NICE National Institute for Health and Care Excellence

NICE

Evidence generation plan for digitally enabled therapies for adults with depression

Implementation support

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Contents

1   Purpose of this document

NICE's assessment of digitally enabled therapies for adults with depression recommends that more evidence is generated while 3 of the technologies are being used in the NHS (Beating the Blues, Deprexis and Space from Depression). These technologies can be used once they have Digital Technology Assessment Criteria (DTAC) approval and an NHS Talking Therapies for anxiety and depression digitally enabled therapies assessment from NHS England. The other technologies that were assessed can only be used in research and are not covered in this plan.

This plan outlines the evidence gaps and what real-world data needs to be collected for a NICE review of the technologies again in the future. It is not a study protocol but suggests an approach to generating the information needed to address the evidence gaps. For assessing comparative treatment effects, randomised controlled trials are the preferred source of evidence if these are able to address the research gap and can be done well.

The companies are responsible for ensuring that data collection and analysis takes place. Support for evidence generation will be available through a competitive process facilitated by the Office for Life Sciences, pending business case approval. This will be in the form of funding for evidence generation consortia, bringing analytical partners and implementation sites together with companies for evidence generation.

Guidance on commissioning and procurement of the technologies will be provided by NHS England, who are developing a digital health technology policy framework to further outline commissioning pathways.

NICE will withdraw the guidance if the companies do not meet the conditions in section 4 on monitoring.

After the end of the evidence generation period (3 years), the companies should submit the evidence to NICE in a form that can be used for decision making. NICE will review all the evidence and assess whether the technologies can be routinely adopted in the NHS.

2   Evidence gaps

This section describes the evidence gaps, why they need to be addressed and their relative importance for future committee decision making.

The committee will not be able to make a positive recommendation without the essential evidence gaps (see section 2.1) being addressed. The companies can strengthen their evidence base by also addressing as many other evidence gaps (see section 2.2) as possible. This will help the committee to make a recommendation by ensuring it has a better understanding of the patient or healthcare system benefits of the technologies.

2.1   Essential evidence for future committee decision making

Effectiveness compared with NHS standard care

The technologies should be compared with non-digital standard care. These are the treatments offered for a new episode of less severe or more severe depression in NHS Talking Therapies for anxiety and depression services, in line with NICE's guideline on depression in adults.

Use of outcome measures routinely collected in the NHS

More evidence of the effectiveness of the technologies is needed because some studies used outcome measures that are not routinely collected in the NHS. Rates of recovery, reliable recovery, reliable improvement and reliable deterioration are the recovery standards measured in NHS Talking Therapies for anxiety and depression services (see NHS England's NHS Talking Therapies manual). Although not routinely collected in the NHS, more information on the effect of the technologies on relapse is also needed to help evaluate their clinical and cost effectiveness.

Adverse response to treatment

Few studies reported adverse effects or when additional treatment or stepping up of care was needed. Stepping up of care means that people have more intensive treatments if

they do not benefit from initial treatments. This information would help the committee decide whether these technologies can be used safely in the NHS.

Resource use

More information on resource use during and after treatment is needed to help the committee understand the technologies' cost effectiveness. For example, the technologies could reduce practitioner or therapist time compared with other psychological interventions. This could free up resources that could be used to increase access to treatment or reduce waiting times.

2.2 Evidence that further supports committee decision making

Patient experience and rates and reasons for stopping treatment

This information will help the committee understand how people with depression interact with the technologies and if they find them acceptable to use. Also, it will highlight any challenges in using the technologies, such as problems with access, or their effect on waiting times.

Health-related quality of life

More evidence is needed to understand the cost effectiveness of the technologies, and health-related quality of life is an important driver of health economic evaluation. The EQ-5D is the preferred tool for measuring health-related quality of life but non-standard measures such as the Recovering Quality of Life questionnaire may better capture benefits in people using mental health services within the NHS.

3   Approach to evidence generation

3.1   Evidence gaps and ongoing studies

Table 1 summarises the evidence gaps and any ongoing studies that might address them. Information about evidence status is derived from the assessment report; evidence not meeting the scope and inclusion criteria is not included. The table shows the evidence available to the committee when the guidance was published. Some studies listed as ongoing may now be published.

Table 1 Evidence gaps and ongoing studies

Evidence gap	Beating the Blues	Space from Depression	Deprexis
Effectiveness compared with NHS standard care	Limited evidence	No evidence Ongoing study	Limited evidence
Use of outcome measures routinely collected in the NHS	Limited evidence	Limited evidence Ongoing studies	Limited evidence
Adverse response to treatment	Limited evidence	No evidence	Limited evidence
Resource use	Limited evidence	Limited evidence	Limited evidence
Patient experience and rates and reasons for stopping treatment	Evidence available	Limited evidence Ongoing studies	Evidence available
Health-related quality of life	Limited evidence	No evidence	Evidence available

3.2   Data sources

NICE's real-world evidence framework provides detailed guidance on assessing the suitability of a real-world data source to answer a specific research question.

NHS Digital's Improving Access to Psychological Therapies data set is the data source that is most likely to be able to collect the real-world data necessary to address the essential evidence gaps. Everyone having treatment for depression within NHS Talking Therapies has measures of depression (Patient Health Questionnaire [PHQ-9] score), anxiety (Generalised Anxiety Disorder Assessment [GAD-7] score) and the extent to which mental health problems interfere with daily life (Work and Social Adjustment Scale [WSAS] score) recorded at every session (see NHS England's NHS Talking Therapies Manual). It is important to collect the recommended measure consistently across people having treatment with the technology and people having non-digital standard care. Measures of employment are also recorded before and after treatment. Some patient experience data may be collected through the patient experience questionnaire included in this data source.

Additional data collection, for example, through linked primary care data sources, data collected through the technologies, or primary data collection, could capture other data items, such as engagement with the technologies.

The quality and coverage of real-world data collections are of key importance when used in generating evidence. Active monitoring and follow up through a central coordinating point is an effective and viable approach of ensuring good-quality data with broad coverage.

3.3   Evidence collection plan

A suggested approach to addressing the evidence gaps for the technologies is a parallel cohort study with a qualitative survey incorporated, within NHS Talking Therapies for anxiety and depression services. How this approach could address the evidence gaps is considered, and any strengths and weaknesses highlighted. A well-constructed and well-done parallel cohort study in this setting could generate data to address the evidence gaps and could be sufficient for NICE decision making. But alternative approaches, such as through a robust and well-designed clinical trial, would also be viable. NICE's real-world evidence framework acknowledges that randomised controlled trials are the preferred design for estimating comparative effects. But also that non-randomised evidence can

complement trial evidence or address the same evidence gaps if randomised trial evidence is insufficient or not feasible.

The NHS Talking Therapies for anxiety and depression digitally enabled therapies assessment needs a randomised controlled trial to establish efficacy. So, if a company has yet to meet this requirement, a pragmatic randomised controlled trial could address the evidence gaps. For example, people interested in having digital technology treatment could be randomised to a digital technology or standard non-digital care in NHS Talking Therapies services. The companies will need to clearly define their intended population against the primary population descriptors in NHS Talking Therapies services.

In a parallel cohort study, 2 or more groups of people are followed over time and their outcomes compared.

The comparison treatment is non-digital standard care alone, defined as treatments offered for a new episode of less severe or more severe depression in NHS Talking Therapies for anxiety and depression services. The comparison treatment that is used should be clearly described. The companies should prespecify the claimed benefits and position of their technologies in the clinical pathway for depression to justify their selected comparison population, if narrower than the comparison population described above. Eligibility criteria and the time point of starting follow up should be reported. Examples of eligibility criteria include the indication for referral, the problem descriptor assigned at assessment and an assessment of the risk and suitability of digitally enabled therapy for the person. The companies should clearly define their intended population against the primary population descriptors in NHS Talking Therapies services; these should be consistent between comparison groups, for example, for severity of depression.

The large variability in outcomes between different NHS services should be considered when selecting a comparator group representing non-digital standard care, considering the service's performance against national outcomes for the relevant condition. When more than 1 technology is in use, the companies could collaborate and collect data comparing the technologies.

In the parallel cohort design, people who engage with the technology will differ from people in the comparison group, so important differences at baseline will need to be controlled for. This could be done, for example, through propensity score methods, and a new user, active comparator design used. High-quality data on patient characteristics is needed to correct for differences and to assess who the technologies are not suitable for.

So, a weakness of this design (compared with a randomised controlled trial) is the likely need for additional data collection beyond routinely collected data items. Important confounding factors should be identified, with input from clinical experts during protocol development. Loss to follow up, with reasons, should be reported over the data collection period.

This study could ideally enrol multiple centres to show how the technologies can be implemented across a range of services, representing the variety in the NHS; stratification could allow robust statistical analysis. Composition and description of the included services must be reported for standard care, treatment options, and performance against national outcomes for the relevant condition.

An enrolment period should be included and be long enough to account for learning effects when implementing the new technologies.

Data may be collected through a combination of primary data collection, routine NHS data sources, and through data collected by the technologies themselves.

The study should consider uptake of the technologies among people who are eligible for them. By also considering historical data, the study may identify changes in overall access to treatment when this is a claimed benefit.

Feedback can also be collected through a survey or structured interviews with people using the technologies. Robustness of survey results depends on comprehensive distribution across people who are eligible and on the sample being representative of the population of potential users.

NICE's real-world evidence framework provides guidance on the planning, conduct, and reporting of real-world evidence studies. This document also provides best practice principles for robust design of real-world evidence when assessing comparative treatment effects using a prospective cohort study design.

3.4 Data to be collected

The following data should be collected for the technologies and their comparators to address the evidence gaps:

- Baseline data including:

- age, gender and employment status

- previous treatments including medicines and treatment outside of NHS Talking Therapies services

- medical history including duration of the current mental health episode, current physical and psychiatric comorbidities, long-term physical health problems, alcohol or drug issues

- the indication for referral and problem descriptor (see NHS England's NHS Talking Therapies manual)

- symptom severity (according to the recommended measure for the disorder in NHS England's NHS Talking Therapies manual)

- risk classification or other characteristics that may be related to the likelihood of choosing to access the technology, for example, socioeconomic status, language or ethnicity

- willingness to have treatment with a digital technology.

- Rates of recovery, reliable recovery, reliable improvement, and reliable deterioration, calculated based on paired-data outcomes using PHQ-9 and GAD-7 (see NHS England's NHS Talking Therapies manual). Paired-data outcomes should be measured at baseline, post-treatment and further follow up (ideally up to 1 year). Some people have multiple treatments within the episode of care. To accurately evaluate the impact of the technology in question, paired outcomes should be taken at the beginning and end of their treatment with the technology, as well as for their overall treatment episode.

- Rate of relapse (that is, presenting with the same or similar disorder after recovery).

- Ideally, a measure of functioning (for example, WSAS), measured at baseline, post-treatment and at further follow up (ideally up to 1 year).

- Adverse effects (for example, incidence of suicide and self-harm) and stepping up of care.

- Health-related quality of life (for example, EQ-5D, Recovering Quality of Life questionnaire scores) measured at baseline, post-treatment and further follow up (ideally up to 1 year).

- Resource use before, during and after treatment. This should include staff time to implement and maintain the technologies and use them between appointments, for example to check alerts. It should also include the average number of treatment sessions per person, and the level of support provided (defined by healthcare professional grade and time).

- Access to treatment, including average waiting time from referral to treatment for everyone needing treatment for depression, for people having standard care, and for people using the technologies.

- Use of the technology including:

  — number of people accessing services with the relevant clinical indication

  — number of people offered the technology

  — number and proportion who started using the technology

  — engagement over time

  — rates of stopping treatment

  — reasons why people stop using the technologies (for example, because of improvements in symptoms, lack of improvement or other reasons)

- Patient experience of the acceptability, perceived effectiveness, accessibility and standard of treatment delivered through the technology (for example, challenges with using the technology). This should be collected at the end of treatment, including for people who stopped treatment early.

- Information about any updates to the technologies during the observation period.

Outcomes could be compared with national standards, as outlined in NHS England's NHS Talking Therapies manual.

Data collection should follow a predefined protocol and quality assurance processes should be put in place to ensure the integrity and consistency of data collection as outlined in NICE's real-world evidence framework.

3.5 Evidence generation period

This will be 3 years to allow for setting up, implementation, data collection, analysis and reporting.

4 Monitoring

The companies must contact NICE:

- within 6 months of publication of this plan to confirm agreements are in place to generate the evidence

- annually to confirm that the data is being collected and analysed as planned.

The companies should tell NICE as soon as possible of anything that may affect ongoing evidence generation, including:

- any substantial risk that the evidence will not be collected as planned

- new safety concerns

- the technology significantly changing in a way that affects the evidence generation process.

If data collection is expected to end later than planned, the companies should contact NICE to arrange an extension to the evidence generation period. NICE reserves the right to withdraw the guidance if data collection is delayed, or if it is unlikely to resolve the evidence gaps.

5 Implementation considerations

The following considerations around implementing the evidence generation process have been identified through working with system partners:

- The companies should provide training for staff to support use of the technologies.

- Practitioners and therapists need time for training and supervision, and to get a thorough understanding of the digital content. They also need time to support people accessing the technologies and to review their progress.

- The technologies may not be suitable for everyone, for example those without access to, or who cannot use, a smartphone or computer.

- The evidence generation process is most likely to succeed with dedicated research staff to reduce the burden on NHS staff.

- Collecting data that is not routinely collected in NHS Talking Therapies services would need ethics approval, consent, additional staff, a separate IT system and time for sufficient follow up. Collecting this data might be more feasible as part of a randomised controlled trial because it would be collected only from a subgroup of people having treatment in NHS Talking Therapies services.

- Evidence generation should be overseen by a steering group including researchers, commissioners, practitioners and representatives with lived experience.

- The contributing services or centres should be chosen to maximise the generalisability of evidence generated, for example including groups of people with different socioeconomic status, or to improve data collection for any relevant subgroups.

- Careful planning of approaches to information governance is vital.

- The companies may improve their chances of securing funding by also collecting data on outcomes relevant to other national organisations, for example, work and productivity outcomes.

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