Screening for depression in adults: protocol for an evidence map

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Abbreviations

DARE	Database of Abstract of Reviews of Effects
N/A	Not applicable
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health and Care Research
PHQ	Patient Health Questionnaire
PPI	Patient and Public Involvement
PPV	Positive predictive value
RCT	Randomised controlled trial
UK NSC	UK National Screening Committee
WHO	World Health Organization

1 Background

1.1 Condition

Depression is a mental health condition that can have a serious impact on the affected person and their ability to function.[1] It is commonly associated with physical comorbidities,[2-4] low mood, fatigue, and sleep disturbances such as insomnia.[5-7] It is also linked to reduced quality of life,[8] cognitive impairments,[9,10] diminished ability to perform daily activities, and poor social functioning.[11,12] Depression can impose a substantial burden on health and social care systems.[13] Its broader social impact may include greater reliance on welfare and benefits,[14] as well as impairments in communication and the ability to maintain relationships throughout the course of the illness.[2,15]

Severity of depression is determined by symptoms (which may vary in frequency and intensity), duration and the impact on personal and social functioning.[2,5] The National Institute for Health and Care Excellence (NICE) guideline NG222 defines depression as less severe (encompassing subthreshold and mild depression), and more severe (encompassing moderate and severe depression).[2] Even less severe depression can lead to functional impairment, which may in turn predict depressive relapses, and a chronic illness trajectory.[16,17]

In 2019 approximately 280 million people in the world were thought to have depression[18] and it is predicted to remain at this level until at least 2030.[13] In autumn 2022 in Great Britain, around 1 in 6 (16%) adults aged 16 years and over reported more severe depressive symptoms.[19] The prevalence varied by group, for example adult populations who were economically inactive because of long-term sickness (59%), unpaid carers for 35 or more hours a week (37%), disabled adults (35%), adults in the most deprived areas of England (25%), young adults aged 16 to 29 years (28%) and women (19%).[19]

1.2 Screening

Recognising depression is often challenging due to patient, provider, and system-level barriers.[20] Diagnosis is especially difficult when patients present with somatic or nonspecific symptoms rather than classic signs like low mood.[21,22] Primary care providers must assess a combination of somatic complaints, mood changes, and risk factors. This is particularly complex in patients with multiple comorbidities.[23] Screening questionnaires have become a useful tool to help identify undiagnosed cases of depression in primary care.[20] Screening for depression in primary care may help shorten the time from symptom onset to treatment, potentially preventing the progression from mild to more severe forms with associated adverse outcomes.[24]

There are a range of depression screening tools available which vary in length, style, presentation, administration and psychometric properties.[25] NICE recommends the use of the Patient Health Questionnaire (PHQ-9), the Hospital Anxiety and Depression Scale, or the Beck Depression Inventory-II to assess individuals for depression, severity of symptoms, functioning, and response to treatment.[26]A 2021 systematic review and meta-analysis assessed the performance and accuracy of depression

screening tools used in primary care.[27] The review included 81 studies reporting on 40 unique depression screening tools. Based on ease of administration, the authors identified 18 screening tools as suitable for use in primary healthcare settings. Among the six tools included in the meta-analyses, the PHQ-9 and WHO-5 demonstrated the highest accuracy (as measured by the diagnostic odds ratios, operating characteristic curve, specificity and positive likelihood ratios) and were the easiest to administer.[27] The PHQ is the most widely used and studied depression screening tool, with PHQ-9 and PHQ-2 being the most used versions.[28] The PHQ-9 is a nine-item self-report scale based on Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria that rates symptom frequency from 0 (not at all) to 3 (nearly every day), with a maximum score of 27;[26] whereas the PHQ-2 is designed as a rapid tool incorporating only the first two questions from the PHQ-9.[29] These tools have sensitivity from 0.77 to 0.81 (PHQ-9) and 0.83 to 0.87 (PHQ-2) and specificity from 0.91 to 0.94 (PHQ-9) and 0.78 to 0.92 (PHQ-2).[30] Evidence suggests that these tests have poor positive predictive value (PPV) when used in the general population (10 to 32%).[31-37] This means that the tools identify a significant number of false positives and could, therefore, lead to unnecessary follow up in patients who would never go on to develop depression.

1.3 Treatment

A variety of approaches for treating depression are recommended by NICE guideline NG222.[2] These include psychological and psychosocial interventions, pharmacological treatments and physical treatments and activities.[2] Understanding the relative benefits, harms and costs of these approaches is crucial to make an informed decision on treatment. This is particularly relevant for individuals with subthreshold depression, a condition affecting around 11% of the general population.[38] These individuals are approximately three times more likely to develop more severe depressive disorder than those without symptoms.[39] Early treatment for subthreshold depression, particularly through psychological or behavioural interventions, may help reduce symptom severity and prevent progression to more severe forms of illness.[39] However, some studies suggest that only 10 to 12%[40] of people with less severe (subthreshold) depression develop a more severe depressive disorder over time and therefore screening individuals for less severe (subclinical or subthreshold) depression runs the risk of overdiagnosis, leading people who might never experience clinical impairment or morbidity during their lives to be labelled and potentially treated without benefit.[41] In a recent cohort study where over 60,000 people were screened for depression, 7% were detected to have elevated depressive symptoms and/or suicidal ideation and by week 8 after screening 70% had received antidepressant/referral and/or follow-up care.[42] This highlights the importance of understanding whether initiating treatment for patients identified through screening leads to improved long-term outcomes.

1.4 Current UK NSC recommendation on screening for depression in adults

The UK NSC currently does not recommend screening for depression in adults.

1.5 Previous reviews

In 2014, the UK NSC commissioned a review to evaluate the evidence for introducing a systematic population screening programme for depression.[31] The review assessed the accuracy of questionnaire-based screening tools, the effectiveness of early interventions for mild depression, and the potential of collaborative care models within existing healthcare systems. It identified the PHQ as the most commonly used screening tool and noted that its PPV in a general population would likely result in a high number of false positives. Whilst the effectiveness of drug and psychological treatments was well established, evidence on the natural course of the condition and the value of early intervention for mild or subthreshold depression was limited. The review also highlighted a lack of randomised controlled trials (RCTs) showing that screening reduces morbidity or mortality. As a result, the UK NSC did not recommend routine population screening for depression.

In 2020, the UK NSC commissioned an evidence summary[43] to build on the findings of the 2014 review.[31] This evidence summary considered 3 key questions exploring the longer term (beyond 2 years) outcomes of interventions to treat milder forms of depression, evidence from RCTs on the effect of screening for depression, and whether the clinical detection and management of depression was currently well implemented in the UK. The review found a lack of evidence on the long-term impact (beyond two years) of treating milder forms of depression to prevent progression to more severe illness. Only three studies reported outcomes beyond 12 months (only one of which had a 2-year follow up) and their data were inconsistently reported, with heterogeneous results and no clear evidence that interventions for subthreshold or mild depression reduced the risk of developing more severe depression. The review also identified two RCTs that reported on effectiveness of screening for depression on reducing mortality and morbidity. The studies were small, varied in methods, lacked consistent conclusions, had high risk of bias, and raised concerns about their applicability to UK population screening. Finally, the review found limited and uncertain evidence from four UK-based studies, which were insufficient to determine how well depression is currently detected and managed; overall, they suggested lower-than-expected use of psychological therapies and variable, generally low treatment compliance.[43] In response to this review, the UK NSC upheld the recommendations of the previous 2014 review not to recommend a systematic population screening programme for depression.

2 Decision questions

The decision questions for the current evidence map are as follows:

Question 1. What is the volume and type of evidence that treatment for people diagnosed with mild or subthreshold depression through screening (population and targeted) leads to better outcomes in the longer term (beyond 2 years) than treatment for people diagnosed with mild or subthreshold depression through other methods?

Question 2. What is the volume and type of evidence that screening (population and targeted) adults for depression reduces mortality and morbidity?

3 Methods

The review will be undertaken using the UK NSC assessment approach for an evidence map. The purpose of the evidence map is to support decision making on whether there is sufficient evidence to justify commissioning a more in-depth review.

3.1 Identification and selection of studies

3.1.1 Search strategy

Systematic literature searches will be undertaken using terms for depression to identify evidence for both review questions simultaneously. The search strategies were developed in MEDLINE (OVID) using terms relating to screening and depression. The search strategies will include study design filters to limit the search results to systematic reviews, trials and cohort studies. The search strategies will be limited to adults and humans. Search results will be limited to those in the English language only and published from August 2019 to date. The search used in the previous UK NSC review on this topic[43] was used as a starting point. After discussion with the UK NSC, it was agreed to run a narrow search. This will be supplemented with citation searching of included studies. The search will be adapted for EMBASE (OVID), PsycInfo (OVID) and The Cochrane Database of Systematic Reviews (Wiley). An example of the search strategy that may be used in the major databases is provided in Appendix 1.

The retrieved papers will be imported into Endnote and deduplicated. The remaining records will be uploaded to Covidence[45] for title and abstract screening.

3.1.2 Study eligibility criteria

Studies that satisfy the criteria listed in Table 1 will be included.

Table 1. Inclusion and exclusion criteria for the key questions

Key question	Inclusion criteria							Exclusion criteria
	Population	**Target condition**	**Intervention**	**Comparator**	**Outcome**	**Study type**	**Geographic focus**	
1. What is the volume and type of evidence that treatment for people diagnosed with mild or subthreshold depression through screening leads to better outcomes in the longer term (beyond 2 years) than treatment for people diagnosed with mild or subthreshold depression through other methods?	Adult populations	Mild or subthreshold depression*	Any of the following interventions provided to people diagnosed through screening: • Non-pharmacological interventions (e.g. psychosocial interventions, cognitive behavioural therapy, physical activity) • Pharmacological intervention • Combination of the above	Any of the following interventions provided to people diagnosed through other non-screening methods: • Non-pharmacological interventions (e.g. psychosocial interventions, cognitive behavioural therapy, physical activity) • Pharmacological intervention • Placebo • Combination of the above • No treatment	• Severity of depression • Resolution of depression (mild, moderate and severe) or only exhibiting subthreshold depressive symptoms • Study reported outcomes for interventions Note. Where such data are available, outcomes will be stratified by age, sex, ethnicity and other population or targeted characteristics	• Systematic reviews** • RCTs • Prospective observational studies (cohort studies and case control studies) • Studies with a follow up of ≥1 year	• No restriction	• Groups that would not be within the remit of a nationally organised screening programme (e.g. people who cannot be identified systematically such as those experiencing homelessness) • Postnatal and antenatal depression (as they are covered in separate UK NSC reviews) • Studies with a follow up of <1 year • Non-English language • Published before August 2019 • Case series, case reports, retrospective and single-arm studies • Conference abstracts/posters • Clinical trial registry records
2. What is the volume and type of evidence that screening (population and targeted) adults for depression reduces	Adult populations	Depression	Offer of screening	No offer of screening	• Depression symptoms, e.g. measures of functionality • Severity of depression, e.g.	• Systematic reviews** • RCTs • Prospective observational studies (cohort	• No restriction	• Groups that would not be within the remit of a nationally organised screening programme (e.g. people who cannot be identified

Key question	Inclusion criteria							Exclusion criteria
	Population	**Target condition**	**Intervention**	**Comparator**	**Outcome**	**Study type**	**Geographic focus**	
mortality and morbidity?					less severe (subthreshold, mild), more severe (moderate, severe) • Chronic depression • Quality of life measures • Mortality • Reported rate of depression Note. Where such data are available, outcomes will be stratified by age, sex, ethnicity and other population or targeted characteristics	studies and case control studies) • Studies with a follow up of ≥1 year		systematically such as those experiencing homelessness) • Postnatal and antenatal depression (as are covered in separate UK NSC reviews) • Studies with a follow up of <1 year • Non-English language • Published before August 2019 • Case series, case reports, retrospective and single-arm studies • Conference abstracts/posters • Clinical trial registry records

RCT, Randomised controlled trial; UK, United Kingdom

*NICE guideline [NG22] noted that the classification of depression severity has moved away from the traditional 4 categories (subthreshold, mild, moderate and severe) to classification as less severe (encompassing subthreshold and mild) or more severe (encompassing moderate and severe) depression

** Systematic reviews will be defined as per Centre for Reviews and Dissemination Database of Abstract of Reviews of Effects (DARE) criteria.[46]

3.2 Review strategy

Titles and abstracts of records identified by the searches will be assessed against the eligibility criteria by one reviewer through the Covidence platform.[45] All decisions will be made by humans.

We will note the number of unclear studies by question following title and abstract assessment and decide in collaboration with the UK NSC whether full text assessment is required based on volume of included studies for each of the review questions. If full text review of unclear studies is agreed on, full text articles will be assessed by one reviewer. If full text assessment is not required, we will report the number of unclear records as potential additional studies and include them in the references section.

3.3 Data extraction strategy

Data will be extracted by a single reviewer. For each question, data will only be extracted from the highest priority studies (see section 3.5). The following data will be extracted (but not limited to): citation details, study details including country, study design, population details, intervention, comparator, outcomes including symptoms, rates and severity of depression, progression or resolution of symptoms, morbidity or mortality and patient reported or quality of life outcomes. Outcomes will be stratified by age, sex, ethnicity and other population or targeted characteristics where available. Non-prioritised studies will not undergo data extraction. Numbers of deprioritised studies will be reported for each review question and full citations will be presented in the reference section.

3.4 Assessment of study quality

No assessment of study quality will be undertaken.

3.5 Methods for reporting

Depending upon the volume of evidence identified, we may need to prioritise publications for data extraction to keep the scope of the review manageable. For prioritised studies we will report type of study, study objectives, study PICO and reported outcomes as per our inclusion criteria in Studies that satisfy the criteria listed in Table 1. We will report a list of non-prioritised studies. If prioritisation is needed, we will use a combination of the following criteria:

- *Study duration*: Studies with a follow-up period of ≥2 years will be prioritised over those with follow-up of only >1 year.
- *Geographical focus:* We will prioritise UK studies over studies from the following: G7 countries, the European Economic Area, Switzerland, Australia, and New Zealand. If there is a paucity of data from these countries, then we will consider countries from the rest of the world.
- *Study design*: We will prioritise studies in randomly assigned populations and systematic reviews over other study designs. We will define “systematic reviews” using the DARE criteria[46]

4 Patient and Public Involvement

No PPI activity will be undertaken as part of this evidence map.

5 Timescale

The timeline for the evidence map is shown in Table 2.

Table 2. Project timeline

	November (week commencing)				***December (week commencing)***					***January (week commencing)***			
	3rd	*10th*	*17th*	*24th*	*1st*	*8th*	*15th*	*22th*	*29th*	*5th*	*12th*	*19th*	*26th*
Update protocol													
Title/abstract sift													
Retrieval of studies													
Prioritisation of studies													
Meeting with UK NSC													
Data extraction													
Write up													
Run references													
Submit draft report to UK NSC													
Report being reviewed by UK NSC													
Meeting with UK NSC													
Revise report following feedback from UK NSC													
Submit report to UK NSC													

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7 Competing interests of authors

Chris Stinton is a member of the UK NSC's Adult Reference Group. None of the other authors declared any competing interests for the project.

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9 Appendix

Search strategies

Searches run: 26/08/2025

Ovid MEDLINE(R) ALL <1946 to August 25, 2025>

1 Depression/ 17240
2 dysthymic disorder/ 1191
3 depress*.ti,kf. 257248
4 1 or 2 or 3 327001
5 Mass Screening/ 122318
6 (screen* or test* or detect*).ti,kf. 1396850
7 5 or 6 1438655
8 4 and 7 13125
9 (exp Child/ or Adolescent/ or exp Infant/) not exp Adult/ 2271100
10 8 not 9 12128
11 exp animals/ not humans/ 5365572
12 10 not 11 11000
13 (201908* or 201909* or 201910* or 201911* or 201912* or 2020* or 2021* or 2022* or 2023* or 2024* or 2025*).ed,dt,da. 10084064
14 12 and 13 3829
15 systematic review*.ti. 303528
16 systematic review.pt. 299700
17 15 or 16 380516
18 randomized controlled trial.pt. 643789
19 exp randomized controlled trial/ 645808
20 controlled clinical trial.pt. 95726
21 randomized.ab. 704889
22 placebo.ab. 261178
23 clinical trials as topic/ 205549
24 randomly.ab. 466966
25 trial.ti. 343594

26 or/18-25 1706900
27 "Epidemiologic Studies"/ 9698
28 (epidemiologic* adj (studies or study)).ti,ab,kf,kw. 103894
29 Case-Control Studies/ or Matched-Pair Analysis/ 355110
30 (case adj2 control).ti,ab,kf,kw. 181339
31 cohort studies/ or longitudinal studies/ or follow-up studies/ or prospective studies/ or retrospective studies/ 2779260
32 (cohort or longitudinal or prospective).ti,ab,kf,kw. 1170925
33 27 or 28 or 29 or 30 or 31 or 32 3669895
34 17 or 26 or 33 5260370
35 14 and 34 1129