

Cardiovascular disease: identifying and supporting people most at risk of dying early

Public health guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should [assess and reduce the environmental impact of implementing NICE recommendations](#) wherever possible.

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Overview

This guideline covers the risk of early death from heart disease and other smoking-related illnesses. It aims to reduce the number of people who are disadvantaged dying prematurely by ensuring people have better access to flexible, well-coordinated treatment and support.

Who is it for?

- Health and social care practitioners
- Organisations planning, providing or supporting services that support disadvantaged people
- Adults with a high risk of heart disease (including smokers and people with high cholesterol), their families and carers and the general public

Introduction

The Department of Health (DH) asked NICE to produce public health guidance on what works in driving down population mortality rates in disadvantaged areas, where risk of early death is higher than average, with particular reference to proactive case finding and retention and access to services.

The recommendations have been developed for smoking cessation services and the provision of statins. Although the referral specified a focus on people in disadvantaged areas, the recommendations are relevant for all those who are disadvantaged, regardless of where they live.

The guidance is for NHS and other professionals who have a direct or indirect role in, and responsibility for, services aimed at people who are disadvantaged. This includes those working in local authorities and the wider public, voluntary and community sectors. It may also be of interest to members of the public.

NICE guidance on community engagement, behaviour change, smoking cessation, statins and lipid modification complements and supports this guidance.

The Public Health Interventions Advisory Committee (PHIAC) has considered the reviews of the evidence, a mapping review, an economic appraisal, stakeholder comments and the results of fieldwork in developing these recommendations.

Details of PHIAC membership are given in [appendix A](#). The methods used to develop the guidance are summarised in [appendix B](#). Supporting documents used in the preparation of this document are listed in [appendix E](#). Full details of the [evidence collated, including fieldwork data and activities and stakeholder comments](#), are available on the NICE website, along with a [list of the stakeholders involved](#) and the supporting process and methods manuals.

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

This guideline constitutes NICE's formal guidance on what works in finding and supporting those most at risk of early death and improving their access to services.

The evidence statements that underpin the recommendations are listed in [appendix C](#).

Definitions

Definitions of adults who are disadvantaged and of what constitutes a disadvantaged area and a high risk of cardiovascular disease (CVD), along with a brief explanation of why there was a focus on smoking cessation and statin interventions.

- Adults who are disadvantaged include (but are not limited to):
 - those on a low income (or who are members of a low-income family)
 - those on benefits
 - those living in public or social housing
 - some members of black and minority ethnic groups
 - those with a mental health problem
 - those with a learning disability
 - those who are institutionalised (including those serving a custodial sentence)

- those who are homeless.
- Local agencies (such as local authorities and primary care trusts [PCTs]) define disadvantaged areas in a variety of ways. An example is the Index of Multiple Deprivation 2007 (ID 2007). This combines indicators on economic, social and housing issues to produce a single deprivation score.
- According to NICE guidance, if someone has a 20% or higher risk of a first cardiovascular event in the next 10 years, they are deemed at high risk of CVD (see [NICE's guideline on cardiovascular disease: risk assessment and reduction, including lipid modification](#)).

Smoking cessation and statins

Smoking cessation and statin interventions were used as the basis of the recommendations because:

- Methods of identifying and supporting adults and improving their access to services need to be assessed using interventions which have already been established as effective and cost effective. Smoking cessation services and the provision of statins are both generally agreed to be effective and cost effective.
- Epidemiological data show a clear socioeconomic gradient for smoking and CVD. Tackling smoking and providing statins, as recommended, should make a significant contribution to reducing health inequalities.

This guidance should be used alongside [NICE's guideline on tobacco: preventing uptake, promoting quitting and treating dependence](#) and the [recommendations on statins and lipid modification therapy](#) in NICE's guideline on cardiovascular disease.

Cost effectiveness

Smoking cessation interventions are generally cost effective, irrespective of the target audience, the methods used to identify and recruit adults or the type of service offered. It is also cost effective to identify adults in secondary care who are disadvantaged and need statins (and then prescribe these drugs). In primary care, the cost effectiveness of identifying people at risk of CVD and providing them with statins is determined by the number at risk of CVD in the baseline population. (The more people at risk, the more cost effective it becomes to identify them and provide them with statins.)

Tackling health inequalities

Health inequalities are so deeply entrenched that providing disadvantaged groups or areas with better services – and better access to those services – can only be one element of a broader strategy to address the distribution of the wider determinants of health. All activities need to be developed and sustained on a long-term basis.

The recommendations focus on system and structural changes to ensure effective clinical and public health practice can take place. This requires a comprehensive approach at all levels of the health system (for example, involving both practitioners and commissioners) and in partnership with others in the wider public, community and voluntary sectors. The recommendations are not aimed at clinical practice itself as the relevant advice is found in other NICE guidance.

Effective implementation of the recommendations will require:

- an appropriate infrastructure and resources for commissioners, planners and service providers
- policy initiatives which prioritise health inequalities and ensure action to tackle them are included in PCT plans and local area agreements.

Recommendation 1: identifying adults at risk

Who is the target population?

Adults who are disadvantaged:

- who smoke **and/or**
- who are eligible for statins **and/or**
- who are at high risk of CVD due to other factors.

Who should take action?

Service providers and commissioners (for example, general practices, PCTs, community services, local authorities and others with a remit for tackling health inequalities).

What action should they take?

- Primary care professionals should use a range of methods to identify adults who are disadvantaged and at high risk of premature death from CVD. These include:
 - primary care and general practice registers (for example, to identify adults who smoke; who are from particular minority ethnic groups; or who have family members who have had premature coronary heart disease)
 - primary care appointments (for example, during routine visits and screening)
 - systematic searches in pre-identified areas or with specific populations (for example, using direct mail or telephone)
 - analyses of quality outcomes framework (QOF) data.
- Those working with communities should use a range of methods to identify adults who are disadvantaged and at high risk of CVD. Methods to use include:
 - health sessions run at a range of community and public sites, including post offices, charity shops, supermarkets, community pharmacies, homeless centres, workplaces, prisons and long-stay psychiatric institutions. (Lifestyle factors such as smoking or other indicators, such as blood pressure, could be used to identify those at risk)
 - culturally sensitive education sessions that include a CVD risk assessment and which take place in black and minority ethnic community settings (including places of worship)
 - outreach activities provided by community health workers (including health trainers).
- Service providers should monitor these methods and adjust them according to local needs.
- Service providers should encourage everyone who is disadvantaged to register with a general practice.

Recommendation 2: improving services for adults and retaining them

Who is the target population?

Adults who are disadvantaged:

- who smoke **and/or**
- who are eligible for statins **and/or**
- who are at high risk of CVD due to other factors.

Who should take action?

Service providers (for example, PCTs, general practices, community services, local authorities and other organisations with a remit for tackling health inequalities).

What action should they take?

- Provide flexible, coordinated services that meet the needs of individuals who are disadvantaged. For example, this could include providing drop-in or community-based services, outreach and out-of-hours services, advice and help in the workplace and single-sex sessions.
- Involve people who are disadvantaged in the planning and development of services. Seek feedback from the target groups on whether the services are accessible, appropriate and meeting their needs.
- Gain the trust of adults who are disadvantaged. Offer them proactive support. This could include helplines, brochures and invitations to attend services. It could also include providing GPs with postal prompts to remind them to monitor people who are disadvantaged and who have had an acute coronary event.
- Develop and deliver non-judgemental programmes to tackle social and psychological barriers to change. These should be tailored to people's needs. For example, they could make use of social marketing techniques. (Social marketing involves using marketing and related techniques to achieve specific behavioural goals.)

- Ensure services are sensitive to culture, gender and age. For example, provide multi-lingual literature in a culturally acceptable style and involve community, religious and lay groups in its production. Where appropriate, offer translation and interpretation facilities. Promote services using culturally relevant local and national media, as well as representatives of different ethnic groups. Consider providing information in video or web-based format.
- Provide services in places that are easily accessible to people who are disadvantaged (such as community pharmacies and shopping centres) and at times to suit them.
- Provide support to ensure people who are disadvantaged can attend appointments (for example, this may include help with transport, postal prompts and offering home visits).
- Encourage and support people who are disadvantaged to follow the treatment that they have agreed to. For example, encourage them to use self-management techniques (based on an individual assessment) to solve problems and set goals. It could also involve providing vouchers for treatments (such as nicotine replacement therapy [NRT]). (For recommendations on the principles of behaviour change, see [NICE's guideline on behaviour change: general approaches](#)).
- Routinely search GP databases (and other electronic medical records) to generate lists of patients who have not collected repeat prescriptions or attended follow-up appointments. Make contact with them.
- Address factors that prevent people who are disadvantaged from using services (for example, they may have a fear of failure or of being judged, or they might not know what services and treatments are available).
- Support the development and implementation of regional and national strategies to tackle health inequalities by delivering local activities which are proven to be effective.
- Use health equity audits to determine if services are reaching people who are disadvantaged and whether they are effective. (For example, by matching the postcodes of service users to deprivation indicators and smoking prevalence.) Health equity audits typically consist of 6 steps: 1. agreeing partners and issues for the audit; 2. undertaking an equity profile; 3. identifying high-impact local action to narrow key inequities identified; 4. agreeing priorities for action; 5. securing changes in investment; and service delivery; 6. Reviewing progress and assessing impact (Department of Health 'Health equity audit: a self-assessment tool').

Recommendation 3: system incentives

Who is the target population?

Service providers (for example, PCTs, community services, local authorities and others with a remit for tackling health inequalities) and practice-based commissioning (PBC) groups.

Who should take action?

Policy makers, planners and commissioners.

What action should they take?

- Support and sustain activities aimed at improving the health of people who are disadvantaged by:
 - using relevant indicators to measure progress and compare performance across areas or organisations
 - ensuring, wherever possible, that all targets aim to tackle health inequalities – and do not increase them
 - ensuring exception-reporting does not increase health inequalities: PCTs should be provided with additional levers and tools to monitor and benchmark exception-reporting and to reduce persistent rates of exception coding
 - considering the provision of comparative performance data to encourage providers to meet targets
 - using local enhanced services to encourage providers and practitioners to identify and continue to support those who are at risk of premature death from CVD and other smoking-related diseases.
- Provide incentives for local projects that improve the health of people who are disadvantaged, specifically those who smoke or are at high risk of CVD from other causes or are eligible for statins. Ensure the projects are evaluated and, if effective, ensure they continue.

Recommendation 4: partnership working

Who is the target population?

Adults who are disadvantaged:

- who smoke **and/or**
- who are eligible for statins **and/or**
- who are at high risk of CVD due to other factors.

Who should take action?

Planners, commissioners and service providers with a remit for tackling health inequalities. This includes PCTs, general practices, community services, PBC groups, local strategic partnerships, local authorities (including education and social services), the criminal justice system and members of the voluntary and business sectors.

What action should they take?

- Develop and sustain partnerships with professionals and community workers who are in contact with people who are disadvantaged. Use joint strategic needs assessments, local area agreements, local strategic partnerships, the GP contract, world class commissioning and other mechanisms. (For recommendations on community engagement, see [NICE's guideline on community engagement: improving health and wellbeing and reducing health inequalities](#).)
- Establish relationships between primary care practitioners and the community to understand how best to identify and help adults who are disadvantaged to adopt healthier lifestyles. For example, they should jointly determine how best to support health initiatives delivered as part of a local neighbourhood renewal strategy.
- Establish relationships with secondary care professionals (for example, those working in respiratory medicine and CVD clinics) to help identify patients at high risk of further cardiovascular events. Offer these patients support or refer them on, where appropriate.
- Develop and maintain a database of local initiatives that aim to reduce health

inequalities by improving the health of people who are disadvantaged.

- Develop and sustain local and national networks for sharing local experiences. Ensure mechanisms are in place to evaluate and learn from these activities on a continuing, systematic basis.
- Ensure those working in the healthcare, community and voluntary sectors coordinate their efforts to identify people who need help.

Recommendation 5: training and capacity

Who is the target population?

Service providers (for example, general practices, PCTs, local authorities, community and lay workers and others with a remit for tackling health inequalities).

Who should take action?

Commissioners and service providers (for example, PCTs, community services, local authorities and others with a remit for tackling health inequalities).

What action should they take?

- Ensure there are enough practitioners with the necessary skills to help people who are disadvantaged to adopt healthier lifestyles. (For examples of the skills needed, see [NICE's guideline on tobacco: preventing uptake, promoting quitting and treating dependence](#), and the Health Development Agency's 'Standard for training in smoking cessation treatments' or updated versions of this.)
- Ensure practitioners have the skills to identify people who are disadvantaged and can develop services to meet their needs. (For a set of generic principles to use when planning and delivering activities aimed at changing health-related behaviour, see [NICE's guideline on behaviour change: general approaches](#). For advice on getting communities involved, see [NICE's guideline on community engagement: improving health and wellbeing and reducing health inequalities](#).)
- Ensure service providers and practitioners have the ability to make services responsive to the needs of people who are disadvantaged. For example, they should

be able to compare service provision with need, access, use and outcome using health equity audits. (For examples of the training and skills needed, refer to national organisations such as the Faculty of Public Health, British Psychological Society, Skills for Health and the Institute of Environmental Health.)

Public health need and practice

People who enjoy a lifetime of advantage are likely to live longer, healthier lives than those who experience disadvantage (Graham and Power 2004; Kawachi and Kennedy 1997; Wilkinson 1996). Yet despite increased prosperity and reductions in mortality among some population groups, cardiovascular disease (CVD), other smoking-related diseases and smoking are still more prevalent among lower socioeconomic and certain ethnic groups compared with the general population.

Since 1995 to 1997, circulatory diseases have become more prevalent, in relative terms, among disadvantaged groups. For example, in 2004 to 2006, 44 more people per 100,000 (aged under 75) died from circulatory disease in the most deprived fifth of local authority districts than in the least deprived areas. In relative terms, this means the death rate from circulatory disease was 71% higher in the most deprived areas compared with the least deprived areas (DH 2008a).

Since 1998 there has been no significant change in smoking prevalence among adults in manual groups compared to non-manual groups in absolute terms (and some signs of a widening in the gap in relative terms). In 2006 in Britain, smoking prevalence was twice as high among unskilled workers than among professionals (33% and 16% respectively among routine-and-manual and managerial-and-professional groups respectively [Office for National Statistics 2007]).

Factors linked to health inequalities

Factors such as poor living conditions, lower educational achievement and behaviours which damage health (such as smoking) lead to a greater than average risk of premature death, greater morbidity and lower life expectancy. People in lower socioeconomic groups are more likely to adopt behaviours that may damage their health (Graham and Power 2004; Kawachi and Kennedy 1997; Wilkinson 1996).

As a result, there is a steep social class gradient for many different conditions that affect health (DH 2008a). For example, the death rate from coronary heart disease (CHD) is 3 times higher among unskilled workers than among professionals. Similarly, deaths from lung cancer are 4 times higher among unskilled male manual workers of working age than among professional men (reflecting the fact that smoking is much more common among

male manual workers than their professional counterparts; Twigg et al. 2004).

Tackling health inequalities

Government policy encourages PCTs, local authorities and others to identify and target groups and neighbourhoods where health – and the use of health services – is worst. For example:

- 'Health inequalities – progress and next steps' (DH 2008b) sets out how the government intends to invest in programmes that have proved a success to achieve its 2010 health inequalities targets. Beyond 2010, it plans to develop new goals, structures and systems to support delivery and sustain the improvements that have been achieved.
- The latest comprehensive spending review (HM Government 2007) makes reducing health inequalities a priority, as does the operating framework for the NHS in 2008/09 (DH 2007a). It has also been made a priority in NHS planning guidance for the 3 years until 2011 (DH 2008c).
- The document 'PSA delivery agreement 18: promote better health and wellbeing for all' reaffirms the government's commitment to reduce (by 2010) the social class gap in infant mortality and the life expectancy gap (including mortalities from CVD and cancer) between the most deprived areas and the rest of the population. (The most deprived areas are defined as the Spearhead group of local authority and PCT areas.) It also reaffirms its commitment to reduce smoking prevalence among 'routine' and manual groups (HM Government 2007).
- The cancer reform strategy (DH 2007b) makes reducing the social class differential in the prevalence of cancer a priority. It highlights action to prevent cancer, particularly by reducing smoking among the population.
- From 2008, new statutory requirements arising from the Local Government and Public Involvement in Health Act 2007 underpin local partnership working, particularly between local authorities and PCTs (UK Parliament 2007). For example, local authorities and PCTs must carry out a joint strategic needs assessment for their area and agree joint local area agreement (LAA) targets (Department for Communities and Local Government 2007). These new requirements are a feature of national performance management and should create a more supportive environment for the NHS. They support the NHS strategy to reduce mortality and morbidity from cancer,

CVD and other smoking-related diseases and the white paper 'Pharmacy in England'. (The latter wants to see pharmacists' providing a range of smoking cessation services (DH 2008d).

Challenges to preventing cancer and CVD

Helping people to stop smoking and the provision of statins are 2 of the most widely used interventions to prevent cancer and CVD. Both have been shown to be effective and cost effective generally – and both have considerable potential to reduce premature mortality rates among people who are disadvantaged (Raw et al. 2001; Ward et al. 2007). However, numerous factors prevent them from being fully effective including: lack of available, appropriate and accessible primary care services; the reluctance of many people within vulnerable or at-risk communities to use health services or to follow agreed treatment (DH 1999; Dixon 2000).

Finding effective ways of identifying at-risk or vulnerable groups, tailoring services to make them accessible and keeping people in the system ('client retention') are still key challenges. For example, simply improving services does not guarantee that they will be used by those most in need of them. Nor will it necessarily increase the number of people who follow treatments they have agreed to.

Considerations

PHIAC took account of a number of factors and issues in making the recommendations.

- PHIAC considers a cross-government approach is required to tackle health inequalities and that high quality public services can make an important contribution. Although relatively narrow in scope, PHIAC considers that the interventions in this guidance will make a contribution to reducing health inequalities, particularly if set within wider health promoting policies (such as tobacco control and healthy eating).
- The prevalence of diseases with a strong socioeconomic gradient may vary from one location to another. PHIAC recognises that people who are disadvantaged (specifically, those with a higher-than-average risk of premature death from smoking-related diseases and cardiovascular disease [CVD] from other causes) are not necessarily located in areas defined as disadvantaged. The guidance, therefore, is applicable to these people – regardless of where they live.
- PHIAC is mindful that a lack of resources (within the NHS and other sectors) has sometimes confounded attempts to address health inequalities. Adequate resources (financial, time, equipment and people) need to be deployed effectively to meet the needs of people who are disadvantaged.
- People who are disadvantaged face social and economic issues that may adversely affect their ability to respond to the treatments or advice on offer.
- Few, if any, studies in the effectiveness reviews focused primarily on reducing health inequalities. Studies that did include relevant variables were not usually large enough to analyse outcomes in relation to different subgroups. As a result, it's unclear from these studies which methods are most effective at reaching people or groups that are disadvantaged. Smoking cessation and the provision of statins (both generally agreed to be effective interventions) provide clear pointers on how to meet the needs of people who are disadvantaged. They also form a key part of the government's approach to tackling health inequalities.
- PHIAC would like to encourage research trials that are large enough to assess the impact of interventions on different subgroups. This is especially important where the topic is known to have a clear socioeconomic gradient or affects some ethnic groups more than others (for example, smoking and heart disease).

- Given the paucity of evidence on how to identify and support people who are disadvantaged, PHAC felt it was important not to be prescriptive but to encourage innovation. It believes local people and services should be given the support they need to develop a range of approaches to tackling health inequalities. New approaches must be evaluated to build the evidence base on how best to reach, engage and improve the health of people who are disadvantaged.
- There is sometimes a mismatch between policy direction and service targets. For instance, the targets for NHS Stop Smoking Services do not focus on the most hard-to-reach groups, despite the thrust of stated policy.
- PHAC stressed that the quality and outcomes framework (QOF) needs to be modified to give GPs a greater incentive to find and treat those who are disadvantaged and at greatest risk of premature death from preventable conditions. GPs could play an important role in tackling such health inequalities and PHAC considers that financial incentives would help. In the meantime, the Committee believes joint working with the voluntary and community sectors is needed to identify individuals who are not registered with a general practice. Similarly, joint working is needed to identify those who have been missed as a result of exception reporting.
- The mapping review identified a wide range of activities aimed at both people who are disadvantaged and at disadvantaged areas. These activities appear to operate as discrete and specific projects. It is important to find ways to include these activities in mainstream services so that they are not treated as additional activities or exceptions to the general rule.
- PHAC considers that evaluation (including evaluation of the impact of services on different subgroups) should be an integral part of new policies and services.
- The recommendations made in this guidance aim to support and complement other initiatives to reduce premature mortality. Of particular relevance is the coordinated vascular disease control programme commissioned by the UK National Screening Committee. This is set out in the [UK National Screening Committee's handbook for vascular risk assessment, risk reduction and risk management](#). The aim is to identify and reduce the risk of CVD in the general population. Also of relevance is the [Department of Health's vascular checks programme](#), announced in January 2008. This focuses on everyone aged between 40 and 74.

Recommendations for research

PHIAC recommends that the following research questions should be addressed in order to improve the evidence relating to finding, supporting and retaining those most at risk of premature deaths from cardiovascular disease (CVD) and other smoking-related diseases and improving their access to services. It notes that 'effectiveness' in this context relates not only to the size of the effect, but also to the cost effectiveness, duration of effect and harmful/negative effects.

1 Proactive case-finding and retention and access to services

Can the research on proactive case-finding and retention and access to services in relation to smoking cessation and the provision of statins be applied to other services aimed at the reduction of premature mortality amongst disadvantaged people? If so, to what extent?

2 Incentives

What factors influence the acceptability and effectiveness of incentives to identify, engage and retain people within the health system? Does the use of incentives lead to any adverse consequences? If so, why and under what circumstances?

3 Expansion of small-scale interventions

Do cost-effective, small-scale interventions remain cost effective when they are expanded? If so, what is the best way to expand them?

4 Level and nature of disadvantage of the target population

To what extent, if any, does the level and nature of disadvantage of the target population affect the effectiveness and cost effectiveness of interventions?

5 Service uptake

How does service uptake change when different barriers to service use are addressed either individually or in combination?

More detail on the evidence gaps identified during the development of this guidance is provided in [appendix D](#).

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Appendix A: Membership of the Public Health Interventions Advisory Committee (PHIAC), the NICE project team and external contractors

Public Health Interventions Advisory Committee (PHIAC)

NICE has set up a standing committee, the Public Health Interventions Advisory Committee (PHIAC), which reviews the evidence and develops recommendations on public health interventions. Membership of PHIAC is multidisciplinary, comprising public health practitioners, clinicians (both specialists and generalists), local authority employees, representatives of the public, patients and carers, academics and technical experts as follows.

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External contractors

External reviewers: reviews of effectiveness

Review 1: 'The effectiveness of smoking cessation interventions to reduce the rates of premature death in disadvantaged areas through proactive case finding, retention and access to services' was carried out by the Department of Social and Policy Sciences, University of Bath. The principal authors were: Linda Bauld, Lucy Hackshaw, Ann McNeill, Rachael Murray.

Review 2: 'The use of statins: proactive case finding, retention and improving access to services in disadvantaged areas' was carried out by the College of Medicine, University of Wales. The principal authors were: Hilary Kitcher, Mala Mann, Fiona Morgan, Helen Morgan, Lesley Sander, Ruth Turley, Alison Weightman.

External reviewers: mapping review

Mapping review: 'Guidance for the NHS and other sectors on interventions that reduce the rates of premature death in disadvantaged areas: proactive case finding and retention and improving access to services' was carried out by the School for Health, Durham University. The principal authors were: Jean Brown, David J Hunter, Helen Jennings-Peel, Linda Marks.

External reviewer: economic appraisal

Economic appraisal: 'Rapid review of economic evidence of interventions to reduce the rate of premature death in the most disadvantaged populations'; 'Economic analysis of interventions to improve the use of statins interventions in the general population'; 'Economic analysis of interventions to improve the use of statins in disadvantaged

populations'; 'Economic analysis of interventions to improve the use of smoking cessation interventions in the general population'; 'Economic analysis of interventions to improve the use of smoking cessation interventions in disadvantaged populations'; 'Supplementary economic analysis on interventions to reduce health inequalities'. The economic appraisal was carried out by Matrix Consulting.

Fieldwork

Fieldwork report: 'Reducing the rate of premature deaths from CVD and other smoking-related diseases: finding and supporting those most at risk and improving access to services' was carried out by Dr Foster Intelligence.

Appendix B: Summary of the methods used to develop this guidance

Introduction

The reports of the reviews and economic appraisal include full details of the methods used to select the evidence (including search strategies), assess its quality and summarise it.

The minutes of the PHIAC meetings provide further detail about the Committee's interpretation of the evidence and development of the recommendations.

All [supporting documents](#) are listed in [appendix E](#).

Key questions

The key questions were established as part of the scope. They formed the starting point for the reviews of evidence and facilitated the development of recommendations by PHIAC. The 2 overarching questions focused on:

- the use of statins to combat cardiovascular disease (CVD)
- smoking cessation activities.

Statins

- What are the most effective and cost-effective methods of identifying and supporting people at increased risk of developing CVD, or who already have CVD?
 - What are the most effective and cost-effective methods of improving access to services, under what circumstances, for whom and when?
 - What type of support is most effective for different groups, under what circumstances and when?
 - Is there a trade-off between equity and efficiency?

Smoking cessation

- What are the most effective and cost-effective methods of identifying and supporting people aged 16 years and over who want to stop smoking, in particular, pregnant women, manual workers and those from disadvantaged backgrounds?
 - What are the most effective and cost-effective methods of improving access to services, under what circumstances, for whom and when?
 - What type of support is most effective for different groups, under what circumstances and when?
 - Is there a trade-off between equity and efficiency?

Reviewing the evidence of effectiveness

Two reviews of effectiveness were conducted.

Identifying the evidence

The following databases were searched (from 1995 to 2007):

- AMED (Allied and Complementary Medicine)
- ASSIA (Applied Social Science Index and Abstracts)
- British Nursing Index
- CINAHL (Cumulative Index of Nursing and Allied Health Literature)
- Cochrane Central Register of Controlled Trails
- Cochrane Database of Systematic Reviews (CDSR)
- Database of Abstracts of Reviews of Effectiveness (DARE)
- EMBASE
- EPPI Centre Databases
- HMIC (Health Management Information Consortium – comprises King's Fund and DH-Data databases)

- MEDLINE
- PsychINFO
- SIGLE (System for Information on Grey Literature in Europe)
- Social Policy and Practice
- Sociological Abstracts

Other relevant databases (including sources of grey literature) were also searched, along with references from included studies. The following websites were searched:

- Community Development Xchange
- Department of Health coronary heart disease policy section
- European directory of good practices to reduce health inequalities
- NHS networks
- World Health Organization (WHO) Health Evidence Network.

In addition, information was sought from experts.

Selection criteria

Studies of primary and secondary prevention activities were included in the effectiveness reviews if they aimed to:

- find and then support adults at increased risk of developing (or with established) CHD (coronary heart disease; note, the statins search included CVD)
- provide adults at increased risk of developing (or with established) CHD with support services – or improved access to those services (note, the statins search included CVD)
- find and help people who smoke (aged 16 years and over) to stop or reduce the habit
- provide people who smoke (aged 16 years and over) with smoking cessation services – or improve their access to those services.

Studies were excluded if the interventions:

- did not aim to reduce or eliminate premature deaths from CHD or other smoking-related causes
- tackled the wider determinants of health inequalities (for example, using macro-level policies to tackle poverty and economic disadvantage).

Quality appraisal

Included papers were assessed for methodological rigour and quality using the NICE methodology checklist, as set out in the NICE technical manual 'Methods for development of NICE public health guidance'. Each study was described by study type and graded (++, +, -) to reflect the risk of potential bias arising from its design and execution.

Study type

- Meta-analyses, systematic reviews of randomised controlled trials (RCTs) or RCTs (including cluster RCTs).
- Systematic reviews of, or individual, non-randomised controlled trials, case-control studies, cohort studies, controlled before-and-after (CBA) studies, interrupted time series (ITS) studies, correlation studies.
- Non-analytical studies (for example, case reports, case series).
- Expert opinion, formal consensus.

Study quality

++ All or most criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter.

+ Some criteria fulfilled. Those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.

- Few or no criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

Summarising the evidence and making evidence statements

The review data was summarised in evidence tables (see the full [evidence reviews](#)).

The findings from the reviews were synthesised and used as the basis for a number of evidence statements relating to each key question. The evidence statements reflect the strength (quantity, type and quality) of evidence and its applicability to the populations and settings in the scope.

Study of current practice

The mapping review aimed to identify and describe smoking cessation interventions and the provision of statins in disadvantaged areas and among disadvantaged individuals. It looked at:

- ways of reaching people who need this type of support (proactive case finding)
- how to encourage those people to keep in touch with services (retention)
- service accessibility.

Projects and interventions were identified via:

- telephone interviews
- documentary analysis
- questionnaires
- scanning of selected conference archives and databases (where these were available online).

Work was carried out in 2 phases over a 3-month period. In phase one, semi-structured telephone interviews were carried out with a wide range of national and regional organisations to identify local contacts, interventions and approaches. Selected conference archives and project databases were also scanned. In phase 2, interventions were identified through questionnaires completed by local stakeholders and by analysing local documents. Full details are in the [supporting evidence documents](#).

Economic appraisal

The economic appraisal consisted of a review of economic evaluations, 4 cost-effectiveness reports and a supplementary cost-effectiveness analysis. The cost-effectiveness reports covered:

- Statins: 1 report focused on disadvantaged people, the other looked at the general population. They focused on how to: identify people at risk, improve or increase their access to services, ensure people who require treatment stay in the system and adhere to the treatment protocol.
- Smoking cessation: 1 report focused on disadvantaged people, the other looked at the general population. They focused on how to: identify people at risk, improve or increase their access to services, ensure people who require treatment stay in the system and adhere to the treatment protocol.

Review of economic evaluations

The review was conducted using the databases listed for the effectiveness reviews and the following economic databases:

- Econlit
- Health Economic Evaluation Database (HEED)
- NHS Economic Evaluation Database (NHS EED).

The small number of studies involved and the difficulties involved in making direct comparisons across studies (for instance, due to lack of information on the base year used to estimate prices) meant that it was not possible to undertake a quantitative synthesis of the results.

Cost-effectiveness analysis

An economic model was constructed to incorporate data from the reviews of effectiveness and cost effectiveness. The approach was applied to all 4 cost-effectiveness reports. The results are reported in:

- 'Economic analysis of interventions to improve the use of statins interventions in the

general population.'

- 'Economic analysis of interventions to improve the use of statins in disadvantaged populations.'
- 'Economic analysis of interventions to improve the use of smoking cessation interventions in the general population.'
- 'Economic analysis of interventions to improve the use of smoking cessation interventions in disadvantaged populations.'

An additional, supplementary economic analysis was undertaken to answer a number of questions posed by PHIAC.

See the [economic analysis reports](#).

Fieldwork

Fieldwork was carried out to evaluate the relevance and usefulness of NICE guidance for practitioners and the feasibility of implementation. It was conducted with practitioners and commissioners who are involved in smoking cessation services and statin provision. Participants included: strategic health authority directors, primary care trust directors of public health and public health teams, commissioning managers and performance managers, GPs and primary care nurses. They also included community pharmacists, health trainers and managers and representatives from other public and voluntary organisations, including New Deal for Communities.

The fieldwork comprised:

A qualitative study involving a range of different professionals across 4 locations (Coventry, Liverpool, London and Northampton) carried out by Dr Foster Intelligence. The main issues arising from this study are set out in [appendix C](#) under fieldwork findings. See the [full fieldwork report](#) 'Reducing the rate of premature deaths from CVD and other smoking-related diseases: finding and supporting those most at risk and improving access to services'.

How PHIAC formulated the recommendations

At its meetings in November 2007 and March 2008 PHIAC considered the evidence of

effectiveness and cost effectiveness to determine:

- whether there was sufficient evidence (in terms of quantity, quality and applicability) to form a judgement
- whether, on balance, the evidence demonstrates that the intervention is effective or ineffective, or whether it is equivocal
- where there is an effect, the typical size of effect.

PHIAC developed draft recommendations through informal consensus, based on the following criteria.

- Strength (quality and quantity) of evidence of effectiveness and its applicability to the populations/settings referred to in the scope.
- Effect size and potential impact on population health and/or reducing inequalities in health.
- Cost effectiveness (for the NHS and other public sector organisations).
- Balance of risks and benefits.
- Ease of implementation and the anticipated extent of change in practice that would be required.

Where possible, recommendations were linked to an evidence statement(s) (see [appendix C](#) for details). Where a recommendation was inferred from the evidence, this was indicated by the reference 'IDE' (inference derived from the evidence).

The draft guidance, including the recommendations, was released for consultation in April 2008. At its meeting in June 2008, PHIAC considered comments from stakeholders and the results from fieldwork and amended the guidance. The guidance was signed off by the NICE Guidance Executive in July 2008.

Appendix C: The evidence

This appendix lists evidence statements provided by 2 reviews and links them to the relevant recommendations (see [appendix B](#) for the key to study types and quality assessments). The evidence statements are presented here without references – these can be found in the full review (see [appendix E](#) for details). It also sets out a brief summary of findings from the economic appraisal.

The 2 reviews of effectiveness are:

- 'The effectiveness of smoking cessation interventions to reduce the rates of premature death in disadvantaged areas through proactive case finding, retention and access to services.'
- 'The use of statins: proactive case finding, retention and improving access to services in disadvantaged areas'.

Evidence statement '1SM' indicates that the linked statement is numbered '1' in the review 'The effectiveness of smoking cessation interventions to reduce the rates of premature death in disadvantaged areas through proactive case finding, retention and access to services'. Evidence statement '1ST' indicates that the linked statement is numbered '1' in the review 'The use of statins: proactive case finding, retention and improving access to services in disadvantaged areas'. 'MR' is used to indicate that supporting evidence on current practice can be found in the mapping review.

As noted in [appendix B](#), study quality provides an overall indication of how well a study was conducted to minimise the likelihood of bias. For example, a quality rating of '++' indicates minimal likelihood of bias, whereas a rating of '-' indicates a significant likelihood of bias. Some of the studies that informed the evidence statements below were rated '-', due to poor methodology. However, this quality rating does not always apply to the way the studies actually identified, supported and improved individuals' access to services – the areas under investigation for this guidance.

See the [evidence reviews and economic appraisal](#) for details. Where a recommendation is not directly taken from the evidence statements, but is inferred from the evidence, this is indicated by 'IDE' (inference derived from the evidence) below.

Where PHIAC has considered other evidence, it is linked to the appropriate recommendation below. It is also listed in the additional evidence section of this appendix.

Recommendation 1: evidence statements 1SM, 2SM, 6SM, 10SM, 13SM, 1ST, 2ST, 5ST, 7ST, 9ST, 10ST, 11ST, 12ST; MR

Recommendation 2: evidence statements 2SM, 3SM, 4SM, 5SM, 6SM, 7SM, 10SM, 11SM, 13SM, 14SM, 3ST, 4ST, 12ST, 13ST, 14ST, 15ST, 16ST, 18ST, 19ST, 20ST, 22ST, 23ST, 24ST; MR

Recommendation 3: evidence statement 1SM; MR

Recommendation 4: evidence statements 4SM, 6SM, 13SM, 14SM, 4ST, 11ST, 12ST, 13ST, 19ST, 20ST, 22ST; MR

Recommendation 5: evidence statements 8SM, 9SM, 14SM, 4ST; MR; IDE

Evidence statements

Evidence statement 1SM

Evidence from 1 UK observational study (++) suggests that the QOF component of the 2004 GP contract may have continued, rather than reversed, differences in the quality of care delivered between primary care practices in deprived and less deprived areas.

Evidence from another UK observational study (++) suggests that the new GP contract has resulted in an improvement in the recording of smoking status and the recording of the delivery of brief cessation advice in primary care, but not the prescribing of smoking cessation medication.

As these studies took place within UK primary care, they are directly relevant to the review.

Evidence statement 2SM

One cluster RCT in the UK (++) found that proactively identifying smokers through primary care records was feasible, and providing these smokers with brief advice and referral to

NHS Stop Smoking Services increased contact with services and quit attempts but did not increase rates of cessation.

One observational study (-), 1 descriptive study (-), 1 cluster-controlled trial (+) and 1 RCT (+) conducted in the USA demonstrate that proactively identifying smokers in a number of ways, for example, through primary care, using a screening tool, or through cold calling, is possible and that these provide effective ways of recruiting smokers to cessation interventions. One observational study in Sweden (+) demonstrates that direct mailing to smoking mothers can be successful in increasing both participation in smoking cessation programmes and quit rates. One study took place within English primary care and it is directly applicable to the review. The remainder took place in the USA and may have limited applicability. Only 1 (American) study focused upon disadvantaged individuals and therefore the applicability of this evidence to target populations for this review may be limited.

Evidence statement 3SM

Two observational studies (both [++]) demonstrate that the NHS Stop Smoking Services have been effective in reaching smokers living in disadvantaged areas of England. As both took place in England and are focused on disadvantaged individuals, they are directly applicable to the review.

Evidence statement 4SM

Two studies provide evidence to suggest that barriers such as fear of being judged, fear of failure and lack of knowledge need to be tackled in order to motivate smokers from lower socioeconomic groups to access cessation services. Interventions need to be multi-dimensional in order to tackle social and psychological barriers to quitting as well as dealing with the physiological addiction. (Two UK-based studies, 1 involving focus groups [++] and 1 involving interviews [++]). As both these studies took place with disadvantaged smokers in the UK, they are directly relevant to this review.

Evidence statement 5SM

Evidence from 4 studies suggests that social marketing has a role to play in delivering client-centred approaches to smoking cessation to disadvantaged individuals. (One UK-based observational study [-], 1 international RCT [+], 1 international population-based study [+] and 1 international controlled-before-and-after study [-]). One of these studies

took place with disadvantaged smokers in the UK and is directly relevant to the review. Three took place in the USA and may have limited applicability to this review.

Evidence statement 6SM

One UK-based (+) study suggests that including lay people or community members as advisers may form an important part of a successful smoking cessation intervention targeted at a specific group, in particular, if the service is tailored to their specific needs and allows them to explore smoking in the context of relevant issues in their lives. This study took place with smokers in the UK and is relevant to this review.

Evidence statement 7SM

Two American studies suggest the need to test existing cessation interventions to determine their suitability for the specific group, to receive feedback from that group and to make amendments to any aspects that are unsuitable. In order for the client group to benefit, the intervention must fit their level of need and understanding, and be suitably accessible. (One USA-based RCT [++], and 1 USA-based cohort study [-].)

Evidence statement 8SM

There is evidence from a number of studies that training pharmacists to deliver smoking cessation interventions is important and that pharmacies may be a valuable means of reaching disadvantaged individuals and increasing their smoking cessation rates (1 UK systematic review comprising 2 RCTs and 3 non-randomised experimental studies [++], 1 UK observational study with interviews [++], and 1 international pilot study [+]). Two studies took place within the UK and are directly applicable to the review. One took place in the USA and so may have limited applicability to this review.

Evidence statement 9SM

There is evidence from 3 reviews that training dental professionals to deliver smoking cessation interventions is important, and that this setting has the potential to reach large numbers of smokers and increase cessation rates (1 international systematic review comprising 6 RCTs [-], 1 UK review of mixed-study designs [-] and 1 international review of 7 RCTs [+]). One study took place within the UK and is directly applicable to the review. Two studies took place in the USA and so may have limited applicability to this review. There is limited reference to disadvantaged individuals in any of the reviews and therefore

the applicability of this evidence to target populations for this review may be limited.

Evidence Statement 10SM

Three studies provide some evidence of the potential benefit of drop-in or rolling, community-based sessions to reach smokers and increase cessation rates: 2 UK-based studies involving face-to-face interviews (both [-]) and 1 UK-based observational study (-). All studies took place within the UK and are directly applicable to the review.

Evidence Statement 11SM

One cohort study (+) provides evidence of the potential benefits of locating smoking cessation services in the workplace of manual groups to increase cessation rates. This study took place in the USA and so may have limited applicability to this review but does have potential implications for the UK population.

Evidence Statement 13SM

One RCT in the UK (++) with coronary heart disease (CHD) patients randomised to nurse-run clinics or controls found little evidence of a change in smoking behaviour. Two RCTs in the UK (+) and (-) exploring smoking cessation interventions at routine cervical screening appointments found some evidence that brief interventions change the motivation or intention to quit smoking. One international RCT (+) examined the recruitment of women smokers attending a child's paediatric appointment into a smoking cessation intervention and found some evidence of an impact on quitting smoking. One international RCT (+) and 1 observational study using face-to-face interviews (+) investigated the use of cellular phones for smoking cessation in HIV-positive patients and showed a potential benefit for using this method of support. One US cohort study (+) provided preliminary evidence that offering a reduction programme could reach and influence more smokers than a programme just offering cessation. Three studies were carried out in the UK and are directly applicable to the target population, but they did not examine disadvantaged individuals separately. Four studies were carried out in the US and so may have limited applicability to this review.

Evidence Statement 14SM

Two UK surveys (1 telephone [+] and 1 internet [+]) and 1 descriptive and audit survey (-) carried out in the UK provide evidence of pregnant smokers' perceptions of barriers to

using smoking cessation support. Barriers include, among others: unsatisfactory information, lack of integration of cessation into routine antenatal care, lack of enthusiasm or empathy from health professionals and lack of short-term support. One RCT in the UK (+) of motivational interviewing with pregnant smokers and 2 international RCTs, 1 of a brief versus more intensive intervention (++) and 1 of proactive telephone support (-) provide little evidence of the effectiveness of these interventions. One US descriptive study (-) described the reach of a multifaceted pregnancy campaign but reported no outcomes. The UK studies are directly applicable to the target population, although only 1 of these focused on pregnant smokers in disadvantaged areas.

Evidence Statement 1ST

There is evidence from 3 case studies suggesting interventions inviting specific populations (South Asians, homeless people or patients with psychosis) to attend risk screening at their GP practice or primary care clinic may identify a number of people at risk of coronary heart disease (outcomes reported in 2 case studies [+], [-]). However, it is difficult to draw firm conclusions on how well such interventions are attended due to poor reporting of participation rates (outcomes reported in 3 case studies: 2 [+] and 1 [-]).

Evidence Statement 2ST

There is evidence from 1 small case study (+) that screening long-term psychiatric hospital patients can identify previously undetected CHD. Screening 64 patients identified 1 new case of established CHD and 22 previously undetected test abnormalities. Participation in the intervention was high (66%) but only a small proportion consented to having blood tests.

Evidence Statement 3ST

There is evidence from 1 RCT (+) that in an area of deprivation, postal prompts to patients and their GPs following an acute coronary event, improves monitoring of the patient's risk and the likelihood of the patient having at least 1 consultation with their GP or nurse.

Evidence Statement 4ST

There is evidence from 1 case study (+) to suggest that, in an area of deprivation, a project funding a nurse and exercise worker to develop practice nurse and GP skills in identifying and monitoring patients and facilitate the provision of exercise facilities for CHD patients,

may lead to a small improvement in cholesterol testing of patients. 72.5% of control patients reported receiving cholesterol tests in the past year compared to 77.8% of the intervention group, $p=0.002$. No differences were seen in blood pressure measurement.

Evidence Statement 5ST

There is weak quality evidence from 2 case studies (both [-]) to suggest that offering cardiovascular risk assessment opportunistically to African-Caribbean general practice patients, or patients from a range of socioeconomic categories, may identify a number of people at risk of CHD. However, the interventions require further research using well-conducted studies before firm conclusions can be made.

Evidence Statement 7ST

There is evidence from 3 studies to suggest that workplace cardiovascular screening provided in schools or businesses in multi-ethnic, low-income areas (CBA [-], case study [-]), or for factory workers (case study [+]) is moderately well attended. Results suggest that a number of participants were identified for referral to a physician for follow-up (outcome reported in 2 studies: CBA [-], case study [-]). No firm conclusions can be made on patients' completion of follow-up as this was only reported in 1 poor quality study (case study [-]).

Evidence Statement 9ST

Evidence from 1 UK case study (-) evaluating the establishment of a health screening clinic in a prison indicated a moderate 35% voluntary uptake by the inmates. There were active interventions following the screening for 87 (34%) inmates and 13 (32%) staff screened. These ranged from simple anti-smoking and dietary advice to more formal medical interventions to manage raised blood pressure and cholesterol. Uptake data should be viewed cautiously, as the number of potential participants was not reported.

Evidence Statement 10ST

Two case studies suggest that offering blood pressure measurements at community sites in areas of deprivation can identify a number of people with elevated blood pressure. No firm conclusion can be made on participation rates as these were not reported in the studies. One UK case study (+) found 221 people out of 758 first-time users of self-reading sphygmomanometers placed in public sites had elevated blood pressure

measurements. No firm conclusions can be made regarding physician follow-up as the researchers were unable to contact all of these people. One US RCT (+) providing blood pressure measurements at a range of community sites identified 31.4% with elevated blood pressure and 10.7% with severely elevated blood pressure. Transferability and cost effectiveness of such interventions requires further study.

Evidence Statement 11ST

There is evidence from 2 case studies evaluating phase 1 (+) and phase 2 (-) of the Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) programme to suggest that adding cardiovascular screening to state breast and cervical cancer screening programmes reaches financially disadvantaged and minority ethnic women and identifies a number at risk of CHD. No conclusions can be made on participation rates or physician referrals as these outcomes have not been reported. Applicability and transferability of these programmes to a UK setting requires further study.

Evidence Statement 12ST

Evidence from 3 studies (2 case studies [+] and 1 uncontrolled before- and-after study [+]) suggests that culturally sensitive education sessions that include an element of cardiovascular risk assessment may be effective in the identification of at-risk individuals. Two moderate-quality studies evaluated educational interventions in black and minority community groups (+) and Turkish immigrants at a mosque (+) offering blood pressure measurements. Participation with blood pressure measurements were high, and revealed a number of patients with uncontrolled hypertension or with elevated blood pressure readings. Evidence from 1 case study (-) in which health checks were conducted before and after a church-based educational intervention with predominantly black participants should be viewed more cautiously owing to concerns of transferability and applicability.

Evidence Statement 13ST

Evidence from 1 qualitative study (++) of service users with severe mental illness (SMI), and primary care staff and community mental health teams, indicate a range of perceived obstacles to CHD screening. These include: lack of appropriate resources in existing services; anticipation of low uptake rates by patients with SMI; perceived difficulty in making lifestyle changes among people with SMI; patients dislike having blood tests; and lack of funding for CHD screening services or it not being seen as a priority by trust

management. There was some disagreement about the best way to deliver appropriate care, and the authors concluded that increased risk of CHD associated with SMI and antipsychotic medications requires flexible solutions with clear lines of responsibility for assessing, communicating and managing CHD risks.

Evidence Statement 14ST

There is a paucity of good quality research on the effectiveness of pharmacist interventions to improve compliance with lipid-lowering therapy, particularly in disadvantaged individuals. Results from the 4 studies identified (2 RCTs [-, -] 1 UCBA [uncontrolled before and after study] [-] and 1 observational study [-]) should be viewed with caution owing to poor methodological quality and doubts about applicability to disadvantaged individuals.

Evidence Statement 15ST

Evidence from 1 low-quality RCT (-) suggests that telephone reminders and postcards to reinforce messages about coronary risk reduction does not produce significant improvements in short-term compliance in patients prescribed pravastatin treatment. Results should be viewed with caution as the poor-quality study is likely to be highly biased and may not be applicable to disadvantaged individuals.

Evidence Statement 16ST

Well-conducted research examining patient education to improve compliance with lipid-lowering therapy is required before firm conclusions can be made regarding its effectiveness, particularly in disadvantaged individuals. Evidence from 1 uncontrolled before-and-after study (+) of nurse-led education in heart failure patients suggested there was no significant difference in self-reported compliance at 1 year. One RCT (-) of a pharmacy intervention including patient education for heart failure patients found a significant difference in compliance at 2 and 6 months, but not at 12 months. Applicability of the studies may be limited as the medication prescribed was not specified.

Evidence Statement 18ST

Well-conducted research is required examining the effectiveness of improving retention of patients at risk of or with CHD within services. Evidence from the 1 systematic review identified (+) highlights the dearth of literature reporting the evaluation of simple

interventions aimed at improving adherence to cardiac rehabilitation for all patients or specific groups of patients. The systematic review identified few studies of sufficient quality to enable the recommendation of specific methods to improve adherence to outpatient cardiac rehabilitation. The most promising approach was the use of self-management techniques based around individualised assessment, problem solving, goal setting and follow up. This was most likely to be effective in improving specific aspects of rehabilitation, including diet and exercise.

Evidence Statement 19ST

Evidence from 1 systematic review (+) highlighted the need for trials of interventions applicable to all patients and targeting specific under-represented groups. The review revealed some evidence to support the use of approaches aimed at motivating patients, regular support and practice assistance from trained lay volunteers and a multifaceted approach for the coordination of transfer of care from hospital to general practice. Applicability and transferability of these programmes to disadvantaged populations requires further study.

Evidence Statement 20ST

Evidence from 3 studies indicated the importance of providing additional staff resources to encourage or support the uptake of services by people living in socially deprived areas. One US moderate-quality RCT (+) in a predominantly black population from a low-income area found improved uptake of services with a tracking and outreach intervention, where community health workers supported patients in completing referral to their physician for high blood pressure. Evidence from 1 non-comparative UK case study (+) indicates that additional resources for tertiary cardiology may have reduced socioeconomic inequities in angiography without being specifically targeted at the needier, more deprived groups, but the impact on revascularisation equity is not yet clear. Evidence from 1 UK case study (-) suggested that a project funding 1 nurse and 1 exercise worker to support GP practices in a socially deprived area increased the practices' provision of cardiac rehabilitation services such as exercise programmes, psychological and social support and dietary advice. Project nurses worked directly with practice nurses and GPs to develop their skills in identifying and monitoring patients with CHD, giving lifestyle advice and ensuring optimum medication regimes. An exercise worker worked with practices and the community to identify and facilitate the provision of exercise resources suitable for CHD patients.

Evidence Statement 22ST

A number of barriers and enablers to accessing services were identified in 5 qualitative studies involving people from socially deprived areas ([++], [+ , + , +] [-]). Common themes were a lack of understanding of services and treatments and the need for flexible services; the inconvenient timing of appointments and the lack of transport were both cited as barriers; with the latter overcome by the provision of home visits. Personal factors, such as the need to minimise the severity of their illness, taking a 'cope and don't fuss' approach and fear of blame were also reported as barriers. The absence of cardiac rehabilitation services and long waiting lists was also noted and, for some patients, a reluctance to attend group care ([++], [+ , +], [-]). Healthcare providers agreed on the need to expand cardiac rehabilitation services to reach out into communities and that the expansion would need to take place in the community (+).

Evidence Statement 23ST

A number of barriers and enablers to accessing services were identified in 5 qualitative studies involving Asian populations ([++], [+ , + , +]) and African-Caribbean populations (+). Among Asian populations, a range of religious and cultural issues were identified including female inhibitions, religious practices, family commitments and influence and 'inappropriate' topics. The need for flexibility in the timing of services was highlighted and sensitivity in planning activities around religious events was viewed positively. Patients' lack of understanding of services and treatment was suggested as a barrier to access, including low levels of education and misunderstanding of western medicine, and lack of knowledge on what services were available and how to apply. Communication and language barriers were also perceived. A 'cope and don't fuss' approach among African-Caribbean hypertensive patients was a reported barrier to accessing services (+).

Evidence Statement 24ST

One qualitative study of cardiac rehabilitation coordinators in Scotland (+) found that age was widely perceived to influence access to services, both during initial assessment and in assessments for exercise components. Focus groups revealed that staff appeared to have knowledge of the benefits for older people but that scarcity of resources prevented them offering more accessible and appropriate services.

Mapping review

Brown et al. (2007) Guidance for the NHS and other sectors on interventions that reduce the rates of premature death in disadvantaged areas: proactive case finding and retention and improving access to services.

Cost-effectiveness evidence

Smoking cessation

The cost per quality-adjusted life year (QALY) of smoking cessation interventions for disadvantaged groups is low or very low. It is rarely likely to exceed £6,000.

Statins

Secondary prevention of cardiovascular disease (CVD; that is, after a CVD event) among a disadvantaged population costs an estimated £4,000 per QALY gained (£3,100 per QALY for finding the person and £900 per QALY for treating them with statins). Therefore, it is cost effective.

Whether or not it is cost effective to provide statins to prevent a first occurrence of CVD among a disadvantaged population depends on the number of people at risk in the baseline population. Data from a USA study of financially disadvantaged women aged 40 to 64 who enrolled in the National Breast and Cervical Cancer Early Detection Program was analysed. The analysis found that it is cost effective if more than 14% of the population is at risk. For example, when 40% were at risk of CVD, primary prevention was estimated to cost £8,500 per QALY gained (£4,900 per QALY for finding the person and £3,600 per QALY for treating them). This compared with about £125,600 when only 1.6% were at risk (£122,000 per QALY for finding them and £3,600 per QALY for treating them).

Fieldwork findings

Fieldwork aimed to test the relevance, usefulness and the feasibility of implementing the recommendations and the findings were considered by PHIAC in developing the final recommendations. For details, go to the fieldwork section in [appendix B](#) and 'Reducing the rate of premature deaths from CVD and other smoking-related diseases: finding and supporting those most at risk and improving access to services'.

Fieldwork participants who work with adults who are disadvantaged (in particular, those who smoke and/or are eligible for statins and/or are at high risk of CVD due to other factors) were very positive about the recommendations. Some said they will support work already being carried out in this area.

Participants felt that incentives had a role to play in helping to encourage people who are disadvantaged to attend NHS services and complete treatment. However, they felt that the use of incentives should be driven by national policy.

Overall, the lists of 'target populations' and 'who should take action' were seen as appropriate, although participants believed it would be helpful to include commissioners in the latter. Highlighting who should have overall responsibility for a recommendation would also aid implementation, they said.

Participants highlighted training, long-term funding, partnership working and cultural sensitivity as key issues that needed addressing for successful implementation of the recommendations.

Appendix D: Gaps in the evidence

PHIAC identified a number of gaps in the evidence relating to the interventions under examination, based on an assessment of the evidence. These gaps are set out below.

1. Interventions that aim to find and treat those most at risk of premature death (and improve their access to services) have rarely been assessed in terms of effectiveness and cost effectiveness.
2. Most studies focus on small scale, local interventions that reflect local context and priorities (for example, drop-in centres for smoking cessation). There is a lack of evidence on the impact of such interventions delivered on a large-scale.
3. There is a lack of evidence on interventions which primarily aim to retain people at risk of specific conditions within the health system, both generally and in relation to characteristics such as age, ethnicity, socioeconomic status and gender.
4. There is a lack of evidence on whether addressing the barriers to service use results in more people using a service.
5. There is a lack of evidence on the impact that combined macro- and micro-level interventions can have on reducing health inequalities and the relative contribution that components at each level make.
6. There is a lack of evidence on the incremental effectiveness and cost effectiveness of adapting interventions to meet the needs of disadvantaged individuals.
7. There is a lack of UK evidence on the effectiveness of using incentives to increase the number of people who both use services and complete their treatment.

(Source: evidence reviews)

The Committee made 5 recommendations for research.

Appendix E: Supporting documents

Supporting documents include the following.

- Reviews of effectiveness:
 - Review 1: 'The effectiveness of smoking cessation interventions to reduce the rates of premature death in disadvantaged areas through proactive case finding, retention and access to services'.
 - Review 2: 'The use of statins: proactive case finding, retention and improving access to services in disadvantaged areas'.
- Mapping review: 'Guidance for the NHS and other sectors on interventions that reduce the rates of premature death in disadvantaged areas: proactive case finding and retention and improving access to services'.
- Economic appraisal:
 - 'Rapid review of economic evidence of interventions to reduce the rate of premature death in the most disadvantaged populations'.
 - 'Economic analysis of interventions to improve the use of statins interventions in the general population'.
 - 'Economic analysis of interventions to improve the use of statins in disadvantaged populations'.
 - 'Economic analysis of interventions to improve the use of smoking cessation interventions in the general population'.
 - 'Economic analysis of interventions to improve the use of smoking cessation interventions in disadvantaged populations'.
 - 'Supplementary economic analysis on interventions to reduce health inequalities'.
- Fieldwork report: 'Reducing the rate of premature deaths from cardiovascular disease (CVD) and other smoking-related diseases: finding and supporting those most at risk and improving access to services'.

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the [NICE topic page on smoking and tobacco](#).

For full details of the evidence and the guideline committee's discussions, see the [evidence reviews](#). You can also find information about [how the guideline was developed](#) and [details of the committee](#).

NICE has produced [tools and resources to help you put this guideline into practice](#). For general help and advice on putting our guidelines into practice, see [resources to help you put NICE guidance into practice](#).

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