diabetes, mental health) and fully meets the criteria for diagnosis, treatment and monitoring in primary care (by GPs or directly employed practice staff).

The recommendation for **identification and advice in inactive adults using GPPAQ** is considered feasible. The evidence of clinical effectiveness has been assessed as moderate and is likely to be cost effective. The expected change in practice is considered to be moderate–major.

The recommendation for **agreeing goals and providing advice** has feasibility issues to be considered by the Committee and/or indicator development if progressed. The evidence of clinical effectiveness has been assessed as moderate. There is no evidence of cost effectiveness available. The expected change in practice is considered to be moderate–major.

## References

- Bull F, Milton K, Boehler C (2009) Evaluation of the Physical Activity Care Pathway London Feasibility Pilot. Available online: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_105975](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_105975)
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- NICE (2006) NICE costing report for public health intervention guidance no.2 on four commonly used methods to increase physical activity: costing report. Available online: <http://guidance.nice.org.uk/PH2/CostingReport/pdf/English>

## Appendix A: Evidence summary

### Evidence summary of selected recommendations from NICE public health guidance 2

Recommendation	Level of evidence	Key outcomes considered	Specific considerations highlighted by guidance developers	Cost-effectiveness evidence
<p><b>Recommendation 1</b> Primary care practitioners should take the opportunity, whenever possible, to identify inactive adults and advise them to aim for 30 minutes of moderate activity on 5 days of the week (or more). They should use their judgement to determine when this would be inappropriate (for example, because of medical conditions or personal circumstances). They should use a validated tool, such as the Department of Health's forthcoming general practitioner physical activity questionnaire (GPPAQ), to identify inactive individuals.</p>	<p>Studies that used a controlled design (6 individual RCTs, 2 cluster RCTs, and 3 non-randomised controlled trials).</p>	<p>Self-reported physical activity outcomes (increase in levels of exercise/physical activity) at baseline and from 6 weeks post intervention.</p>	<p>In controlled trials aiming to increase physical activity using brief interventions, <b>six studies</b> reported significant increases in physical activity outcomes and five reported no significant effect.</p> <p>Of the six studies that reported significant effects, four studies were delivered by GPs, one by a health visitor and one by an exercise specialist.</p> <p>The guideline developers considered that most interventions could potentially be applied to primary care in the UK with moderate training of health professionals (for example, GPs, practice nurses, health visitors and exercise specialists), moderate additional resources (for example, written materials, facilities for step testing during the consultation) and organisation of follow-up (for example, by health professionals or exercise specialists).</p> <p>The guideline developers noted that for the effect to be sustained at 1 year, the evidence suggests that</p>	<p>Three low quality economic evaluations of brief interventions in primary care were identified.</p> <p>The guideline developers concluded that there is evidence to suggest that interventions aimed at increasing physical activity are cost-effective.</p>

Recommendation	Level of evidence	Key outcomes considered	Specific considerations highlighted by guidance developers	Cost-effectiveness evidence
			<p>several follow-up sessions over a period of 3 to 6 months are required after the initial consultation episode.</p> <p>The guideline developers noted that interventions aimed at older groups seem more effective. However, these were also the studies which involved follow-up and it was uncertain whether this effect was linked to the age of the population or the design of the intervention.</p>	
<p><b>Recommendation 2</b></p> <p>When providing physical activity advice, primary care practitioners should take into account the individual's needs, preferences and circumstances. They should agree goals with them. They should also provide written information about the benefits of activity and the local opportunities to be active. They should follow them up at appropriate intervals over a 3 to 6 month period.</p>	<p>Studies that used a controlled design (6 individual RCTs, 2 cluster RCTs, and 3 controlled non-randomised trials).</p>	<p>Self-reported physical activity outcomes (increase in levels of exercise/physical activity) at baseline and from 6 weeks post intervention.</p>	<p>The guideline developers considered that a 'written prescription' outlining physical activity goals and/or step testing during the consultation may be a useful adjunct to verbal advice to increase physical activity.</p> <p>The guideline developers considered that follow-up over an appropriate time period appears to be more important than the length of individual sessions.</p>	<p>None presented.</p>

## Appendix B: Recommendations identified from NICE or SIGN guidance relating to physical activity and management of conditions and chronic diseases

This appendix provides a list of recommendations identified from NICE or SIGN guidance that relate to physical activity in the context of secondary prevention.

### ***Cardiovascular disease***

#### **NICE clinical guideline 67**

**Cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease.** This guideline was issued by NICE in May 2008.

NICE clinical guideline 67 is for adults (aged 18 and older) who have established CVD (including CHD [angina only], stroke or peripheral arterial disease) or who are at high risk of developing CVD because of a combination of CVD risk factors, including raised blood pressure and hypertension, overweight and obesity.

#### **Lifestyle modifications for the primary and secondary prevention of CVD**

NICE recommendation 1.3.7 (CG67)	People at high risk of or with CVD should be advised to take 30 minutes of physical activity a day, of at least moderate intensity, at least 5 days a week, in line with national guidance for the general population.
NICE recommendation 1.3.8 (CG67)	People who are unable to perform moderate-intensity physical activity at least 5 days a week because of comorbidity, medical conditions or personal circumstances should be encouraged to exercise at their maximum safe capacity.

#### **SIGN guideline 108**

**Management of patients with stroke or TIA: assessment, investigation, immediate management and secondary prevention.** This guideline was published by SIGN in December 2008.

SIGN recommendation 12.9 Exercise (SIGN 108)	Lifelong participation in programmes of exercise after stroke should be encouraged.
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## ***Myocardial infarction***

### **NICE clinical guideline 48**

**Secondary prevention in primary and secondary care for patients following a myocardial infarction.** This guideline was issued by NICE in May 2007.

#### **Lifestyle changes after a myocardial infarction (MI)**

NICE recommendation 1.1.4.1 (CG48)	Patients should be advised to undertake regular physical activity sufficient to increase exercise capacity.
NICE recommendation 1.1.4.2 (CG48)	Patients should be advised to be physically active for 20–30 minutes a day to the point of slight breathlessness. Patients who are not achieving this should be advised to increase their activity in a gradual, step-by-step way, aiming to increase their exercise capacity. They should start at a level that is comfortable, and increase the duration and intensity of activity as they gain fitness.
NICE recommendation 1.1.4.3 (CG48)	Advice on physical activity should involve a discussion about current and past activity levels and preferences. The benefit of exercise may be enhanced by tailored advice from a suitably qualified professional.

## **Diabetes**

### **SIGN guideline 116**

**Management of diabetes.** This guideline was published by SIGN in March 2010.

#### **Lifestyle management**

SIGN recommendation 3.5.4 Effects of physical activity and exercise on the management of diabetes (SIGN 116)	All people with type 2 diabetes should be encouraged to participate in physical activity or structured exercise to improve glycaemic control and cardiovascular risk factors.  All people with type 1 diabetes should be encouraged to participate in physical activity or structured exercise to improve cardiovascular risk factors.
SIGN recommendation 3.5.5 Prescription of physical activity and exercise for people with diabetes (SIGN 116)	Advice about physical exercise and physical activity should be individually tailored and diabetes specific and should includes implications for glucose management and foot care.

## ***Mental health***

### **NICE clinical guideline 90**

**The treatment and management of depression in adults** (partial update of NICE clinical guideline 23). This guideline was issued by NICE in October 2009.

#### **Low-intensity psychosocial interventions**

NICE recommendation 1.4.2.1 (CG90)	For people with persistent subthreshold depressive symptoms or mild to moderate depression, consider offering one or more of the following interventions, guided by the person's preference: <ul style="list-style-type: none"><li>• individual guided self-help based on the principles of cognitive behavioural therapy (CBT)</li><li>• computerised cognitive behavioural therapy (CCBT)</li><li>• a structured group physical activity programme.</li></ul>
NICE recommendation 1.4.2.4 (CG90)	Physical activity programmes for people with persistent subthreshold depressive symptoms or mild to moderate depression should: <ul style="list-style-type: none"><li>• be delivered in groups with support from a competent practitioner</li><li>• consist typically of three sessions per week of moderate duration (45 minutes to 1 hour) over 10 to 14 weeks (average 12 weeks).</li></ul>

## **NICE clinical guideline 91**

**Depression in adults with a chronic physical health problem.** This guideline was issued by NICE in October 2009.

### **Low-intensity psychosocial interventions**

NICE recommendation 1.4.2.1 (CG91)	For patients with persistent subthreshold depressive symptoms or mild to moderate depression and a chronic physical health problem, and for patients with subthreshold depressive symptoms that complicate the care of the chronic physical health problem, consider offering one or more of the following interventions, guided by the patient's preference: <ul style="list-style-type: none"><li>• a structured group physical activity programme</li><li>• a group-based peer support (self-help) programme</li><li>• individual guided self-help based on the principles of cognitive behavioural therapy (CBT)</li><li>• computerised cognitive behavioural therapy (CCBT).</li></ul>
NICE recommendation 1.4.2.2 (CG91)	Physical activity programmes for patients with persistent subthreshold depressive symptoms or mild to moderate depression and a chronic physical health problem, and for patients with subthreshold depressive symptoms that complicate the care of the chronic physical health problem, should: <ul style="list-style-type: none"><li>• be modified (in terms of the duration of the programme and frequency and length of the sessions) for different levels of physical ability as a result of the particular chronic physical health problem, in liaison with the team providing care for the physical health problem</li><li>• be delivered in groups with support from a competent practitioner</li><li>• consist typically of two or three sessions per week of moderate duration (45 minutes to 1 hour) over 10 to 14 weeks (average 12 weeks)</li><li>• be coordinated or integrated with any rehabilitation programme for the chronic physical health problem.</li></ul>

## **SIGN guideline 114**

**The non-pharmaceutical management of depression in adults.** This guideline was published by SIGN in January 2010.

### **Exercise**

SIGN recommendation 5.1 Exercise (SIGN 114)	Structured exercise may be considered as a treatment option for patients with depression.
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## **Appendix C: Chief Medical Officer report findings on the benefits of physical activity in the context of secondary prevention**

This section provides a summary of findings made in the CMO report 'At least five a week' (Department of Health 2004) on the benefits of physical activity across relevant conditions and chronic diseases.

### ***Cardiovascular disease***

- Exercise-based cardiac rehabilitation programmes for patients with coronary heart disease are generally effective in reducing cardiac deaths and lead to important reductions in all-cause mortality.
- Treatment with exercise may also be effective in the rehabilitation of people with stroke.
- For people with peripheral vascular disease exercise rehabilitation can improve walking ability and the ability to perform everyday tasks, and for those with heart failure exercise training can improve quality of life.
- Physical activity has beneficial effects on preventing stroke and treating peripheral vascular disease, and on modifying the classical cardiovascular risk factors such as high blood pressure and adverse lipid profiles.

### ***Type 2 diabetes***

- Among people with type 2 diabetes, regular moderate intensity physical activity carried out three times a week can produce small but significant improvements in blood glucose control. Both aerobic and resistance exercise programmes produce similar benefits. Higher levels of intensity of physical activity produce greater benefits.
- Moderate to high levels of physical fitness appear to reduce the risk of all-cause mortality in patients with type 2 diabetes.
- Regular physical activity can produce metabolic benefits that contribute to management of type 2 diabetes. Also, risk of premature death is much lower in active and fit persons with type 2 diabetes than in patients who are inactive and unfit.

## ***Musculoskeletal health***

- Physical activity programmes can help reduce the risk of falling, and therefore fractures, among older people.
- Physical activity can have beneficial effects for people with osteoarthritis, including those who have had a joint replacement, but too much physical activity can be detrimental.
- A variety of endurance activities that do not over-stress the lower back can alleviate low back pain. General leisure-time activities are recommended for people with low back pain.

## ***Mental illness***

### **Treatment of depression**

- Physical activity has been shown to be effective in reducing clinical symptoms in those diagnosed as severely, moderately or mildly depressed.

### **Treatment of other mental disorders**

- Physical activity has modest beneficial effects for people with generalised anxiety disorder, phobias, panic attacks and stress disorders. It can also have a positive effect on psychological well-being in some patients with schizophrenia.

### **Improvement in health and well-being among people with mental illness**

- Physical activity can have benefits in terms of the well-being and physical health of people with mental illness, even in the absence of recovery from mental illness. People with mental illness have higher levels of morbidity and premature mortality than the rest of the population, mainly due to obesity-related diseases. For people with a mental illness such as schizophrenia, lifestyle interventions that include increased physical activity may be more effective in promoting long-term weight control than pharmacological interventions.
- Physical activity is effective as a treatment of mild, moderate and severe clinical depression. It may also help people with other mental illnesses, and improve their physical and mental well-being even if there is no change in the status of their mental illness.

## ***Cancer***

- There has been little research into the possible effects of physical activity in the treatment of cancer and, so far, there is no evidence to indicate that physical activity can directly affect tumour growth, progression of the disease, or survival. However, physical activity during and following treatment does appear to be associated with a range of improvements in quality of life, including improvements in physical and psychological functioning and a reduction in symptoms such as fatigue and nausea. Most of the trials have involved women with breast cancer.

## **Appendix D: General Practice Physical Activity**

### **Questionnaire: background information**

This is a summary of information about the GPPAQ taken from a report published by the Department of Health (2006), available from:

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_063812](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_063812)

#### **Background**

In 2002 the Department of Health commissioned researchers from the London School of Hygiene & Tropical Medicine to produce a short measure of physical activity, which could be used in routine general practice to assist primary care trusts to meet the National Service Framework recommendations that primary care teams assess and record the modifiable risk factors for each of their patients, including physical activity.

This questionnaire is called the GP Physical Activity Questionnaire (GPPAQ) and was validated for patients aged 16–74 as a screening tool for physical activity levels in primary care.

The GPPAQ is a validated screening tool for use in primary care that:

- is used to assess adult (16–74 years) physical activity levels
- provides a simple, 4-level Physical Activity Index (PAI) categorising patients as: active, moderately active, moderately inactive and inactive. That is correlated to CVD risk
- is used to help inform a practitioner when a brief intervention to increase physical activity is appropriate. All patients who receive a score of less than active should be offered a brief intervention supporting behaviour change to increase physical activity
- can be used as part of the NHS Health Check programme to assess people's risk of heart disease, stroke, kidney disease and diabetes.

In response to the NICE Guidance 2006 endorsing brief interventions for physical activity in primary care, the Department of Health has now developed a physical activity care pathway that uses the GPPAQ to screen patients for inactivity and then offers a brief intervention based on the principles of motivational interviewing to assist behavior change to all those classified as less than active.

The NICE guidance states that if (through validated screening tool, such as GPPAQ) an individual is identified as less than active, practitioners should offer a brief intervention in physical activity. Which should include the following:

- When providing physical activity advice, primary care practitioners should take into account the individual's needs, preferences and circumstances.
- Practitioners should agree goals with people. They should also provide written information about the benefits of activity and the local opportunities to be active.
- Where appropriate a referral into a condition-specific or exercise-on-referral programme should be offered, if they exist in the area.
- Practitioners should provide follow-up at appropriate intervals over a 3 to 6 month period.
- For those with CHD risk of greater than 30% over 10 years, GPPAQ should be completed annually.

The patients defined as 'active' should receive a degree of verbal reinforcement that reflects their current level of physical activity and should be encouraged to either make small increases to their physical activity or continue with their current level.

For those who are classified as 'less than active' through the GPPAQ but say that they walk, further investigation is required into the frequency and intensity. If the practitioner deems the patient sufficiently active protocol for an 'active' patient can follow. If unsure in any way or a patient expresses an interest in increasing their physical activity levels a brief intervention can be given.

If, through GPPAQ, the individual is identified as less than active, practitioners should offer a brief intervention in physical activity.

The GPPAQ comprises:

- A written questionnaire for completion by patients if completed outside of the consultation.
- Electronic template of the questionnaire (Excel) which can be completed during the consultation and automatically generates the Physical Activity Index (PAI).
- Coding algorithm.
- Read Codes for the PAI, which can be used in patient record templates.

The GPPAQ was not evaluated for use in children and young people (younger than 16 years) or adults older than 74 years. Both groups may require age-specific physical activity assessments.

The General Practice Physical Activity Questionnaire takes approximately 30 seconds to fill in.

GPPAQ can be completed:

- by patients waiting for appointments
- in disease specific clinics
- in routine consultations
- in activity clinics.

## **Appendix E: General Practice Physical Activity Questionnaire: evaluation in UK primary care settings**

### ***EVALUATION OF GPPAQ FOR USE IN UK PRIMARY CARE***

#### ***Pilot study 1 (Department of Health, 2006)***

A study was conducted to examine how reliable and accurate the GPPAQ was in routine general practice. Four surgeries were recruited in Coventry, West Midlands. Patients were recruited in waiting rooms.

The pilot study was limited to new registration appointments, but most practitioners suggested other possible uses for the GPPAQ, including hypertension and diabetes clinics.

Department of Health (2006) Updated in 2009. The General Practice Physical Activity Questionnaire: A screening tool to assess adult physical activity levels, within primary care. Available from:

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_063812](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_063812)

#### **Following the completion of the study the following conclusions were drawn:**

- The GPPAQ has good face validity and is acceptable for use in routine general practice.
- The GPPAQ has good construct validity – that is the PAI derived from the questionnaire has the relationship with other measures that we might expect.
- The GPPAQ is repeatable – that is a person who had high physical activity on time tended to have high physical activity on time.
- The PAI derived from the GPPAQ is taken from the original EPIC study which has published criterion validity with positive associations with both daytime energy expenditure and cardiorespiratory fitness.
- The GPPAQ is a simple and ‘quick to administer’ instrument for assessing physical activity in routine general practice. The 4-level PAI derived from the GPPAQ is suitable for ranking an individual’s physical activity for the purpose of

determining the need for intervention or more detailed assessment and can be correlated to the existing Read Codes for physical activity.

- The GPPAQ was used within the Physical Activity Care Pathway feasibility pilot as a screening tool prior to the brief intervention, practitioners reported the questionnaire as taking up to 2 minutes to complete, input and analyse. They also had no problems with language barriers, easily translating the questionnaire as and when required.

### ***Pilot study 2 (Let's Get Moving feasibility study)***

In 2007, the Department of Health developed a draft physical activity care pathway. The pathway involves four key steps: assessment of patients' physical activity levels, brief intervention, signposting to local physical activity opportunities and follow-up consultations.

A feasibility trial was conducted by the British Heart Foundation National Centre based at Loughborough University. As part of the feasibility pilot of the pathway, the GPPAQ tool was retested with a wider audience.

The trial was undertaken with 14 general practices recruited in two waves to allow for a rolling start to the project and also for lessons learnt from wave one to inform and improve delivery and implementation in wave two. Patients were recruited either 'opportunistically' in routine practice or via disease registers.

Bull F, Milton K, Boehler C (2009) Evaluation of the Physical Activity Care Pathway London Feasibility Pilot. Loughborough: Loughborough University. Available from: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_105975](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_105975)

### **Discussion**

The following discussion is taken from Bull et al (2006) in relation to the evaluation of GPPAQ.

### Use and completion of the GPPAQ

Overall, the qualitative results suggest that in general the health practitioners involved in this study were supportive of the use of GPPAQ and found it useful for initiating a discussion about physical activity. Indeed, practitioners reported that they were keen to encourage and reinforce patients to be physically active even if they were not appropriate for the full care pathway. Using the GPPAQ as an 'opening' tool allowed them to do this.

Results from the flow of patients through the care pathway revealed that the GPPAQ was not solely administered to patients identified as potentially eligible. In fact, 34 patients identified as ineligible (due to age, contraindications, or due to the nature of the consultation) completed the GPPAQ with their health professional. This is possibly because practitioners reported using the GPPAQ to establish a routine for starting the care pathway and raising the issue of physical activity thus, the GPPAQ was, in at least some practices, completed prior to making other assessments about patients' eligibility for the care pathway.

Health professionals reported that they liked the GPPAQ because it comprised relatively few questions, was found to be easy to understand and took between 1 – 2 minutes to complete. One practice, [Hounslow] with an 85% non-English speaking population, translated and used the GPPAQ with patients in alternative languages such as Punjabi and Hindi. Despite administering the GPPAQ in another language, this practice reported that the GPPAQ still took approximately two minutes to complete and was viewed favourably by practitioners.

The protocol for administering the GPPAQ requires that any 'walking' reported by patients should be discussed in more detail to verify the nature and intensity. The care pathway protocols enabled health professionals to amend patients' physical activity levels based on this discussion. There were no reports of this causing any difficulties by practitioners.

The available data from tracking patients through the recruitment and eligibility care pathway steps revealed that approximately 80% of patients identified as eligible for the care pathway were interested in receiving the brief intervention. This result is very encouraging. It is, however, worth noting that asking patients about their level of

interest is not altogether consistent with the principles of motivational interviewing. However, in this context of the care pathway, it was justified because it was necessary to appraise patient interest in order to plan to continue with the brief intervention and / or book another appointment. Further consideration of this step of the protocol is warranted when decisions about the final delivery (in one or two consultation) have been made.

#### *Delivery of the brief intervention*

As reported above, patient interest in receiving the brief intervention was high; 78% of patients were interested in practices recruiting 'opportunistically' and 93% from practices recruiting via the disease register approach. The higher proportion of patients in disease register practices is not unexpected given that these patients had already expressed an interest in the care pathway by responding to their initial invitation and attending a consultation for this specific purpose.

## General Practice Physical Activity Questionnaire

1. Please tell us the type and amount of physical activity involved in your work.

		<b>Please mark one box only</b>
a	I am not in employment (e.g. retired, retired for health reasons, unemployed, full-time carer etc.)	
b	I spend most of my time at work sitting (such as in an office)	
c	I spend most of my time at work standing or walking. However, my work does not require much intense physical effort (e.g. shop assistant, hairdresser, security guard, childminder, etc.)	
d	My work involves definite physical effort including handling of heavy objects and use of tools (e.g. plumber, electrician, carpenter, cleaner, hospital nurse, gardener, postal delivery workers etc.)	
e	My work involves vigorous physical activity including handling of very heavy objects (e.g. scaffolder, construction worker, refuse collector, etc.)	

2. During the last week, how many hours did you spend on each of the following activities?  
*Please answer whether you are in employment or not*

Please mark one box only on each row

		<b>None</b>	<b>Some but less than 1 hour</b>	<b>1 hour but less than 3 hours</b>	<b>3 hours or more</b>
a	Physical exercise such as swimming, jogging, aerobics, football, tennis, gym workout etc.				
b	Cycling, including cycling to work and during leisure time				
c	Walking, including walking to work, shopping, for pleasure etc.				
d	Housework/Childcare				
e	Gardening/DIY				

3. How would you describe your usual walking pace? Please mark one box only.

Slow pace (i.e. less than 3 mph)	<input type="checkbox"/>	Steady average pace	<input type="checkbox"/>
Brisk pace	<input type="checkbox"/>	Fast pace (i.e. over 4mph)	<input type="checkbox"/>

**Hit 'Return' to calculate PAI**

## Appendix F: Assessment of topic and recommendations against prioritisation checklist criteria status

This appendix provides assessment of the overall topic and recommendation that has been produced by the QOF programme team. This takes into account information presented in this briefing paper against the revised prioritisation checklist as agreed at the July 2009 Advisory Committee.

### Topic Status

This topic meets the prioritisation criteria for prevalence, primary care management and disease severity as outlined in 1A, 1B and 1C below.

1A Population	
The condition is considered to have population prevalence that is high	<input checked="" type="checkbox"/>
The condition is considered to have population prevalence that is medium	<input type="checkbox"/>
The condition is considered to have population prevalence that is low	<input type="checkbox"/>

1B Management				
		Fully meets criteria	Partly meets criteria	Doesn't meet criteria
		[3]	[2]	[1]
	Score:	[3]	[2]	[1]
The condition is diagnosed in primary care*		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The condition is treated in primary care*		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The condition is monitored in primary care*		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* by general practitioners or directly employed practice staff				

1C Disease Severity		
Score	Scoring criteria	
1	Minor quality-of-life impact, no disability, limited morbidity impact	<input checked="" type="checkbox"/>
2	Definite quality-of-life impact, no disability, limited morbidity impact	<input type="checkbox"/>
3	Definite quality-of-life impact, some disability and/or intermediate morbidity impact	<input type="checkbox"/>

4	Definite quality-of-life impact, significant disability and/or significant morbidity impact	<input type="checkbox"/>
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### **Recommendation status**

The individual recommendations are assessed on feasibility, strength of clinical and cost effectiveness evidence and expected change in practice.

<b>Feasibility of each recommendation</b>	
NICE recommendation 1	Green
NICE recommendation 2	Amber

<b>Scores for each recommendation</b>			
	<b>Evidence of clinical effectiveness</b>	<b>Evidence of cost effectiveness</b>	<b>Expected change in practice</b>
NICE recommendation 1	Moderate	Likely to be cost effective	Moderate–major
NICE recommendation 2	Moderate	No data available	Moderate–major