

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Behaviour change: digital and mobile health interventions

In the original remit of a related NICE guideline, [behaviour change: general approaches](#) (PH6), the Department of Health in England asked NICE to develop guidance on 'generic and specific interventions to support attitude and behaviour change at population and community levels'. Subsequently NICE was asked to update the PH6 guideline with a focus on individual-level behaviour change techniques for different population groups (NICE guideline on [behaviour change: individual approaches](#); PH49).

This guideline will complement the NICE guideline on behaviour change: individual approaches.

NICE worked with Public Health England to develop this scope.

The guideline will be developed using the methods and processes outlined in [developing NICE guidelines: the manual](#).

1 Why the guideline is needed

Routine surveillance of NICE guidelines PH6 and PH49 identified new evidence on the use of technology-based interventions for behaviour change. This highlighted the need for a guideline in this area.

This guideline will cover digital and mobile health interventions for the individual. It will address established unhealthy behaviours such as tobacco dependence, hazardous or binge drinking, poor diet, lack of physical activity or sedentary behaviour and unsafe sexual practices. Addressing such behaviours can help to reduce the risk of developing chronic conditions, for example, diabetes and cardiovascular diseases. It can also help people to self-manage, self-monitor or improve them. The guideline will also consider

how digital and mobile health interventions could be used to improve mental wellbeing (by changing [established unhealthy behaviours](#) to help manage conditions such as stress and anxiety).

Current practice

Digital interventions, such as apps, wearable devices and online programmes and websites, may help people achieve health goals such as being more physically active, managing their weight, quitting smoking or reducing alcohol intake. Mobile health interventions such as SMS text-messaging services may also help people to achieve these goals.

Using technologies to help self-monitoring and to support behaviour change may give people the techniques and tools to help them reduce their risk of developing chronic conditions or to manage chronic conditions they already have.

Various policies have identified digital technologies as a means to achieving change. For example, the Department of Health and Social Care's 2017 [tobacco control plan](#) recognises that digital developments can be an innovative way to engage with the public.

NHS England has commissioned the assessment of digitally enabled therapies for depression and anxiety in adults as part of the [Improving Access to Psychological Therapies](#) (IAPT) programme. The [NHS Apps Library](#) includes a range of apps to help people manage and improve their health. As part of the Health Developer Network [assessment process](#), developers are asked whether the product includes behaviour change components for which there is justification for, or evidence of effectiveness in, changing the targeted behaviour.

Policy

NHS England's [Next steps on the NHS Five Year Forward View](#) 2017 strategy highlights that better use of information and technology, particularly increasing the use of apps to help people manage and improve their own health, can

help to meet the health needs of the growing and ageing population and reduce pressure on services.

The use of digital technology for behaviour change is identified as an opportunity in Public Health England's 5-year strategy ([From evidence into action: opportunities to protect and improve the nation's health](#)).

The [Department for Digital, Culture, Media and Sport's 2017 UK digital strategy](#) outlines plans to devote £4.2 billion to health and care over a 5-year period to embed digital technologies in public service delivery.

The digital strategy and a [report by the Government Office for Science](#) both note the growth of emerging technologies such as artificial intelligence. This can be used on smartphones and wearable devices to help manage chronic conditions ([Artificial intelligence: opportunities and implications for the future of decision making](#)).

This guideline may help to address Domain 2 of the [NHS Outcomes Framework](#) for 2016/17 Enhancing quality of life for people with long-term conditions.

2 Who the guideline is for

This guideline is for:

- local policy makers and commissioners
- individuals, groups or organisations wishing to work with health and social care service providers
- designers and providers of technology-based behaviour change interventions and programmes
- trained behaviour change practitioners
- trained staff working in health and social care services who have contact with the general public.

It may also be relevant for:

- people who want to change their behaviour (for example, to stop smoking) or who are interested in self-managing a chronic condition, and their families or carers, and other members of the general public.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#), and [Northern Ireland Executive](#).

Equality considerations

NICE has carried out an [equality impact assessment](#) during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope.

The guideline will look at inequalities relating to the protected characteristics defined by the Equality Act 2010. Other issues to consider, if evidence is available, include socioeconomic status, geographical location and health literacy.

3 What the guideline will cover

3.1 Who is the focus?

Groups that will be covered

Everyone, including children and young people under 16 (and their families or carers), who would benefit from changing the established unhealthy behaviours listed in section 3.3.

Specific consideration will be given to people with the following chronic physical or long-term mental health conditions, who may benefit from changing an established unhealthy behaviour because it affects their health or mental wellbeing:

- Hypertension and cardiovascular disease (including stroke and coronary heart disease).

- Overweight or obesity.
- Respiratory diseases (asthma, chronic obstructive pulmonary disease).
- Diabetes.
- Musculoskeletal conditions.
- Mental health conditions (including anxiety, depression and dementia).
- Cancers (for example, lung cancer and stopping smoking).

Specific consideration will also be given to people with learning disabilities and people with neurodevelopmental disorders such as autism.

3.2 Settings

Any setting where people may be referred to, self-refer to, or access digital or mobile health behaviour change interventions, including online or other digital access platforms.

3.3 Activities, services or aspects of care

Key areas that will be covered

We will look at evidence in the areas below when developing the guideline, but it may not be possible to make recommendations in all the areas.

- 1 Digital and mobile health behaviour change interventions. That is, interventions that deliver behaviour change techniques or components through a digital or mobile platform. This may involve some direct or ongoing interaction with a practitioner or healthcare professional¹. This includes those delivered by: text message, apps, wearable devices or the internet. These interventions will focus on changing any of the following established unhealthy behaviours to improve physical health:
 - tobacco dependence
 - hazardous or binge drinking
 - unhealthy eating patterns
 - a lack of physical activity or sedentary behaviour

¹ A healthcare practitioner or professional may refer people to a digital or mobile health behaviour change intervention, or they may provide some form of induction in its use, as well as some ongoing support. But it should be the digital or mobile health technology itself that delivers the action, process of intervening or behaviour change techniques (as opposed to the healthcare practitioner or professional).

- unsafe sexual behaviour.

The interventions will also focus on digital or mobile health strategies to improve mental wellbeing (for example, building resilience, managing stress, improving sleep and sleep hygiene, and reducing social isolation).

This may include interventions to change multiple behaviours.

Areas that will not be covered

- 1 National policy, fiscal and legislative measures.
- 2 Clinical or pharmacological methods of achieving behaviour change with no public health or health promotion element. For example, appointment reminders, medication reviews or self-care solely to improve medicine adherence.
- 3 Clinical interventions to help with the diagnosis, treatment or management of a chronic physical or long-term mental health condition.
- 4 Psychiatric interventions delivered as part of the therapeutic process for people with a mental health problem, including digital or mobile health therapies that are used to treat depression, anxiety disorders, psychosis or other psychological conditions.
- 5 Interventions delivered solely by a healthcare professional or practitioner (for example, counselling delivered over the telephone, video-links or by real-time live instant messaging).
- 6 Changes to the public realm to support behaviour change (such as designing and managing public spaces in a way that encourages and helps people to be physically active).
- 7 Digital or mobile health interventions to change the behaviour of healthcare professionals or other professionals who support people to change their unhealthy behaviours.
- 8 Digital or mobile health interventions that aim to prevent the uptake of behaviours such as smoking, harmful drinking or unsafe sexual behaviour, and/or to help maintain healthy behaviours including relapse prevention.

Related NICE guidance

Published

- [Stop smoking interventions and services](#) (2018) NICE guideline NG92
- [Physical activity and the environment](#) (2018) NICE guideline NG90
- [Sexually transmitted infections: condom distribution schemes](#) (2017) NICE guideline NG68
- [Type 2 diabetes: prevention in people at high risk](#) (2017) NICE guideline PH38
- [Cancer of the upper aerodigestive tract: assessment and management in people aged 16 and over](#) (2016) NICE guideline NG36
- [Type 2 diabetes in adults: management](#) (2015) NICE guideline NG28
- [Weight management: lifestyle services for overweight or obese adults](#) (2014) NICE guideline PH53
- [Contraceptive services for under 25s](#) (2014) NICE guideline PH51
- [Behaviour change: individual approaches](#) (2014) NICE guideline PH49
- [Weight management: lifestyle services for overweight or obese children and young people](#) (2013) NICE guideline PH47
- [Lung cancer: diagnosis and management](#) (2011) NICE guideline CG121 (currently being updated, publication expected February 2019)
- [Chronic obstructive pulmonary disease in over 16s: diagnosis and management](#) (2010) NICE guidance CG101 (currently being updated, publication expected December 2018)
- [Behaviour change: general approaches](#) (2007) NICE guideline PH6

In development

- [Tobacco update](#). NICE guideline. Publication date January 2020.

NICE guidance about the experience of people using NHS services

NICE has produced the following guidance on the experience of people using the NHS. This guideline will not include additional recommendations on these topics unless there are specific issues related to technology-based interventions:

- [Medicines optimisation](#) (2015) NICE guideline NG5
- [Patient experience in adult NHS services](#) (2012) NICE guideline CG138
- [Service user experience in adult mental health](#) (2011) NICE guideline CG136
- [Medicines adherence](#) (2009) NICE guideline CG76

3.4 Economic aspects

We will take economic aspects into account when making recommendations. We will develop an economic plan that states for each review question (or key area in the scope) whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an appropriate perspective.

3.5 Key issues and draft questions

While writing this scope, we have identified the following key issues and draft questions related to them:

- 1 What behaviour change components or techniques² used in digital or mobile health interventions (delivered by text message, apps or the internet) effectively change established unhealthy behaviours compared with usual care or other active interventions? (The latter could include, for example, health professional-led interventions or a combination of health professional and digital-led interventions.) Do the behaviour change components or techniques used in digital or mobile health interventions:
 - 1.1 improve health or mental wellbeing?
 - 1.2 improve the management of a chronic physical or long-term mental health condition (by changing established unhealthy behaviours, which may improve health outcomes, for those with such a condition)?

² These include those coded using the behaviour change taxonomy checklist described by Michie et al. 2013.

- 2 What behaviour change components or techniques used in digital or mobile health interventions effectively improve adherence to, or sustain, changes in behaviour?
- 3 What sociodemographic factors of the target audience (such as age, gender, socioeconomic group, ethnicity and digital literacy) moderate the effectiveness of digital or mobile health behaviour change interventions?
- 4 What factors related to the medium through which an intervention is delivered (for example, websites compared with apps) moderate the effectiveness of digital or mobile health behaviour change interventions?
- 5 What factors relating to the way an intervention is selected, delivered and designed moderate the effectiveness of digital or mobile health behaviour change interventions?
- 6 How does the level of health professional or practitioner involvement moderate the effectiveness of digital and mobile health behaviour change interventions?
- 7 What are the potential adverse effects or unintended consequences of digital and mobile health behaviour change interventions?
- 8 How does the extent of engagement with digital or mobile health interventions influence their effectiveness as a means of behaviour change?

The key issues and draft questions will be used to develop more detailed review questions, which guide the systematic review of the literature.

3.6 Main outcomes

The main outcomes that may be considered when searching for and assessing the evidence are:

- changes in behaviour
- sustained changes in behaviour
- health and psychosocial outcomes
- health-related quality of life
- extent of engagement
- resources use and costs
- safety or adverse effects, including unintended consequences.

4 NICE Pathways

4.1 NICE Pathways

When this guideline is published, the recommendations will be added to NICE Pathways. NICE Pathways bring together all related NICE guidance and associated products on a topic in an interactive flowchart. The existing [behaviour change flowchart](#) will be reviewed and amended to integrate the new recommendations.

5 Further information

This is the final scope, which incorporates comments from registered stakeholders during consultation.

The guideline is expected to be published in August 2020.

You can follow progress of the [guideline](#).

Our website has information about how [NICE guidelines](#) are developed.