

Behaviour change: individual approaches

Issued: January 2014

NICE public health guidance 49
guidance.nice.org.uk/ph49

Contents

What is this guidance about?	6
1 Recommendations	7
Recommendation 1 Develop a local behaviour change policy and strategy	7
Recommendation 2 Ensure organisation policies, strategies, resources and training all support behaviour change.....	8
Recommendation 3 Commission interventions from services willing to share intervention details and data	9
Recommendation 4 Commission high quality, effective behaviour change interventions	10
Recommendation 5 Plan behaviour change interventions and programmes taking local needs into account.....	11
Recommendation 6 Develop acceptable, practical and sustainable behaviour change interventions and programmes	12
Recommendation 7 Use proven behaviour change techniques when designing interventions	13
Recommendation 8 Ensure interventions meet individual needs	14
Recommendation 9 Deliver very brief, brief, extended brief and high intensity behaviour change interventions and programmes	16
Recommendation 10 Ensure behaviour change is maintained for at least a year	17
Recommendation 11 Commission training for all staff involved in helping to change people's behaviour	17
Recommendation 12 Provide training for behaviour change practitioners.....	19
Recommendation 13 Provide training for health and social care practitioners	20
Recommendation 14 Assess behaviour change practitioners and provide feedback.....	21
Recommendation 15 Monitor behaviour change interventions	22
Recommendation 16 Evaluate behaviour change interventions	22
Recommendation 17 National support for behaviour change interventions and programmes	23
2 Who should take action?	26
Introduction.....	26
Who should do what at a glance	26
Who should take action in detail	27

3 Context	31
Introduction.....	31
Classifying behaviour-change techniques.....	31
Theoretical frameworks	32
4 Considerations	33
Background	33
Evidence.....	34
Developing policy and strategy	36
Commissioning quality-assured behaviour change programmes	36
Designing behaviour change interventions	37
Delivery	40
Behaviour change techniques	40
Training	42
Evaluation.....	43
National support.....	43
Choice architecture	44
5 Recommendations for research	46
6 Related NICE guidance	48
7 Glossary	49
Behaviour change competency frameworks	49
Behaviour change interventions.....	49
Behaviour change practitioner	49
Behaviour change programme.....	49
Behaviour change techniques.....	49
Brief intervention	50
Capability, opportunity and motivation.....	50
Choice architecture interventions.....	50

Community-level interventions	51
Co-produce.....	51
Extended brief intervention	51
Feedback and monitoring.....	51
Goals and planning	51
Independent evaluation	52
Individual-level behaviour change interventions	52
Intervention fidelity	52
Logic model	53
Motivation	53
Outcomes	53
Person-centred approach.....	53
Population-level interventions	53
Proportionate universalism.....	54
Social support.....	54
Taxonomy	54
Very brief intervention	54
8 References	56
9 Summary of the methods used to develop this guidance.....	59
Introduction.....	59
Guidance development	59
Key questions.....	59
Reviewing the evidence	60
Cost effectiveness	63
How the PDG formulated the recommendations.....	63
10 The evidence	66
Introduction.....	66

How the evidence and expert papers link to the recommendations.....	66
Economic analysis.....	67
Fieldwork findings	68
11 Gaps in the evidence	70
12 Membership of the Programme Development Group (PDG) and the NICE project team	72
Programme Development Group	72
NICE project team	74
About this guidance	76
What does this guidance cover?	76
How was this guidance developed?	77
What evidence is the guidance based on?	77
Status of this guidance	79
Implementation.....	80
Updating the recommendations	80
Your responsibility	80
Copyright.....	81

What is this guidance about?

This guidance makes recommendations on [individual-level behaviour change interventions](#) aimed at changing the behaviours that can damage people's health. It includes a range of approaches for people aged 16 and over, from single interventions delivered as the opportunity arises to planned, high intensity interventions that may take place over a number of sessions.

The guidance aims to help tackle a range of behaviours including alcohol misuse, poor eating patterns, lack of physical activity, unsafe sexual behaviour and smoking. These behaviours are linked to health problems and chronic diseases (such as cardiovascular disease, type 2 diabetes and cancer). This means interventions that help people change have considerable potential for improving health and wellbeing. This includes helping them to:

- improve their diet and become more physically active
- lose weight if they are overweight or obese
- stop smoking
- reduce their alcohol intake
- practice safe sex to prevent unwanted pregnancies and a range of infectious diseases such as HIV and chlamydia.

The recommendations should be implemented together, using a [person-centred approach](#) and taking into account duties set out in the [Equality Act 2010](#). They are for all those involved in helping people to change their behaviour. This includes those who provide training on behaviour change. (For further details, see [Who should take action?](#)). In addition, they may be of interest to members of the public.

See [About this guidance](#) for details of how the guidance was developed and its current status.

1 Recommendations

Recommendation 1 Develop a local behaviour change policy and strategy

National and local policy makers and commissioners of behaviour change services and their partners (see [Who should take action?](#)) should:

- Ensure policies and strategies aim to improve everyone's health and wellbeing.
- Use health equity audit to ensure health inequalities will not increase, and if possible will decrease as a result of the local behaviour change strategy and related programmes and interventions. (See NICE's local government briefing on health inequalities and population health for information about [health equity audit](#).)
- Develop a commissioning strategy, linked to relevant policies, for an evidence-based [behaviour change programme](#) of population, community, organisational and individual-level [behaviour change interventions](#). For example, see NICE guidance on [alcohol](#) and [obesity](#). Also note that [Behaviour change: the principles for effective interventions](#) (NICE public health guidance 6, 2007) recommends delivering individual interventions in tandem with complementary activities at the population, community and organisational levels.
- Work with the local community to develop the strategy (see [Community engagement](#), NICE public health guidance 9).
- Ensure the strategy, and any related policies, are sustainable and meet local needs, identified through joint strategic needs assessments (JSNAs) and other local data.
- Identify the behaviours the strategy will address, and the [outcomes](#) it aims to achieve. Bear in mind that some interventions and programmes can address more than 1 behaviour (for example, sexual behaviour and alcohol consumption).
- Ensure the content, scale and intensity of each intervention is proportionate to the level of social, economic or environmental disadvantage someone faces and the support they need ([proportionate universalism](#)).

-
- Identify a leader within each local authority area, for example, the director of public health or an elected member of cabinet, to address specific behaviours (such as smoking and physical activity).

Recommendation 2 Ensure organisation policies, strategies, resources and training all support behaviour change

- Directors in national and local organisations whose employees deliver [behaviour change interventions](#) should ensure policies, strategies and resources are in place to provide behaviour change support for staff, as well as service users. This support could take the form of behaviour change services for staff. Or it could involve creating environments that support health-promoting behaviour (for examples, see NICE guidance on [smoking](#) and [physical activity](#)).
- National and local organisations whose employees deliver behaviour change interventions should review job descriptions and person specifications to check that they include behaviour change knowledge and skills (or competencies), if they are a specific part of someone's job (see recommendation [9](#)).
- Managers of health, wellbeing and social care services should determine which staff in contact with the public are best placed to deliver different levels of a behaviour change intervention (see recommendation [9](#)). They should ensure those staff have the knowledge and skills (or competencies) needed to assess behaviours and individual needs (see recommendation [8](#)) and to deliver the intervention.
- Employers should ensure staff are aware of the importance of being supportive, motivating people and showing them empathy (see recommendation [12](#)).
- Directors and managers should ensure staff receive behaviour change training and supervision related to their roles and responsibilities (see recommendation [9](#)). They should also be offered ongoing professional development on behaviour change theories, methods and skills (see recommendation [12](#)).
- Mentors and supervisors with relevant training and experience (see recommendations [11](#) and [12](#)) should support staff who are delivering behaviour change interventions. This includes helping them to set their own goals, providing constructive feedback on their practice and encouraging them to be aware of their duty of care. It also involves making

them aware of the likely perceptions and expectations of those taking part in behaviour change interventions and programmes.

Recommendation 3 Commission interventions from services willing to share intervention details and data

Commissioners of behaviour change services and their partners (see [Who should take action?](#)) should:

- Only commission [behaviour change interventions](#) and [programmes](#) that meet the recommendations in this guidance and in [Behaviour change: the principles for effective interventions](#) (NICE public health guidance 6) .
- Ensure behaviour change interventions aim to both initiate and maintain change. Interventions should include techniques to address relapse and recognise that it is common.
- Commission interventions that are proven to be effective at changing and maintaining behaviour change. (See recommendation 4; also see NICE guidance on [alcohol](#), [diet](#), [physical activity](#), [sexual behaviour](#) and [smoking](#).)
- Specify in service specifications that providers:
 - make a detailed description of the intervention publicly available (see recommendation 6)
 - collate accurate, standardised and comparable routine data on behaviours that affect health and wellbeing. (For example, behaviours covered by the [Public Health Outcomes Framework](#).)
- Commission interventions from providers who agree to make their evaluation and monitoring data available to commissioners and local and national organisations. (The aim is to aid the design, delivery and monitoring of service processes and [outcomes](#).) For example, data could be collected on:
 - process assessment and quality assurance
 - health outcomes.

Recommendation 4 Commission high quality, effective behaviour change interventions

National and local policy makers, commissioners of behaviour change services and their partners (see [Who should take action?](#)) should:

- Find out whether [behaviour change interventions](#) and [programmes](#) that are already in place are effective, cost effective and apply evidence-based principles. (See [Behaviour change: the principles for effective interventions](#), NICE public health guidance 6).
- Ensure that, when commissioning behaviour change interventions and programmes:
 - Evaluation plans tailored for the intervention and target behaviours are built in from the outset.
 - Resources (staff, time and funds) are allocated for [independent evaluation](#) of the short-, medium- and long-term [outcomes](#).
 - A quality assurance process is in place to assess whether the intervention was delivered as planned ([intervention fidelity](#)), achieves the target behaviour change and health and wellbeing outcomes, and reduces health inequalities. (The frequency of quality assurance checks should be specified.)
 - There are quality assurance checks if an intervention has already been shown to be effective.
 - All information on intervention processes and outcomes is recorded in a form that can be made available if needed (for example, on a secure database).
- Commission and evaluate a pilot if it is not clear whether an intervention shown to be effective for a specific behaviour, population or setting can be applied to other behaviours, settings or populations (see recommendation [16](#)).
- Commission an intervention for which there is no evidence of effectiveness **only** if it is accompanied by an adequately powered and controlled evaluation that measures relevant outcomes (see recommendation [16](#)).
- Stop running interventions or programmes if there is good evidence to suggest they are not effective or are harmful.

Recommendation 5 Plan behaviour change interventions and programmes taking local needs into account

Commissioners and providers of behaviour change services, and intervention designers (see [Who should take action?](#)) should:

- Work together and with other key stakeholders (for example, people who use services, communities and researchers) to select priority areas for interventions, based on local need. They should also identify suitable interventions that are acceptable to the target audiences.
- Take into account the local social and cultural contexts to ensure equitable access for everyone who needs help and make best use of existing resources and skills.
- Base [behaviour change interventions](#) and [programmes](#) on evidence of effectiveness (see recommendations [6](#) and [7](#)).
- Take into account:
 - the objectives of the intervention or programme
 - evaluation plans (see recommendations [4](#) and [16](#))
 - the target population (including characteristics such as socioeconomic status)
 - whether there is a need to offer tailored interventions for specific subgroups (for example, see [Preventing type 2 diabetes: risk identification and interventions for individuals at high risk](#), NICE public health guidance 38)
 - intervention characteristics: content, assessment of participants, mode of delivery, intensity and duration of the intervention, who will deliver it, where and when
 - the training needs of those delivering the intervention or programme
 - the quality of the behavioural support provided by those delivering the intervention or programme
 - availability of, and access to, services once the intervention has finished
 - follow up and support to maintain the new behaviour

-
- plans to monitor and measure [intervention fidelity](#).

Recommendation 6 Develop acceptable, practical and sustainable behaviour change interventions and programmes

Commissioners of behaviour change services and intervention designers (see [Who should take action?](#)) should:

- Work together and with other key stakeholders (for example, people who use services, communities and researchers) to develop ([co-produce](#)) behaviour change interventions and programmes that are acceptable, practical and sustainable. This should also reduce duplication between services.
- Develop interventions that:
 - are evidence-based
 - have clear objectives that have been developed and agreed with stakeholders
 - identify the core skills, knowledge and experience (competencies) needed to deliver the intervention (including for the specific [behaviour change techniques](#) used)
 - provide details of the training needed (including learning [outcomes](#)) for practitioners
 - include a monitoring and evaluation plan developed according to agreed objectives.
- Before implementing a behaviour-change intervention, describe in detail the principles it is based on. Put these details in a manual. This should include:
 - clearly stated objectives on what the intervention will deliver
 - the evidence base used (such as from NICE guidance on a specific topic)
 - an explanation of how the intervention works (mechanism of action), for example, by targeting [capability, opportunity and motivation](#).
- Ensure manuals also include a detailed description of the intervention including:

-
- resources, setting or context, activities, processes and outcomes (including a pictorial description of the relationship between these variables, such as a conceptual map or [logic model](#))
 - intervention characteristics (see recommendation [5](#))
 - a clear definition of the behaviour change techniques used so that each component can be replicated (for example, by using a [taxonomy](#))
 - details of how to tailor the intervention to meet individual needs (see recommendation [8](#))
 - plans to address long-term maintenance of behaviour change and relapse
 - implementation details: who will deliver what, to whom, when and how.
- Make the manual publicly available, for example, on a website (provide copyright details and 'training before use' requirements). If there are changes to an intervention during delivery, or after evaluation, ensure the manual is updated accordingly.

Recommendation 7 Use proven behaviour change techniques when designing interventions

Providers of [behaviour change interventions](#) and [programmes](#) and intervention designers should:

- Design behaviour change interventions to include techniques that have been shown to be effective at changing behaviour. These techniques are described in principle 4 of [Behaviour change: the principles for effective interventions](#) (NICE public health guidance 6) and include:
 - [Goals and planning](#). Work with the client to:
 - ◇ agree goals for behaviour and the resulting [outcomes](#)
 - ◇ develop action plans and prioritise actions
 - ◇ develop coping plans to prevent and manage relapses
 - ◇ consider achievement of outcomes and further goals and plans.

-
- Feedback and monitoring (for example, regular weight assessment for weight management interventions):
 - ◇ encourage and support self-monitoring of behaviour and its outcomes and
 - ◇ provide feedback on behaviour and its outcomes.
 - Social support. If appropriate advise on, and arrange for, friends, relatives, colleagues or 'buddies' to provide practical help, emotional support, praise or reward.
- Ensure the techniques used match the service user's needs (see recommendation [8](#)).
 - Consider using other evidence-based behaviour change techniques that may also be effective. See NICE guidance on alcohol, diet, physical activity, sexual behaviour and smoking for details of specific techniques.
 - Clearly define and provide a rationale for all behaviour change techniques that have been included.
 - Ensure novel techniques – or those for which the evidence base is limited – are evaluated (see recommendation [16](#)).
 - Consider delivering an intervention remotely (or providing remote follow-up) if there is evidence that this is an effective way of changing behaviour. For example, use the telephone, text messaging, apps or the internet.

Recommendation 8 Ensure interventions meet individual needs

Providers of behaviour change programmes and interventions and trained behaviour change practitioners should:

- Ensure service users are given clear information on the behaviour change interventions and services available and how to use them. If necessary, they should help people to access the services.
- Ensure services are acceptable to, and meet, service users' needs. This includes any needs in relation to a disability or another 'protected characteristic' in relation to equity.

-
- Recognise the times when people may be more open to change, such as when recovering from a behaviour-related condition (for example, following diagnosis of cardiovascular disease) or when becoming a parent. Also recognise when offering a behaviour change intervention may not be appropriate due to personal circumstances.

Trained behaviour change practitioners (see recommendations [12](#) and [13](#)) should:

- Before starting an intervention:
 - Assess participants' health in relation to the behaviour and the type of actions needed. For example, they should ensure the level and type of physical activity recommended is appropriate, bearing in mind the person's physical health. (As an example, see [Weight management before, during and after pregnancy](#), NICE public health guidance 27.)
 - Ensure the intensity of the intervention matches the person's need for support to change their behaviour.
 - Discuss what the likely impact will be if the participant makes changes to their behaviour (in terms of their health and wellbeing and the health and wellbeing of those they are in contact with).
- Plan at what point before, during and after a behaviour change intervention a review will be undertaken to assess progress towards goals and then tailor the intervention and follow-up support accordingly.
- Tailor interventions to meet participants' needs by assessing and then addressing:
 - People's behaviour: if available, use a validated assessment tool appropriate for the specific population or setting. For example, alcohol screening tools used in prisons are different from those used in accident and emergency departments.
 - Participants' physical and psychological capability to make change.
 - The context in which they live and work (that is, their physical, economic and social environment).
 - How motivated they are to change: if many behaviours need to be changed, assess which one – or ones – the person is most motivated to tackle (see [Capability, opportunity and motivation](#)).

-
- Any specific needs with regards to sexual orientation, gender identity, gender, culture, faith or any type of disability.

Recommendation 9 Deliver very brief, brief, extended brief and high intensity behaviour change interventions and programmes

Commissioners and providers of behaviour change services should:

- Encourage health, wellbeing and social care staff (see [Who should take action?](#)) in direct contact with the general public to use a [very brief intervention](#) to motivate people to change behaviours that may damage their health. The interventions should also be used to inform people about services or interventions that can help them improve their general health and wellbeing.
- Encourage staff who regularly come into contact with people whose health and wellbeing could be at risk to provide them with a [brief intervention](#). (The risk could be due to current behaviours, sociodemographic characteristics or family history.)
- Encourage behaviour change service providers and other health and social care staff dealing with the general public to provide an [extended brief intervention](#) to people they regularly see for 30 minutes or more who:
 - are involved in risky behaviours (for example higher risk drinking^[1])
 - have a number of health problems
 - have been assessed as being at increased or higher risk of harm
 - have been successfully making changes to their behaviour but need more support to maintain that change
 - have found it difficult to change or have not benefited from a very brief or brief intervention.
- Encourage behaviour change service providers and practitioners to provide high intensity interventions (typically these last more than 30 minutes and are delivered over a number of sessions) for people they regularly work with who:

- have been assessed as being at high risk of causing harm to their health and wellbeing (for example, adults with a BMI more than 40 – see [Obesity](#), NICE clinical guideline 43) **and/or**
- have a serious medical condition that needs specialist advice and monitoring (for example, people with type 2 diabetes or cardiovascular disease) **and/or**
- have not benefited from lower-intensity interventions (for example, an extended brief intervention).

Recommendation 10 Ensure behaviour change is maintained for at least a year

Providers and practitioners involved with [behaviour change programmes](#) and [interventions](#) should help people maintain their behaviour change in the long term (more than 1 year) by ensuring they:

- receive [feedback and monitoring](#) at regular intervals for a minimum of 1 year after they complete the intervention (the aim is to make sure they can get help if they show any sign of relapse)
- have well-rehearsed action plans (such as 'if-then' plans) that they can easily put into practice if they relapse
- have thought about how they can make changes to their own immediate physical environment to prevent a relapse
- have the [social support](#) they need to maintain changes
- are helped to develop routines that support the new behaviour (note that small, manageable changes to daily routine are most likely to be maintained).

Recommendation 11 Commission training for all staff involved in helping to change people's behaviour

Commissioners, local education and training boards, and managers and supervisors (see [Who should take action?](#)) should:

-
- Commission training for relevant staff to meet the service specification for any behaviour change intervention or programme. This should:
 - cover all the various activities, from a [very brief intervention](#) offered when the opportunity arises to [extended brief interventions](#)
 - include assessment of people's behaviours and needs
 - address equity issues
 - provide the latest available evidence of effectiveness and describe how an intervention works (mechanism of action).
 - Ensure training programmes on behaviour change provide:
 - evidence-based content (see recommendation [7](#))
 - evidence-based training methods
 - trainers with proven skills, knowledge and experience (competencies) in the particular area (see recommendation [12](#))
 - monitoring using relevant [behaviour change competency frameworks](#) or assessment.

Commissioners and local education and training boards should:

- Ensure training programmes consider:
 - where programmes and interventions will be delivered
 - training participants' characteristics (such as background)
 - whether behaviour change is part of participants' main role, integral to their role but not the main focus, or an additional task (see recommendation [9](#)).
- Ensure training includes ongoing professional development on how to encourage behaviour change. This could include regular refresher training to maintain the quality of delivery of behaviour change interventions.
- Ensure training is evaluated in terms of [outcomes](#) (see recommendation [14](#)) and process (for example, via participant feedback).

Recommendation 12 Provide training for behaviour change practitioners

Providers of behaviour change training should:

- Ensure training objectives include the range of knowledge and skills (competences) needed to deliver specific interventions.
- Ensure practitioners are trained to adopt a person-centred approach when assessing people's needs and planning and developing an intervention for them.
- Ensure behaviour change practitioners:
 - understand the factors that may affect behaviour change, including the psychological, social, cultural and economic factors (see recommendation [8](#))
 - are aware of behaviours that adversely affect people's health and wellbeing, and the benefits of prevention and management
 - can address health inequalities by tailoring interventions to people's specific needs, including their cultural, social and economic needs and other 'protected characteristics'
 - are able to assess people's needs and can help select appropriate evidence-based interventions
 - know how an intervention works (mechanism of action)
 - recognise the specific behaviour change techniques used in the intervention they will be delivering
 - understand how to access, and how to direct and refer people to, specialist support services (for example, they should know how people can get help to change their behaviour after hospitalisation, a routine GP appointment or an intervention)
 - understand local policy and demographics.
- Ensure behaviour change practitioners have the skills to:
 - assess people's behaviour using validated assessment tools and measures

-
- communicate effectively, for example, by giving people health, wellbeing and other information, by using reflective listening and knowing how to show empathy
 - develop rapport and relationships with service users
 - develop a person's motivation to change by encouraging and enabling them to manage their own behaviour (see recommendation [7](#))
 - deliver the relevant behaviour change techniques
 - help prevent and manage relapses (see recommendation [10](#)).
- Ensure behaviour change practitioners who provide interventions to groups can:
 - elicit group discussions
 - provide group tasks that promote interaction or bonding
 - encourage mutual support within the group.
 - Give practitioners the opportunity to learn how to tailor interventions to meet the needs and preferences of different groups and to test this ability (both during and after training).
 - Ensure trainers have adequate time and resources to assess participants' motivation, skills, confidence and knowledge when they are delivering interventions to particular groups.

Recommendation 13 Provide training for health and social care practitioners

All those who train or accredit health and social care professionals (see [Who should take action?](#)) should:

- Ensure behaviour change knowledge, skills and delivery techniques comprise a formal element of initial training, work placements and ongoing continuous professional development for all those who deliver health and social care services. (See recommendation [12](#) for details of training content.)
- Ensure all health and social care professionals can, as a minimum, deliver a very brief intervention. (Training modules can be found online, for example, see the National Centre for Smoking Cessation and Training's [very brief advice training module](#).)

Recommendation 14 Assess behaviour change practitioners and provide feedback

Providers of behaviour change training should:

- Assess the ability of trainees to deliver [behaviour change techniques](#) and tailor interventions to meet people's needs.

Employers (this includes workplace managers, supervisors and mentors of trainees) should:

- Ensure behaviour change practitioners who have received training are regularly assessed on their ability to deliver [behaviour change interventions](#). This ranges from a [very brief intervention](#) to a high intensity intervention (the latter typically lasts longer than 30 minutes and is delivered over multiple sessions). Assessment should reflect the intervention content. It should also include practitioners' ability to provide participants with behaviour change techniques and to tailor interventions to participants' needs. In addition, it should include service user feedback.

Providers of behaviour change training and employers should:

- Ideally, record behaviour change sessions as part of the assessment. Intervention components, such as behaviour change techniques, should be identified in transcripts. Audio or video recording equipment could be used. If this is not possible then, as a minimum, a reliable observation tool should be used to record the intervention. An example of the latter would be a checklist of key intervention components.
- Obtain the consent of the practitioner and service user for all assessments. They should also ensure the organisation's confidentiality requirements are met.
- Provide behaviour change practitioners with feedback on their performance, both orally and in writing, starting with feedback on good performance. If necessary, negotiate and set jointly agreed goals and an action plan. Provide them with the option of refresher training.

Recommendation 15 Monitor behaviour change interventions

- Commissioners, providers and researchers (see [Who should take action?](#)) should ensure all interventions are monitored in terms of:
 - process measures (for example, uptake and reach of the intervention)
 - impact on health inequalities
 - behavioural [outcomes](#) in the short, medium and long-term
 - how closely they follow the intervention manual ([intervention fidelity](#)) (see recommendation 6).
- If possible, providers should adapt existing electronic systems to collect data on the behaviour of participants. For an example of what could be collected on smoking, see the National Centre for Smoking Cessation and Training [stop smoking service client record form](#).

Recommendation 16 Evaluate behaviour change interventions

- Before introducing a new intervention, commissioners and providers of [behaviour change interventions](#) and researchers should be clear about the objectives and how these will be measured and evaluated. (Researchers could include practitioners and others, for more details see [Who should take action?](#)) See Medical Research Council guidance on the development, evaluation and implementation of [complex interventions to improve health](#).
- Commissioners and providers should ensure evaluation is carried out by a team of researchers or an organisation that has not been involved in delivering the intervention.
- Researchers should work with commissioners and providers to plan evaluation before the intervention takes place. This may entail getting specialist input (for example, from the [NIHR research design service](#)).
- Researchers should use objective, validated measures of outcome and process if they are available. They should ensure the design makes it possible to provide new evidence of effectiveness and, ideally, cost effectiveness – and details on why it is effective (mechanism

of action). See principles [7 and 8](#) in 'Behaviour change: the principles for effective interventions' (NICE public health guidance 6).

- Commissioners, providers and researchers should ensure evaluation includes:
 - a description of the evaluation design
 - assessment of [intervention fidelity](#)
 - consistent use of valid, reliable measures (using the same tools to assess behaviours) before, during and following an intervention (that is, ensuring baseline and outcome measures match)
 - rigorous qualitative assessments to evaluate how well interventions will work in practice and how acceptable they are to services users and practitioners
 - assessment of processes and outcomes using both objective and self-reported measures
 - establishing and ensuring routine data collection
 - adequate sample sizes
 - assessment of long-term outcomes (more than 1 year).
- Providers of existing interventions should work with researchers to ensure they are rigorously evaluated.

Recommendation 17 National support for behaviour change interventions and programmes

- National organisations that support the monitoring, collection and surveillance of routine data should work together to:
 - determine what routine data health, social care and voluntary organisations should record on health-related behaviours (such as smoking and alcohol)
 - collect these data to monitor the [outcomes](#) of activities to improve the public's health (include: [behaviour change interventions](#); national, regional and local policies and initiatives; and communication campaigns)

-
- track the prevalence of these behaviours over time, region and social group and report on findings
 - support local implementation of behaviour change interventions based on evidence of effectiveness.
 - National organisations responsible for behaviour change training and curricula (see [Who should take action?](#)) should work together to:
 - provide a central repository for behaviour change training curricula
 - assess whether [behaviour change competency frameworks](#) and training curricula promote an evidence-based approach to behaviour change
 - provide guidance on the suitability of these frameworks and curricula in terms of who they are aimed at and whether their content is evidence based.
 - National organisations responsible for research funding should ensure research related to behaviour change includes, as a minimum, details of:
 - intervention content and how it was delivered
 - who delivered the intervention
 - format (methods by which the intervention was administered)
 - where and when the intervention was delivered
 - recipients
 - intervention intensity and duration
 - [intervention fidelity](#).

^[1] Latest advice on alcohol limits should be accessed (see guidance from the Chief Medical Officer). At publication of this guidance, government advice states that men should not regularly drink more than 3–4 units a day and women should not regularly drink more than 2–3 units a day (see the [Change 4 Life](#) website). Regularly drinking 22–50 units per week (men) or 15–35 units per week (women) is described as 'increasing-risk drinking'. Regularly drinking more than

50 alcohol units per week (men) or more than 35 units per week (women) is described as 'higher-risk drinking'.

2 Who should take action?

Introduction

The guidance is for: commissioners, managers, training and education organisations, service providers and practitioners with public health as part of their remit working within local authorities, the NHS, and the wider public, private, voluntary and community sectors.

It is particularly aimed at those who commission, design, investigate and deliver interventions to help people change their behaviour – or who encourage or support behaviour change as part of their role. This includes those who provide training on behaviour change.

The guidance may also be of interest to policy makers, researchers, individuals, groups or organisations wishing to work in partnership with health and social care and other service providers. In addition, it may be of interest to people who want to change their behaviour (for example, to stop smoking), their families and other members of the public.

Who should do what at a glance

Who should take action?	Recommendation
National policy makers	1, 4
Local policy makers	1, 3, 4
Commissioners	1, 5, 6, 9, 11, 15, 16
Health and wellbeing boards	1
Individuals, groups or organisations wishing to work with health and social care service providers	1, 3, 4
Directors and employers	2, 11
Providers of behaviour change interventions and programmes	5, 7, 8, 9, 10, 15, 16
Intervention designers	5, 6, 7

Trained behaviour change practitioners; trained staff working in health, wellbeing and social care services who have contact with the general public	8, 9, 10
Local education and training boards	11
Managers, supervisors and mentors of staff delivering interventions	2, 11, 14
Providers of training	12, 14, 17
Royal colleges, faculties, schools, voluntary sector and sector skills councils that train or accredit health and social care professionals	13, 17
Researchers	5, 6, 7, 15, 16
Academics	5, 6, 7, 15, 16
Research funders	16, 17
National organisations with a remit for improving or assessing health, providing services and training	13, 17
National organisations with a remit for supporting data monitoring, collection and surveillance	17

Who should take action in detail

Recommendation 1

Local strategy developers (such as health and wellbeing boards); national and local policy makers and commissioners of behaviour change services and their partners in health, local authority and voluntary sector organisations; individuals, groups or organisations wishing to work in partnership with health and social care service providers.

Recommendation 2

Directors, managers and employers in national and local organisations whose employees deliver behaviour change interventions.

Recommendation 3

Local policy makers and commissioners of behaviour change services and their partners in health, local authority and voluntary sector organisations; individuals, groups or organisations wishing to work in partnership with health and social care service providers.

Recommendation 4

National and local policy makers and commissioners of behaviour change services and their partners in health, local authority and voluntary sector organisations; individuals, groups or organisations wishing to work in partnership with health and social care service providers.

Recommendation 5

Commissioners of behaviour change services in health, local authorities and voluntary sector organisations; providers of behaviour change interventions and programmes; intervention designers (including researchers, academics and practitioners).

Recommendation 6

Commissioners of behaviour change services in health, local authorities and voluntary sector organisations; intervention designers (including researchers, academics and practitioners).

Recommendation 7

Providers of behaviour change interventions and programmes; intervention designers (including researchers, academics and practitioners).

Recommendation 8

Providers of behaviour change programmes and interventions, trained behaviour change practitioners.

Recommendation 9

Commissioners and providers of behaviour change services in health, local authority and voluntary sector organisations; trained behaviour change practitioners; staff working in health, wellbeing and social care services who have contact with the general public.

Recommendation 10

Providers and practitioners involved with behaviour change programmes and interventions.

Recommendation 11

Commissioners of behaviour change services in health, local authority and voluntary sector organisations; local education and training boards; managers and supervisors of staff delivering behaviour change interventions.

Recommendation 12

Providers of behaviour change training.

Recommendation 13

Royal colleges, faculties, schools, voluntary sector and sector skills councils that train or accredit health and social care professionals.

Recommendation 14

Providers of behaviour change training; workplace managers, supervisors and mentors of trainees.

Recommendation 15

Commissioners and providers of behaviour change interventions in health, local authority and voluntary sector organisations; researchers (including academics, practitioners and individuals) developing, delivering and evaluating behaviour change interventions.

Recommendation 16

Commissioners and providers of behaviour change interventions in health, local authority and voluntary sector organisations; commissioners and funders of research; researchers (including academics, practitioners and others capable of developing, delivering and evaluating behaviour change interventions).

Recommendation 17

National organisations that support the monitoring, collection and surveillance of routine data; national organisations responsible for behaviour change training and curricula (including, Health Education England, Public Health England, Local Government Association, NHS England, the Department of Health and Office of National statistics); national organisations responsible for research funding.

3 Context

Introduction

Practitioners use a range of interventions when working with someone to improve their health. Each intervention will usually involve one or more [behaviour change techniques](#). However, there is a lack of practical advice on which techniques should be used to tackle specific behaviours (for example, in relation to diet, smoking and alcohol) and with people from specific populations or with particular risk factors.

For an individual to improve their health in the medium and long term, behaviour change must be sustained. Maintaining changes to behaviour can involve both helping people to deal with relapses, and ensuring that new behaviours become habitual.

Sustained behaviour change is most likely to occur when a combination of individual, community and [population-level interventions](#) are used. In addition, there is a reasonable evidence base relating to [motivation](#) to change (Lai et al. 2010; Ruger et al. 2008).

In 2011, the House of Lords Science and Technology Select Committee reviewed a range of factors that impact on behaviour change. In its final report, the Committee recommended that NICE should update its guidance on the topic; in particular it wanted, 'more explicit advice on how behaviour change techniques could be applied to reduce obesity, alcohol abuse and smoking' (House of Lords 2011).

Classifying behaviour-change techniques

Considerable research has been undertaken to specify behaviour change interventions in terms of their component parts. This has led to a definition of behaviour change techniques relevant for a range of health behaviours (Michie et al. 2013) and for specific behaviours:

- to improve their diet or encourage physical activity (Abraham and Michie 2008; Conn et al. 2002; Inoue et al. 2003; Michie et al. 2011a)
- to prevent weight gain (Hardeman et al. 2000)
- to stop smoking (Michie et al. 2011b)

-
- to reduce alcohol intake (Michie et al. 2012)
 - to prevent HIV (Albarracin et al. 2005).

Work is currently underway to explore the extent to which techniques may be applicable across different behaviours. The classification system has been shown to be reliable. Its validity is now being assessed (Michie et al. 2013).

Theoretical frameworks

The importance of having a theoretical basis for the design and evaluation of interventions is well established (Medical Research Council 2008; Craig et al. 2008). For example, it can help ensure better outcomes (Albarracin et al. 2005) as well as providing a means of understanding why an intervention is effective or not.

Work has been done to establish theoretical frameworks for behaviour change (Abraham and Michie 2008; Michie et al. 2011a; West 2009) and evidence continues to emerge about these theories (Tuah et al. 2011; Williams and French 2011).

4 Considerations

Background

This section describes the factors and issues the Programme Development Group (PDG) considered when developing the recommendations. Please note: this section does **not** contain recommendations. (See [Recommendations](#).)

- 4.1 There is a wealth of information and recommendations in existing NICE guidance on interventions related to the behaviours covered in this guidance: alcohol use, eating patterns, physical activity, sexual behaviour and smoking. The PDG did not aim to update or critique these recommendations. Rather, it considered new evidence to add value to the recommendations already made. (See [Related NICE guidance](#).)
- 4.2 The PDG agreed that the principles in [Behaviour change: the principles for effective interventions](#) (NICE public health guidance 6) relevant to the remit of this guidance were still applicable. These were: principles 1 (planning), 3 (education and training), 4 (individual-level behaviour change interventions and programmes), 7 (effectiveness) and 8 (cost-effectiveness).
- 4.3 This guidance focuses mainly on individual-level behaviour change interventions. However, the PDG agreed that these need to be viewed in the context of a range of other interventions. This includes those delivered at population and community level and those related to the environments in which choices about behaviours take place (see [Behaviour change: the principles for effective interventions](#), NICE public health guidance 6).
- 4.4 The PDG noted that tackling behaviour change among people younger than 16, in particular in relation to issues such as alcohol use and sexual risk-taking, is important. However, this was not part of the remit for this guidance.
- 4.5 The PDG used various terms to describe the target group of an intervention. It did not feel that any term was preferable and used 'participants' and 'service users' interchangeably.

-
- 4.6 The PDG discussed the role of commercial companies in contributing to behaviour change and the potential contribution they could make to behaviour change interventions. Suppliers and manufacturers could, for example, provide (free of charge) useful data to aid understanding about behaviours such as alcohol use or eating patterns.
- 4.7 The PDG agreed that some of the recommendations were ambitious and may prove difficult to resource at local level. However, it was keen to set a 'gold standard' for service delivery as an aspirational target.

Evidence

- 4.8 The PDG did not think it was useful to look at specific behaviour change techniques in isolation. The Group agreed that single technique interventions may be effective for some people (or with some behaviours). However, it also noted that behaviour change often comes about because of a range of techniques working together (as well as other factors, such as context). The question is, which behaviour change techniques work most effectively together? The Group noted that theories of behaviour change may help determine which techniques should work synergistically.
- 4.9 The PDG noted that there was evidence of effectiveness for the behaviour change techniques recommended in relation to specific behaviours. However, the Group also noted, that the effectiveness of techniques across behaviours and populations was not always clear or necessarily supported by the evidence.
- 4.10 The behaviour change techniques taxonomy used in the evidence reviews (Michie et al. 2013) helped in discussions and in informing the evidence synthesis. However, the PDG had some concerns about the findings reported in review 2. This was due to the quality of reporting in intervention studies and the associated difficulty of coding behaviour change techniques on the basis of limited information. First, variations in reporting behaviour change techniques in the published data posed challenges when trying to provide consistent coding across interventions. Second, many tests were undertaken in the analysis in which behaviour change technique data were pooled across

interventions for different behaviours and populations. This, combined with coding issues, could lead to the wrong conclusion concerning whether or not a technique is associated with behaviour change. Third, the potential moderating effect of other variables (such as mode of delivery and intervention intensity) was not addressed in the review analysis.

- 4.11 The authors of review 2 coded the behaviour change techniques used for 'usual care' and the 'control arm' in each study. This was to ensure all the behaviour change techniques used (in both the intervention and comparator) in any study were included in the meta-regression analysis. The accuracy of this coding was, however, dependent on the level of detail provided in published studies about the control arm. The PDG noted that, as with the reporting of interventions in published research, detail about control arms was often poor or missing. Generally there was not enough specific detail.
- 4.12 The PDG did not think recommendations could be based solely on the findings of the meta-regression analysis in evidence review 2. It noted that this review provided evidence of the effect sizes of behaviour change interventions and details of the behaviour change techniques used.
- 4.13 The PDG agreed that triangulation – looking for consistent effects across the different evidence considered by the group – would be appropriate. Consequently, if specific behaviour change techniques were evident in effective interventions in the evidence reviews and expert testimony, these findings were used as the basis for recommendations.
- 4.14 The PDG only made recommendations about behaviour change techniques that were identified using the triangulation process. Hence, a particular technique may not be recommended because of a lack of supporting evidence from more than one source, rather than due to evidence that it is not effective.
- 4.15 The evidence reviews that informed this guidance were structured around the specific taxonomy developed by Michie et al. (2013). While two-thirds of the possible behaviour change techniques defined in the taxonomy were identified in the included evidence, relatively few were identified often. This does not necessarily mean that techniques not mentioned were not used in the

interventions. It may be that they are not reported or described in enough detail to be identified in published articles (see [4.8](#) above).

- 4.16 The lack of evidence on sexual behaviour in the commissioned reviews made it difficult for the PDG to make recommendations on these interventions.
- 4.17 The PDG noted that interventions aimed at changing people's alcohol use, eating patterns, physical activity, sexual behaviour and smoking are generally cost effective. The same is true for a number of other health behaviours that have been subjected to research. The Group also noted that there was little or no consistent association between the presence of any one behaviour change technique (or cluster of techniques) and an intervention being cost effective.

Developing policy and strategy

- 4.18 The PDG ensured the first recommendation highlights the need for an integrated programme of population, community, organisational and individual-level behaviour change interventions. It noted that interventions that target many levels simultaneously tend to be the most effective.
- 4.19 The PDG noted that it was important for all policy and strategy to be in line with the principles of [proportionate universalism](#). This involves providing universal services and additional tailored support to meet the particular needs and choices of those who may find it difficult to use the services.
- 4.20 The PDG discussed whether practitioners and services should aim to change one behaviour at a time or multiple behaviours at once. It also discussed the best strategy to deal with multiple behaviours. Given the lack of evidence on the best approach, the Group made a recommendation for further research.

Commissioning quality-assured behaviour change programmes

- 4.21 The PDG was concerned that if private companies were commissioned to provide a behaviour change service they may not share data because of

commercial interests. It noted the importance of data-sharing for the purposes of monitoring processes and [outcomes](#).

- 4.22 The PDG noted the importance of ensuring all behaviour change interventions and programmes are conducted in an ethical manner. For example, this might involve ensuring participants in an intervention are fully informed of its content and how their data may be used. It might also involve ensuring national data protection and confidentiality policies are met.
- 4.23 The PDG considered that sustained changes in behaviour (that is, the maintenance of behaviour change) are vital to improve public health outcomes. It noted the need to plan for this at the start. The Group also noted that measurable changes in health at a population level may happen over the medium to long term, whereas changes in behaviour of individuals could be detected over shorter time periods.
- 4.24 The PDG noted the importance of long-term evaluation of behaviour change interventions and programmes. It also noted that, in reality, effectiveness is often not assessed beyond 6–12 weeks following an intervention.
- 4.25 The PDG noted that details of various study designs, their internal validity, and how to assess the quality of a study can be found in [appendix D](#) of 'Methods for the development of NICE public health guidance' (third edition).

Designing behaviour change interventions

- 4.26 The PDG noted that the majority of published journal articles on behaviour change interventions do not provide enough detail to determine the techniques used in intervention and control groups. Where detail is provided, it may reflect the topic covered. For example, scientific studies on alcohol are based on a more standardised way of reporting than, say, scientific studies within the sexual health field. The Group discussed the need for manuals providing practical detail of the intervention techniques used, and for these to be made publicly available.

-
- 4.27 The PDG noted that a lack of detail in published journal articles on studies claiming to use motivational interviewing had affected the Group's ability to determine the behaviour techniques used. The PDG recognised that motivational interviewing is based on a clear set of principles and components. But as the articles did not specify which principles and components were used, the Group could not assume that motivational interviewing was used. This made it impossible to recommend this approach. It also added further support to the Group's recommendation that manuals should provide details of all the intervention components used.
- 4.28 The PDG acknowledged stakeholder concerns about intellectual property, copyright issues and the potentially inappropriate use of the information kept in manuals on behaviour change interventions. (For example, someone may use the information to set up their own commercial behaviour change intervention without having had the appropriate training needed to deliver it.) However, it was generally agreed that it was important to make manuals for all interventions publicly available, for example, as a condition of funding for projects in receipt of public monies.
- 4.29 As most journals now have web supplements, the PDG noted that it is possible to provide detailed reports of intervention designs, whatever the word limit of the main paper. The PDG discussed the fact that some journals only publish evaluations of interventions that come with publicly available manuals detailing the full protocols used. It welcomed this practice.
- 4.30 The recommendations contained in this guidance reflect the PDG's conclusions about intervention planning, based on the evidence considered. However, the PDG recognised that a number of other planning tools and resources – for example, 'intervention mapping' (Bartholomew et al. 2011) – could be systematically employed to enhance intervention design and effectiveness (see 4.31 below).
- 4.31 Intervention mapping aids collaborative planning by people from different professional backgrounds during intervention development. The approach proposes 6 intervention design stages:

- Stage 1: A needs assessment determines what (if anything) needs to be changed for whom.
- Stage 2: Primary and secondary intervention objectives are defined. This involves specifying the precise behaviour changes participants will be expected to make.
- Stage 3: Designers identify the underlying evidence-based techniques that maintain current (unwanted) behaviour patterns and may generate the specified changes.
- Stage 4: Practical ways of delivering these techniques are developed and integrated into the intervention.
- Stage 5: How the intervention will be used or delivered in everyday contexts is considered.
- Stage 6: Evaluation to assess whether the intervention changed specified behaviours in context.

These stages are iterative in that, for example, anticipation of how the intervention will be used or delivered may lead to a change in design and a return to stage 4. Similarly, when the exact behaviour changes are defined in stage 2, these may need to be evaluated. The result is an intervention 'map' of matrices and plans that guide the design, implementation and evaluation of an intervention.

4.32 The PDG noted the importance of not just the content of an intervention, but who is delivering it (and their core competencies), to whom, how and where.

4.33 The PDG discussed the importance of making sure all key components of a given intervention are adopted so that they have high [intervention fidelity](#) and are sustainable.

4.34 The PDG agreed that a behaviour change taxonomy for designing interventions was a useful tool. However, the Group was clear that the inclusion of a behaviour change technique in a taxonomy did not necessarily mean there was a strong evidence base for that technique.

Delivery

- 4.35 Evidence showed that behaviour change interventions by GPs and other medical staff can be effective. However, the PDG felt that a focus solely on such interventions may lead to a widening in health inequalities, because people from the most vulnerable groups often do not use primary care services. The Group did not want to exclude such interventions, rather it raised the need to find alternative ways of reaching vulnerable groups. Members agreed that understanding how people come into contact with, and access, services was key to the design of behaviour change interventions.
- 4.36 The PDG noted that details of validated tools and measures for assessing behaviour can be found in academic publications. The Group also noted that specific assessment tools have been recommended by NICE. For example, tools for assessing alcohol use are recommended in [Alcohol-use disorders: preventing harmful drinking](#) (NICE public health guidance 24).
- 4.37 The PDG agreed that although information is usually a necessary precursor to behaviour change, information alone is not always sufficient to influence behaviour.
- 4.38 The PDG noted that social, economic and cultural contexts can have an impact on behaviour. Although a sense of connection and belonging at school, within the family or community promotes resilience, unhealthy behaviour can also be embedded in social processes and patterns. The Group also noted that diverse health outcomes can be established early in life.

Behaviour change techniques

- 4.39 Recommendations were made to include [goals and planning](#) and [feedback and monitoring](#) techniques in behaviour change interventions. This was based on a cross-examination of behaviour change techniques identified in expert paper 14, the evidence reviews and [Behaviour change: the principles for effective interventions](#) (NICE public health guidance 6). (Triangulation techniques were used.) The process indicated that the techniques would be effective as part of interventions on alcohol, diet, physical activity and smoking.

These behaviour change techniques are described in detail in Michie et al. (2013).

- 4.40 Time constraints meant it was not possible to review additional evidence on sexual health interventions and behaviour change techniques. However, the PDG noted that in existing NICE guidance, social support was frequently used in effective interventions for all behaviours (alcohol, diet, physical activity, sexual behaviour and smoking).
- 4.41 The PDG noted that social support provided by friends, family and associates could help to create an environment in which people felt able to make changes. However, members also noted that, if not managed effectively, social support provided by non-professionals (such as family members) could sometimes lead to an unhealthy co-dependency, bullying, manipulation or other negative behaviour.
- 4.42 The PDG noted that [principle 4](#) (on individuals) in 'Behaviour change: the principles for effective interventions' (NICE public health guidance 6) recommended specific behaviour change techniques. The Group agreed that, for consistency of approach, these would be 'coded' using the taxonomy applied in the commissioned evidence reviews for this guidance (Michie et al. 2013). This taxonomy identified the following groups of behaviour change techniques: [goals and planning](#), [feedback and monitoring](#), [social support](#), natural consequences, comparison of behaviour, repetition and substitution and antecedents.
- 4.43 The PDG noted that interventions are unlikely to be effective if providers are not properly trained or the setting is not appropriate. The Group also noted that some behaviour change techniques, such as self-monitoring, might be difficult for some people.
- 4.44 The PDG was aware of a growing interest in the use of new technology, including phone and tablet apps, to deliver behaviour change interventions. The Group noted that the evidence is mixed and there have not been many formal evaluations of its effectiveness. But it also noted that evidence to support the use of technology is encouraging (see recommendation [7](#)).

Training

- 4.45 The PDG noted the importance of training. For example, the Group discussed the fact that if one person successfully trained 100 practitioners they, in turn, could help 10,000 people, and the knock-on effects would be huge.
- 4.46 The PDG discussed the importance of communication skills when providing behaviour change interventions. In particular, it noted the importance of knowing how to initiate a conversation, develop rapport and communicate information effectively. Communication skills include reflective listening, the use of open ended questions and affirmation skills.
- 4.47 The PDG did not discuss the accreditation of training. This may be an area where future guidance is needed.
- 4.48 The PDG was concerned that training programmes still describe the stages of change model (also known as the transtheoretical model) as a theoretical basis for behaviour change interventions. The PDG wanted to highlight that, although it may help practitioners and service users to understand the experience of behaviour change, it is not a theory that is able to accurately explain and predict such change. It was noted that interventions based on this model alone have not, according to the evidence reviewed here, demonstrated effectiveness.
- 4.49 The PDG was clear that being trained to deliver one behaviour change intervention does not necessarily mean that a practitioner is then competent to deliver other behaviour change interventions. The Group was aware of the danger that practitioners and service users may assume their competency extends further than it actually does.
- 4.50 The PDG noted that behaviour change training is a behaviour change intervention in its own right.

Evaluation

- 4.51 The PDG noted that this guidance is not intended to make recommendations on how to undertake research in this area. For more information on research principles, see NICE's local government briefing on [behaviour change](#).
- 4.52 The PDG noted that well-conducted evaluation studies and randomised controlled trials – with minimal bias – give the best quality evidence. Anecdotal evidence and smaller or poorly conducted studies are much less reliable and the Group agreed that it was best not to use these as a basis for investment decisions. The Group also noted that NICE, NHS Evidence and the Cochrane Collaboration provide guidance to help identify behaviour change interventions or programmes to invest in for a particular topic, population or setting.
- 4.53 The PDG noted that qualitative, as well as quantitative, measures are important when trying to understand why something does or does not work – and under what circumstances. They can also help to identify any improvements or changes that need to be made.
- 4.54 The PDG noted that the setting where an intervention is delivered and the person delivering it may be the two main factors that make an intervention effective (or ineffective).
- 4.55 The PDG discussed the meaning of '[independent evaluation](#)'. The Group was clear that this was not synonymous with external evaluation. Rather, it could be carried out inside an organisation as long as it was not conducted by those actually involved in designing or delivering the intervention.

National support

- 4.56 The PDG noted that local organisations may need support to help them decide on the most appropriate behaviour change interventions and training to commission or provide in their area. Members discussed how a unified national approach might achieve this, with organisations and research funders working together to ensure appropriate data collection, evaluation and dissemination of evidence. The PDG also noted that some organisations, for example Public

Health England and NICE (through [NICE evidence services](#)) are already working towards this goal.

Choice architecture

- 4.57 On the basis of current evidence, the PDG felt that it would be premature to make any recommendations on the use of [choice architecture interventions](#) (see [Expert paper 8](#)). As a result, only research recommendations were made on this.
- 4.58 A scoping review of the evidence base for choice architecture interventions targeting healthy behaviour indicated that the majority of evidence involved diet (see [Expert paper 8](#)). However, in the absence of a full systematic review, the PDG questioned whether such interventions did lead to a healthy diet.
- 4.59 The PDG noted that, in the context of choice architecture, 'doing nothing' is not a neutral approach, because this simply maintains the status quo. And the status quo may, for example, be an 'obesogenic environment' constructed by commercial interests.
- 4.60 The PDG recognised that choice architecture interventions may appeal to people working in a local authority setting. The reasons are twofold. First, this type of behaviour change intervention may be perceived to be relatively low cost. Second, it has the potential to reach a relatively large number of people. However, there is only limited evidence on how effective these interventions are at changing health-related behaviour. The PDG agreed that anyone wishing to commission or provide such an intervention as part of a behaviour change service should be aware of this lack of evidence. The Group agreed that choice architecture interventions, if used, needed to be subject to independent evaluation.
- 4.61 Although the PDG was not able to make recommendations on choice architecture interventions, members noted that a further evidence synthesis on this approach^[2] is due to be published soon. The PDG advised that if this synthesis is published prior to the routine update of this guidance, the update should be brought forward.

^[2] Evidence synthesis on choice architecture is currently being undertaken by the Behaviour and Health Research Unit, University of Cambridge. Evidence from other work by the unit has been considered by the PDG as expert testimony during the development of this guidance.

5 Recommendations for research

The Programme Development Group (PDG) recommends that the following research questions should be addressed. It notes that 'effectiveness' in this context relates not only to the size of the effect, but also to cost effectiveness and duration of effect. It also takes into account any harmful or negative side effects.

All the research should aim to identify differences in effectiveness among groups, based on characteristics such as socioeconomic status, age, gender and ethnicity.

- 5.1 Which choice architecture interventions help to reduce increased-risk and higher-risk drinking of alcohol, improve sexual health behaviours, help stop or reduce smoking, or increase the physical activity levels of the general UK population? How is this related to sociodemographic variables?
- 5.2 What evidence of effectiveness is there on the use of choice architecture interventions in commercial settings to influence health-related behaviours? How can findings from commercial settings support non-commercial choice architecture approaches to support behaviour change to improve health?
- 5.3 Which combinations of behaviour change techniques and modes of delivery are effective and cost effective in initiating particular behaviour changes, and in maintaining those changes? How does this vary among people from different socio-demographic groups or with different levels of motivation, access to information or skills? Include research that builds the evidence base on the effectiveness of each behaviour change technique. For example, experimental and meta-analytic work could clarify which behaviour change techniques work when, and for whom.
- 5.4 Which behaviour change interventions and programmes are effective and cost effective at changing multiple behaviours and maintaining behaviour change? How does this vary among people from different sociodemographic groups?
- 5.5 What characteristics of behaviour change training influence the effectiveness of behaviour change practitioners?

- 5.6 How effective and cost effective are behaviour change interventions delivered remotely (that is, by telephone, text message, phone and tablet apps or the internet)? How does this vary among behaviours and among people from different sociodemographic groups?
- 5.7 How do behaviour change techniques lead to change? What are the best methods of testing the relationship between the theories that describe change processes and the effectiveness of interventions in practice?

More detail identified during development of this guidance is provided in [Gaps in the evidence](#).

6 Related NICE guidance

This guidance complements, but does not replace, [Behaviour change: the principles for effective interventions](#), NICE public health guidance 6 (2007).

Much of NICE guidance, both published and in development, is concerned with changing people's knowledge, attitudes and behaviours to prevent and tackle disease and illness. See the [NICE website](#) for a list of the relevant publications on alcohol use, eating patterns, physical activity, sexual behaviour and smoking.

7 Glossary

Behaviour change competency frameworks

Behaviour change competency frameworks describe the knowledge and skills required to deliver interventions to people to help them change their behaviour (Dixon and Johnston 2010).

Behaviour change interventions

Behaviour change interventions involve sets of techniques, used together, which aim to change the health behaviours of individuals, communities or whole populations.

Behaviour change practitioner

Anyone who delivers behaviour change techniques and interventions can be a behaviour change practitioner, regardless of their professional background, as long as they have received specific training in these techniques. However, not all practitioners can deliver all interventions or techniques.

Behaviour change programme

Behaviour change programmes are a coordinated set of more than one intervention that share common aims and objectives.

Behaviour change techniques

The term 'behaviour change technique' is used in this guidance to mean the component of an intervention that has been designed to change behaviour, such as social support. The technique must meet specified criteria so that it can be identified, delivered and reliably replicated. It should also be observable and irreducible (behaviour change techniques are the smallest 'active' component of an intervention.) They can be used alone or in combination with other behaviour change techniques.

Brief intervention

A brief intervention involves oral discussion, negotiation or encouragement, with or without written or other support or follow-up. It may also involve a referral for further interventions, directing people to other options, or more intensive support. Brief interventions can be delivered by anyone who is trained in the necessary skills and knowledge. These interventions are often carried out when the opportunity arises, typically taking no more than a few minutes for basic advice.

Capability, opportunity and motivation

For any change in behaviour to occur, a person must:

- Be physically and psychologically capable of performing the necessary actions.
- Have the physical and social opportunity. People may face barriers to change because of their income, ethnicity, social position or other factors. For example, it is more difficult to have a healthy diet in an area with many fast food outlets, no shops selling fresh food and with poor public transport links if you do not have a car.
- Be more motivated to adopt the new, rather than the old behaviour, whenever necessary.

This is known as the COM-B model (Michie et al. 2011d).

Choice architecture interventions

In this guidance, 'choice architecture intervention' is used to mean changing the context in which someone will make a decision in order to influence how they act. For example, placing healthier snacks closer to a shop checkout and putting sugary and high-fat options out of reach may influence people to make a healthier choice because it is more accessible. Behaviour change approaches based on choice architecture are also referred to as 'nudge' or 'nudging' interventions (Thaler and Sunstein 2008).

Community-level interventions

A community-level intervention targets a particular community in a specific geographic area, or with a shared identity or interest. For example, it could involve addressing local infrastructure and planning issues that discourage people in a specific geographical area from cycling. This could include ensuring local facilities and services are easily accessible by bicycle and changing the layout of roads to improve safety and reduce traffic speeds.

Co-produce

Co-production means ensuring public services are developed and delivered by professionals, people using the services, their families and their neighbours working together in an equal and reciprocal way to agree what is needed, where and how.

Extended brief intervention

An extended brief intervention is similar in content to a brief intervention but usually lasts more than 30 minutes and consists of an individually-focused discussion. It can involve a single session or multiple brief sessions.

Feedback and monitoring

In 'feedback and monitoring' a specific behaviour (for example, alcoholic drinks consumed) or outcome (for example, changes in weight following changes to diet) is recorded. The person trying to change their behaviour is given feedback on the recorded behaviour or outcomes (for example, measurement of weight) or comment on progress towards a set goal. Monitoring can be done by a third party, or by the person themselves ('self-monitoring').

Goals and planning

'Goals and planning' refers to a group of behaviour change techniques that help people to set goals for their behaviour or for an outcome of the behaviour (such as weight loss) and plan how these goals will be met. Action plans include a description of what will happen in what situation or at what time: how often it will happen, for how long, and where it will take place. Behaviour goals

are reviewed regularly in the light of experience and further plans are made according to past progress towards goals.

Independent evaluation

Independent evaluations are conducted by someone who is not involved in commissioning or delivering an intervention and does not have a vested interest in the outcome. Evaluations can look at process or outcome and answer such questions as:

- Was an intervention delivered according to the plan or service specification?
- What changes were there in the behaviour of, or health outcomes for, service users?
- Why did the planned intervention lead (or not lead) to changes in behaviour or health outcomes?

Individual-level behaviour change interventions

In this guidance, 'individual-level behaviour change intervention' is used to mean action that aims to help someone with a specific health condition, or a behaviour that may affect their health. It can be delivered on a one-to-one, group or remote basis, but the focus is on creating measurable change in a specific person. A nutritional intervention offered to anyone with a specific biomarker (for example, a specific body mass index) or health status (for example, obesity) is an example. However, a nutritional intervention offered to everyone in the country, or a particular city, is not. Although delivered to an individual, the intervention may affect a whole group or population.

The interventions referred to throughout the guidance include one or more behaviour change technique.

Intervention fidelity

Intervention fidelity is the degree to which the planned components of an intervention have been delivered as intended.

Logic model

Logic models are narrative or visual depictions of real-life processes leading to a desired result. Using a logic model as a planning tool allows precise communication about the purposes of a project or intervention, its components and the sequence of activities needed to achieve a given goal. It also helps to set out the evaluation priorities right from the beginning of the process.

Motivation

Motivation is the process that starts, guides and maintains goal-related behaviour, for example making changes to diet and exercise to lose weight. It involves biological, emotional, social and cognitive forces.

Outcomes

Outcomes are the impact that a test, treatment, policy, programme or other intervention has on a person, group or population. Outcomes from interventions to improve the public's health could include changes in their knowledge and behaviour leading to a change in their health and wellbeing.

Person-centred approach

Using a 'person-centred' approach, services work in collaboration with service users as equal partners to decide on the design and delivery of services. This approach takes into account people's needs and builds relationships with family members. It also takes into account their social, cultural and economic context, motivation and skills, including any potential barriers they face to achieving and maintaining behaviour change. Person-centred care involves compassion, dignity and respect.

Population-level interventions

Population-level interventions are national policies or campaigns that address the underlying social, economic and environmental conditions of a population to improve everyone's health. This type of intervention could include, for example, distributing leaflets to the whole population

highlighting the importance of being physically active, adopting a healthy diet and being a healthy weight.

Proportionate universalism

In a proportionate universalist approach, interventions are delivered to the whole population, with the intensity adjusted according to the needs of specific groups (for example, some groups may need more frequent help and advice). This type of approach can help to reduce the social gradient and benefit everybody.

Social support

Social support involves friends, relatives, or colleagues providing support for people who want to change their behaviour (for example, to quit smoking). It can take the form of:

- Practical help (for example, helping someone to free up the time they need to get to a service or use a facility, or helping them to get there).
- Emotional support (for example, a partner or friend could go walking or cycling with the person on a regular basis if they want to get physically fit).
- Praise or reward for trying to change, whatever the result. (For example, a partner or friend could make sure they congratulate the person for attempting to lose weight or stop smoking.)

Taxonomy

A taxonomy is a system of naming, describing and classifying techniques, items or objects. For example, a website taxonomy includes all the elements of a website and divides them into mutually exclusive groups and subgroups. An example of a behaviour-change technique taxonomy that can be applied across behaviours is described in Michie et al. 2013.

Very brief intervention

A very brief intervention can take from 30 seconds to a couple of minutes. It is mainly about giving people information, or directing them where to go for further help. It may also include other

activities such as raising awareness of risks, or providing encouragement and support for change. It follows an 'ask, advise, assist' structure. For example, very brief advice on smoking would involve recording the person's smoking status and advising them that stop smoking services offer effective help to quit. Then, depending on the person's response, they may be directed to these services for additional support.

8 References

Abraham C, Michie S (2008) A taxonomy of behaviour change techniques used in interventions. *Health Psychology* 27: 379–87

Albarracin D, Gillette JC, Earl AN et al. (2005) A test of major assumptions about behaviour change: A comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic. *Psychological Bulletin* 131: 856–97

Bartholomew LK, Parcel GS, Kok G et al. (2011) *Planning health promotion programs: an intervention mapping approach* 3rd edition. San Francisco: Jossey-Bass

Conn VS, Valentine JC, Cooper HM (2002) Interventions to increase physical activity among aging adults: A meta-analysis. *Annals of Behavioral Medicine* 24: 190–200

Craig P, Dieppe P, Macintyre S et al. (2008) Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ* 337: a1655

Dixon D, Johnston M (2010) *Health behaviours change competency framework: competencies to deliver interventions to change lifestyle behaviours that affect health*. Edinburgh: The Scottish Government

Gellman MD, Turner JR (2013) *Encyclopaedia of Behavioral Medicine*. New York: Springer.

Hardeman W, Griffin S, Johnston M et al. (2000) Interventions to prevent weight gain: a systematic review of psychological models and behaviour change methods. *International Journal of Obesity* 24: 131–43

House of Lords (2011) [Inquiry: behaviour change](#) [online]

Inoue S, Odagiri Y, Wakui S et al. (2003) Randomized controlled trial to evaluate the effect of a physical activity intervention program based on behavioural medicine. *Journal of Tokyo Medical University* 61: 154–65

Lai DTC, Cahill K, Qin Y et al. (2010) Motivational interviewing for smoking cessation. *Cochrane Database of Systematic Reviews* issue 1

Marteau T, Ogilvie D, Roland M et al. (2011) Judging nudging: can nudging improve population health? *British Medical Journal* 342: d228

Medical Research Council (2008) [Complex interventions guidance](#) [online]

Michie S, Richardson M, Johnston M et al (2013) The behaviour change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behaviour change interventions. *Annals of behavioural medicine* March 20 [Epub ahead of print]

Michie S, Whittington C, Hamoudi Z et al. (2012) Identification of behaviour change techniques to reduce excessive alcohol consumption. *Addiction* 107: 1431–40

Michie S, Ashford S, Falko F et al. (2011a) Refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours: The CALO-RE taxonomy. *Psychology and Health* 28: 1–20

Michie S, Hyder N, Walia A et al. (2011b) Development of a taxonomy of behaviour change techniques used in individual behavioural support for smoking cessation. *Addictive Behaviours* 36: 315–19

Michie S, Abraham C, Eccles MP et al. (2011c) Strengthening evaluation and implementation by specifying components of behaviour change interventions: a study protocol. *Implementation Science* 6: 10

Michie S, van Stralen MM, West R (2011d) The behaviour change wheel: a new method for characterising and designing behaviour change interventions, *Implementation Science* 6: 42

Ruger JP, Weinstein MC, Hammond SK et al. (2008) Cost-effectiveness of motivational interviewing for smoking cessation and relapse prevention among low-income pregnant women: a randomized controlled trial. *Value Health* 11: 191–8

Thaler R, Sunstein C (2008) *Nudge: improving decisions about health, wealth, and happiness*. Connecticut: Yale University Press

Tuah NAA, Amiel C, Qureshi S et al. (2011) Transtheoretical model for dietary and physical exercise modification in weight loss management for overweight and obese adults. *Cochrane Database of Systematic Reviews* issue 10

West R (2009) The multiple facets of cigarette addiction and what they mean for encouraging and helping smokers to stop. *Journal of Chronic Obstructive Pulmonary Disease* 6: 277–83

Williams SL, French DP (2011) What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behaviour – and are they the same? *Health Education Research* 26: 308–22

9 Summary of the methods used to develop this guidance

Introduction

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

The minutes of the Programme Development Group (PDG) meetings provide further detail about the Group's interpretation of the evidence and development of the recommendations.

Guidance development

The stages involved in developing public health programme guidance are outlined in the box below.

1. Draft scope released for consultation
2. Stakeholder meeting about the draft scope
3. Stakeholder comments used to revise the scope
4. Final scope and responses to comments published on website
5. Evidence reviews and economic reports undertaken and submitted to PDG
6. PDG produces draft recommendations
7. Draft guidance (and evidence) released for consultation
8. PDG amends recommendations
9. Final guidance published on website
10. Responses to comments published on website

Key questions

The key questions were established as part of the scope. They formed the starting point for the reviews of evidence and were used by the PDG to help develop the recommendations. The overarching questions were:

1. Which interventions are an effective and cost effective way of changing someone's behaviour and then helping them to sustain that change?
2. Which specific behaviour change techniques (and combinations of behaviour change techniques) are effective and cost effective at helping individuals change and then sustain the new behaviour in the long term (for at least 6 months following the intervention)?
3. Which behaviour change techniques are only effective for specific behaviours, such as helping people to quit alcohol or smoking? Which techniques can be used to tackle a range of behaviours?
4. What characteristics and competencies are needed to deliver behaviour change interventions and techniques effectively?
5. How do the effects of individual interventions/behaviour change techniques vary across different population groups?
6. Which theories explain when, why and how behaviour change is maintained?

These questions were made more specific for each review (see reviews for further details).

Reviewing the evidence

Effectiveness reviews

Two reviews of effectiveness were conducted.

For more details on the reviews see [Supporting evidence](#).

Identifying the evidence

The NICE website was searched in July 2012 for public health guidance relating to individual-level behaviour change interventions published since 2006 that address: alcohol, diet, physical activity, sexual behaviour, or smoking. See [Review 1: Individual-level behaviour change: review of current NICE guidance and recommendations](#) for details.

A number of databases were searched between July and September 2012 for papers relating to individual-level behaviour change interventions published since 2003 that address: alcohol, diet,

physical activity, sexual behaviour, or smoking. See [Review 2: Individual-level behaviour change: review of evidence of effectiveness of interventions and behaviour change techniques in individual level interventions](#) for details of the databases searched.

Selection criteria

Studies were included in the effectiveness reviews if they:

- covered [individual-level interventions](#) aimed at behaviour change in relation to at least 1 of the following: alcohol, diet, physical activity, sexual behaviour and smoking
- were published by NICE (review 1)
- were randomised controlled trials or systematic reviews published from 2003 onwards in English (review 2).

Studies were excluded from both reviews if they focused on:

- people younger than 16 years
- [community-level interventions](#) or [population-level interventions](#)
- national policy, fiscal and legislative measures.

See each review for details of the inclusion and exclusion criteria.

Other reviews

One review of qualitative data was undertaken.

Identifying the evidence

A number of databases were searched in September 2012 for papers published since 2003 on the characteristics and competencies needed to deliver individual-level behaviour change interventions and techniques. Specifically, the search focused on papers addressing alcohol, diet, physical activity, sexual behaviour or smoking. See [Review 3: Individual-level behaviour change: A qualitative review of studies describing the skills base needed to deliver behaviour change interventions or techniques](#) for details of the databases searched.

Selection criteria

Studies were included in review 3 if they described the skills or training needed to deliver behaviour change interventions in relation to at least 1 of the following: alcohol, diet, physical activity, sexual behaviour or smoking.

Studies were excluded if they focused on:

- community- or population-level interventions
- clinical or pharmacological methods with no public health or health promotion element
- psychiatric interventions delivered as part of the therapeutic process for people with a mental health problem.

Quality appraisal

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

Study quality

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

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

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

Summarising the evidence and making evidence statements

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

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 were prepared by the external contractors (see [Supporting evidence](#)). The statements reflect their judgement of the strength (quality, quantity and consistency) of evidence and its applicability to the populations and settings in the scope.

Cost effectiveness

There were 2 reviews of economic evaluations.

Review of economic evaluations

Review 1: Behaviour change update stage 1: behaviour change technique (BCT) analysis of existing, cost-effective interventions involved an analysis of interventions already assessed by NICE as cost effective. The aim was to identify and classify the behaviour change techniques used in individual-level interventions and those based on choice architecture.

Review 2: Behaviour change update: Stage 3: BCT analysis of behaviour change interventions reported in studies of cost effectiveness involved a search of economic databases using the search strategies developed for the effectiveness reviews for the behaviour change update. The overall aim was to identify any additional economic evidence not already covered by NICE's existing analyses. The specific aims were to:

- identify and classify the behaviour change techniques used
- compare the behaviour change techniques used in interventions judged either cost-effective and cost-ineffective by NICE
- compare the behaviour change techniques of cost-effective interventions identified in review 1 with cost-effective interventions in review 2.

How the PDG formulated the recommendations

At its meetings in September, October and December 2012 and March and April 2013, the Programme Development Group (PDG) considered the evidence, expert testimony and cost effectiveness to determine:

-
- whether there was sufficient evidence (in terms of strength and applicability) to form a judgement
 - where relevant, whether (on balance) the evidence demonstrates that the intervention or programme/activity can be effective or is inconclusive
 - where relevant, the typical size of effect (where there is one)
 - whether the evidence is applicable to the target groups and context covered by the guidance.

The PDG developed recommendations through informal consensus, based on the following criteria:

- Strength (type, quality, quantity and consistency) of the evidence.
- The applicability of the evidence to the populations/settings referred to in the scope.
- Effect size and potential impact on the target population's health.
- Impact on inequalities in health between different groups of the population.
- Equality and diversity legislation.
- Ethical issues and social value judgements.
- Cost effectiveness (for the NHS and other public sector organisations).
- Balance of harms and benefits.
- Ease of implementation and any anticipated changes in practice.

The PDG noted that although effectiveness can vary according to the context, there was little evidence addressing the impact of interventions on different groups of people (for example according to ethnicity, socioeconomic status, or disability).

Where evidence was lacking, the PDG also considered whether a recommendation should be implemented only as part of a research programme. One 'in-research only' recommendation was made (see recommendation [4](#)).

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

10 The evidence

Introduction

The evidence statements from 3 reviews are provided by external contractors (see [Supporting evidence](#)).

This section lists how the evidence statements and the expert papers link to the relevant recommendations. It also sets out a brief summary of findings from the economic analysis and the fieldwork.

How the evidence and expert papers link to the recommendations

The evidence statements are short summaries of evidence, in a review, report or paper (provided by an expert in the topic area). Each statement has a short code indicating which document the evidence has come from. The letters in the code refer to the type of document the statement is from, and the numbers refer to the document number, and the number of the evidence statement in the document.

Evidence statement number 1.1 indicates that the linked statement is numbered **1** in **review 1**. **Evidence statement number 2.1.3** indicates that the linked statement is numbered **1.3** in **review 2**. **Evidence statement number 3.3.4** indicates that the linked statement is numbered **3.4** in **review 3**. **EP1** indicates that expert paper **1** is linked to a recommendation.

The reviews, expert papers and economic analysis are available [online](#). 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).

Recommendation 1: EP3, EP4, EP6–9, EP13

Recommendation 2: evidence statements 3.1.1, 3.1.2, 3.1.3 EP 10, EP11

Recommendation 3: EP4–6, EP9, EP13

Recommendation 4: EP1, EP3–5, EP14

Recommendation 5: EP1–3, EP5, EP14

Recommendation 6: EP1–3

Recommendation 7: evidence statements 1.2, 1.4, 1.6, 1.7, 1.9, 1.10–1.19, 1.20, 1.21, 2.1.8, 2.3.7, 2.3.11, 2.3.13, 2.3.17, 2.4.4, 2.4.5, 2.4.8, 2.5.5, 2.5.6, 2.5.7, 2.5.9, 2.5.11, 2.5.15, 3.3.3, 3.3.4, 3.3.6, 3.3.7, EP14

Recommendation 8: EP1–3, EP5, EP6, EP9

Recommendation 9: EP10–12

Recommendation 10: evidence statements 1.2, 1.4, 1.6, 1.7, 1.9, 1.10–1.19, 1.20, 1.21, 2.4.4, 2.4.5, 2.5.5, 2.5.6, 3.3.3, 3.3.4, 3.3.6, 3.3.7, EP14

Recommendation 11: EP5, EP10–12

Recommendation 12: evidence statements: 3.3.1–3, 3.2.1, 3.2.2, 3.3.1–9, EP5, EP10–12

Recommendation 13: EP5, EP10–12

Recommendation 14: EP5, EP10–12

Recommendation 15: EP1–3

Recommendation 16: EP1–3, EP14

Recommendation 17: IDE

Economic analysis

Review 1 identified 79 interventions dealing with 6 behaviours: smoking, diet, physical activity, alcohol, sexual health and multiple health targets. All interventions fall well below the accepted £20,000–£30,000 costs per quality-adjusted life year (QALY) threshold. However, sensitivity

analyses suggest that some may have incremental cost-effectiveness ratios (ICERs) above this threshold. In this review, sexual health interventions were least cost effective but no other characteristics or behaviour change techniques were related to cost-effectiveness estimates.

Review 2 identified 251 interventions across the 6 behaviours, of which 102 provided cost–utility estimates (£/QALY). Using the upper estimate and lower threshold (the most cautious approach), 85% of interventions were identified as cost effective. Using the lower estimates, smoking cessation interventions were significantly more cost effective than interventions targeting multiple behaviours.

Across all interventions, those targeting the general population had better cost–utility results and were more likely to be cost effective than those aimed at vulnerable populations. Regression analyses across, as well as within, behaviours suggests there is little or no consistent association between the presence of an individual behaviour change technique (or cluster of behaviour change techniques) and an intervention being cost effective.

The authors of the reviews state that the findings need to be interpreted cautiously given:

- the different search strategies for reviews 1 (based on interventions already assessed by NICE as cost effective) and 2 (based on the search strategy used for evidence review 2)
- reliance on incomplete information in published papers
- heterogeneity in economic analyses
- lack of consensus for a definition of 'choice architecture'
- bias in reporting of study findings.

Fieldwork findings

Fieldwork aimed to test the relevance, usefulness and feasibility of putting the recommendations into practice. The PDG considered the findings when developing the final recommendations. For details, see [Behaviour change \(partial update of PH6\) – fieldwork report](#).

Fieldwork participants who are involved in, or support, behaviour change activities were fairly positive about the recommendations and their potential to help change an individual's behaviour. This included practitioners, commissioners, service providers, health and wellbeing board

members, national bodies (from both the public and private sectors), royal colleges and academics.

Many participants welcomed the emphasis on evidence-based investment, but were keen to ensure this should not stifle innovation or narrow the options available to commissioners.

They described the commissioning recommendations as bold and ambitious. While recognising that they may be difficult to implement in the current climate, participants did not believe the approach should be diluted.

There were some concerns that independent evaluation may be viewed as unaffordable. It was suggested that evaluation should be built into the original design or service specification to ensure it does take place.

Fieldwork participants did not think the recommendations offered a new approach, but they agreed that the measures had not been implemented universally. They believed wider, more systematic implementation would be achieved if there was a clearer definition of the techniques and training requirements for staff and commissioners.

11 Gaps in the evidence

The Programme Development Group (PDG) identified a number of gaps in the evidence related to the programmes under examination based on an assessment of the evidence. These gaps are set out below.

1. There is a lack of evidence on the effectiveness or cost-effectiveness of using choice architecture interventions to change alcohol, sexual health behaviours, smoking and physical activity-related behaviours (with the exception of choice architecture interventions to promote stair use). In particular, there is a lack of UK-based primary research exploring the differential impacts of such interventions.

(Source: Expert paper 8)

2. There is a lack of evaluation, using appropriate research designs, of choice architecture interventions used in commercial settings to determine their effectiveness, cost-effectiveness or usability in non-commercial settings.

3. There is a lack of review-level work and primary research examining the effectiveness of individual behaviour change techniques.

(Source: Expert paper 14)

4. There is a lack of evidence addressing what the most effective approach is to dealing with multiple behaviours (for example, if someone smokes, consumes alcohol above recommended weekly limits and is physically inactive). Specifically:

a) Should behaviours be approached in sequence or in combination?

b) If multiple behaviours are addressed in combination, how is this decided? For example, is it based on the types of behaviour? How dependent is it on the person's capability, opportunity and motivation?

(Source: Expert paper 14)

5. There is a lack of evidence prospectively investigating the relationship between practitioner training, subsequent competencies and behaviour change interventions. In particular, studies have not looked at the effect size of competencies or training.

(Source: Evidence review 3)

6. There is limited research on the training needed to address barriers to delivering behaviour change interventions.

(Source: Evidence review 3)

7. There is a lack of published research that provides details of the theoretical basis of an intervention (beyond the naming of a theory). There is a lack of evidence on how theoretical accounts of behaviour change can be used to guide evidence synthesis (combining multiple sources of quantitative evidence, such as meta-regression, meta-analysis) of behaviour change interventions.

(Source: Evidence review 2)

8. There is a lack of recent evidence (post-2003) on behaviour change techniques used to influence sexual behaviour. In particular, there is a lack of UK randomised control trials with populations aged 16 and over.

(Source: Evidence review 2)

The Committee made 7 recommendations for research into areas that it believes will be a priority for developing future guidance. These are listed in [Recommendations for research](#).

12 Membership of the Programme Development Group (PDG) and the NICE project team

Programme Development Group

PDG membership is multidisciplinary. The Group comprises public health practitioners, clinicians, local authority officers, teachers, social care professionals, representatives of the public, academics and technical experts as follows.

Paul Lincoln (Chair)

Chief Executive Officer, UK Health Forum

Charles Abraham

Professor of Behaviour Change, Peninsula College of Medicine and Dentistry, University of Exeter

Fiona Adshead

Independent consultant

Deborah Arnott

Chief Executive, Action on Smoking and Health

Deryn Bishop

Health Behaviour Specialist, The Training Tree

Damian Edwards

Director of Behavioural Interventions, National Obesity Forum (UK)

Alan Higgins

Director of Public Health, Oldham Council

Ruth Jepson

Senior Scientific Advisor, Scottish Collaboration for Public Health Research and Policy

Annice MacLeod

Community Member

Susan Michie

Professor of Health Psychology, Division of Psychology and Language Sciences, University College London

Simon Murphy

Reader, Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer), Cardiff School of Social Sciences, Cardiff University

Margaret Rings

Senior Health Advisor, Department of Genitourinary Medicine, Oxford University Hospitals Trust (OUHT)

Jennifer Roberts

Professor of Economics, Department of Economics, University of Sheffield

Graham Rushbrook

Director, RBE Associates, Independent public health specialist and RSPH Development adviser

Stephen Sutton

Professor of Behavioural Science, Institute of Public Health, University of Cambridge

Malcolm Ward

Principal Health Promotion Specialist, Public Health Wales

Philip Whelan

Community member – PDG member until February 2013

Ann Williams

Commissioning and Contracts Manager, Liverpool City Council

Co-opted members

Rona Campbell

Professor of Public Health Research, School for Social and Community Medicine, University of Bristol

Pam Rees

Community member – from February 2013

NICE project team

Mike Kelly

CPH Director

Catherine Swann

Associate Director

Charlotte Haynes

Lead Analyst

Chris Carmona

Analyst

Rachel Kettle

Analyst

Suzi Peden

Analyst

Daniel Heller

Analyst

Lesley Owen

Technical Adviser, Health Economics

Helen Gollins

Specialty Registrar, Public Health

Oyinlola Oyebode

Specialist Registrar, Public Health

Victoria Axe

Project Manager

Denise Jarrett

Coordinator

Sue Jelley

Senior Editor

Susie Burlace

Editor

About this guidance

What does this guidance cover?

In 2007, the Department of Health (DH) asked the National Institute for Health and Clinical Excellence, now known as the National Institute for Health and Care Excellence (NICE) to produce guidance on the principles for effective behaviour change.

Following a [review](#) of the guidance in 2010, NICE decided to wait for the conclusions of the House of Lords Science and Technology Select Committee's inquiry on a range of factors that impact on behaviour change, before making a decision to update the guidance. Following publication of the report (House of Lords 2011), NICE decided to extend the original guidance to cover recommendations about individual interventions for behaviour change.

This guidance does not cover:

- [Community-level interventions](#) or [population-level interventions](#) to change behaviour (these will be the subject of future guidance updates).
- [Choice architecture interventions](#): the evidence was considered but no recommendations were made (see [considerations](#) and [recommendations for research](#)). This area will be considered at the next guidance update.
- Clinical and pharmacological methods of changing behaviour that have no public health or health promotion element.
- Recommendations on how to undertake research (see NICE's local government briefing on [behaviour change](#) for research principles).
- Behaviour change in children and young people under 16. This will be the subject of future NICE guidance.

The absence of any recommendations on interventions that fall within the scope of this guidance is a result of a lack of evidence. It should not be taken as a judgement on whether these interventions are effective or cost effective.

How was this guidance developed?

The recommendations are based on the best available evidence. They were developed by the Programme Development Group (PDG).

Members of the PDG are listed in [Membership of the Programme Development Group and the NICE project team](#).

For information on how NICE public health guidance is developed, see the NICE [public health guidance process and methods guides](#).

What evidence is the guidance based on?

The [evidence](#) that the PDG considered included:

- Evidence reviews:
 - Review 1: 'Individual-level behaviour change: review of current NICE guidance and recommendations' was carried out by Bazian Ltd and University College London. The principal authors were: Rob Davies, Joelle Kirby, Alan Lovell, Alicia White, Rob Cook and Benjamin Gardner.
 - Review 2: 'Individual-level behaviour change: review of evidence of effectiveness of interventions and behaviour change techniques in individual level interventions' was carried out by Bazian Ltd and University College London. The principal authors were: Sarah Caton, Alicia White, Craig Whittington, Alan Lovell, Joelle Kirby, Elly O'Brien, Anelia Boshnakova, Alex McAleenan, Alex Lipman, Benjamin Gardner and Rob Cook.
 - Review 3: 'Individual-level behaviour change: A qualitative review of studies describing the skills base needed to deliver behaviour change interventions or techniques' was carried out by Bazian Ltd, University of Southampton and University College London. The principal authors were: Kath Barnard, Rob Cook, Alan Lovell, Joelle Kirby, Alicia White and Benjamin Gardner.
- Reviews of economic evaluations:
 - Review 1: 'Behaviour change update: stage 1. Behaviour change technique (BCT) analysis of existing, cost-effective interventions' was carried out by University College,

London. The principal authors were: Lion Shahab, Emma Beard and Benjamin Gardner.

- Review 2: 'Behaviour change update: stage 3. BCT analysis of behaviour change interventions reported in studies of cost effectiveness' was carried out by University College, London. The principal authors were: Lion Shahab, Fabi Lorencatto and Emma Beard.

- Expert papers:

- Expert paper 1 'Behaviour change – identifying effective elements of behaviour change interventions' by Charles Abraham, University of Exeter.
- Expert paper 2 'Mechanisms and processes of behaviour change' by Ray Pawson, University of Leeds.
- Expert paper 3 'Behaviour change and addiction' by Robert West, University College, London.
- Expert paper 4 'Behaviour change – policy and context' by Laura Haynes, Cabinet Office.
- Expert paper 5 'Behaviour change – implementation and maintenance' by Colin Greaves, University of Exeter.
- Expert paper 6 'Behaviour change – complex and multiple health-related behaviours' by David Buck, The King's Fund.
- Expert paper 7 'Behaviour change – local authorities and public health' by Alan Higgins, Oldham Council and Rachel Flowers, Newham Council.
- Expert paper 8 'Behaviour change: choice architecture, economic environment and the ethics/acceptability of such techniques' by Theresa Marteau, Behaviour and Health Research Unit.
- Expert paper 9 'Behaviour change – Complex and multiple interventions' by Rona Campbell, University of Bristol.
- Expert paper 10 'Behaviour change – evidence into practice' by Deryn Bishop, The Training Tree.

- Expert paper 11 'Behaviour change qualifications' by Diana Moss, Royal Society of Public Health.
- Expert paper 12 'Behaviour change competencies' by Diane Dixon, University of Strathclyde.
- Expert paper 13 'Behaviour change – policy and context' by Jessica Allen, University College, London.
- Expert paper 14 'Evidence of effectiveness of specific behaviour change techniques' by Susan Michie, University College, London.

In some cases the evidence was insufficient and the PDG has made recommendations for future research. For the research recommendations and gaps in research, see [Recommendations for research](#) and [Gaps in the evidence](#) respectively.

Status of this guidance

The draft guidance, including the recommendations, was released for consultation in July 2013. At its meeting in September 2013, the PDG amended the guidance in light of comments from stakeholders and experts and the fieldwork. The guidance was signed off by the NICE Guidance Executive in December 2013.

The guidance complements but does not replace NICE guidance on behaviour change, alcohol use, eating patterns, physical activity, sexual behaviour, smoking and other guidance concerned with changing people's knowledge, attitudes and behaviours to prevent and tackle disease and illness. (For further details, see [section 7](#)).

The recommendations should be read in conjunction with these existing topic-specific NICE guidance unless explicitly stated otherwise.

The guidance is available on NICE's website. The recommendations are also available in a [pathway](#) for professionals whose remit includes public health and for interested members of the public.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE

guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Implementation

NICE guidance can help:

- Commissioners and providers of NHS services to meet the requirements of the [NHS outcomes framework 2013–14](#). This includes helping them to deliver against domain one: preventing people from dying prematurely.
- Local health and wellbeing boards to meet the requirements of the [Health and Social Care Act \(2012\)](#) and the [Public health outcomes framework for England 2013–16](#).
- Local authorities, NHS services and local organisations determine how to improve health outcomes and reduce health inequalities during the joint strategic needs assessment process.

NICE has developed [tools](#) to help organisations put this guidance into practice.

Updating the recommendations

This guidance will be reviewed 3 years after publication to determine whether all or part of it should be updated. Information on the progress of any update will be posted at the [NICE website](#).

Your responsibility

This guidance represents the views of the Institute and was arrived at after careful consideration of the evidence available. Those working in the NHS, local authorities, the wider public, voluntary and community sectors and the private sector should take it into account when carrying out their professional, managerial or voluntary duties.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the

guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

Copyright

© National Institute for Health and Care Excellence 2014. All rights reserved. NICE copyright material can be downloaded for private research and study, and may be reproduced for educational and not-for-profit purposes. No reproduction by or for commercial organisations, or for commercial purposes, is allowed without the written permission of NICE.

ISBN 978-1-4731-0374-0