

Screening Medical Patients for Depression: Lessons  
from a National Program in Cancer Clinics

Jane Walker, Marta Wanat, Josephine Fielding,  
Paul Martin, Ariane Petit, Katy Burke, Michael  
Sharpe



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**Title:** SCREENING MEDICAL PATIENTS FOR DEPRESSION: LESSONS FROM A NATIONAL PROGRAM IN CANCER CLINICS

**Authors:**

Jane Walker PhD<sup>1</sup>, Marta Wanat PhD<sup>1</sup>, Josephine Fielding MA<sup>1</sup>, Paul Martin MSc<sup>2</sup>, Ariane Petit MA<sup>1</sup>, Katy Burke MBBS<sup>1</sup>, Michael Sharpe MD<sup>1</sup>

**Affiliations:**

<sup>1</sup> Psychological Medicine Research, University of Oxford Department of Psychiatry, Warneford Hospital, Oxford, UK.

<sup>2</sup> University of Edinburgh Department of Psychology, 7 George Square, Edinburgh, UK.

**Email addresses of authors:**

jane.walker@psych.ox.ac.uk, marta.wanat@psych.ox.ac.uk, jcf33@doctors.org.uk, pwmartin.msc@gmail.com, ariane.petit@psych.ox.ac.uk, katharine.burke@psych.ox.ac.uk, michael.sharpe@psych.ox.ac.uk

**Correspondence:** Prof Michael Sharpe MD, Psychological Medicine Research, University of Oxford Department of Psychiatry, Warneford Hospital, Oxford, OX3 7JX, UK.  
Email: michael.sharpe@psych.ox.ac.uk

**ABSTRACT****Background**

Screening has been recommended to improve the identification of depression in medical patients. There is therefore a need for useful practical information on how to successfully implement large scale depression screening in medical clinics.

**Objective**

To describe the practical lessons learned from our experience of implementing a large scale depression screening program in cancer clinics throughout Scotland, UK.

**Method**

Reflective review based on the experience of the screening team and records of the iterative development of the program.

**Findings**

Systematic screening for depression in patients with medical illnesses can be delivered in clinics as long as the program is well designed. Design issues include ensuring the engagement of staff and patients, implementing efficient two stage screening processes and effectively managing workflow and quality assurance.

**Discussion**

Screening has the potential to offer a solution to the well documented problem of missed depression and other psychiatric diagnoses and to thereby improve patient care if closely linked to treatment provision.

**KEYWORDS**

Depression, screening, integrated, medical clinics

## INTRODUCTION

Depression is a common complication of chronic medical conditions such as diabetes, heart disease and cancer (1-5). This comorbid depression substantially worsens patients' quality of life, reduces adherence to medical treatments and increases healthcare costs (6-8). But it is often unrecognized and consequently untreated (9-11).

Screening programs have been recommended as a way to improve the recognition of comorbid depression (12-14). The purpose of screening is to systematically identify people with a specific illness in order to offer them appropriate treatment for it (15).

Operationalising this definition suggests that depression screening will be successful if the program: (a) reliably identifies those patients who have depression, (b) achieves high uptake among clinic attenders, and (c) links to an effective treatment program.

We designed a two-stage depression screening program (called the Symptom Monitoring Service, SMS) that aims to meet these criteria. In the first stage of screening, patients complete a depression symptoms questionnaire using a touchscreen computer whilst waiting for their clinic appointment. Those patients with a high score on this questionnaire are automatically listed for the second stage of screening; a brief semi-structured interview, administered to them over the telephone after they have returned home, to determine whether they meet the diagnostic criteria for major depression (16). Patients found to have major depression are then briefly reviewed by a clinician to offer appropriate treatment. We iteratively refined this program over a ten year period in light of ongoing feedback from clinicians and patients, implemented it in cancer clinics throughout Scotland, UK, and successfully screened more than 100,000 patient visits.

In this paper we aim to share the lessons learned from our experience of running the screening program. We have reviewed our records of these experiences and reflected on the changes we made to the screening program over time to provide the summary presented here. Our main aim is to provide the reader with useful practical information on how to successfully implement large scale depression screening in medical clinics.

## **A. RELIABLY IDENTIFYING PATIENTS WHO HAVE DEPRESSION**

### **TWO STAGES OF SCREENING ARE REQUIRED**

The purpose of depression screening is to identify patients who require treatment for major depression. Our experience is that a clinical interview is essential to make a diagnosis that is sufficiently robust to justify enrolling patients in a treatment program. However interviewing all of the very large number of patients who attend medical clinics is simply not feasible. We therefore developed a two-stage process. In the first stage we used a patient-rated questionnaire to determine which clinic attenders were 'at risk' of having depression and required the second stage: a telephone-delivered diagnostic interview (see Figure 1). This two-stage process is similar to other screening procedures, for example breast cancer screening, which uses mammography in its first stage to determine which patients require a clinical examination and biopsy.

[Figure 1 here]

Approximately one quarter of patients had a high score on the first stage questionnaire and were listed for a diagnostic interview (17). The prevalence of major depression varied between different cancer groupings: it was highest in patients with lung cancer (13%), followed by gynaecological cancer (11%), breast cancer (9%), colorectal cancer (7%), and genitourinary cancer (6%) (9). For information on the other findings of the screening program, including the prevalence of other symptoms (e.g. fatigue or pain) the reader may wish to refer to additional publications (17-21).

#### AN EFFECTIVE TEAM IS VITAL

A successful screening program requires a team of people working together to ensure that patients with depression are identified. We found that an effective screening team required: (a) screening assistants to deliver both stages of the screening program (in our program these were general nurses and non-clinically trained psychology graduates); (b) a screening team manager to coordinate the work across multiple clinics (in our program a senior nurse), (c) consultation-liaison psychiatrists to provide training and clinical supervision for screening staff and to be always available to make more complex assessments when needed (e.g. of patients who expressed suicidal thoughts), and (d) data and information technology (IT) specialists to set up and maintain a system to underpin the screening procedures. We also found that having senior and influential clinicians to champion the program was important.

#### QUESTIONNAIRES ARE BEST DELIVERED IN THE CLINIC

In the first stage of screening, we asked patients to complete the questionnaire using touchscreen computers whilst waiting for their clinic appointment. This procedure achieved

more than an 80% uptake (9). We learned that this approach had a number of advantages over asking patients to complete the questionnaire at home in advance of their appointment: (a) it made the screening an integral part of the clinic visit and gave patients the opportunity to ask questions about the program; (b) it ensured that patients could get help to complete the questionnaire if they needed it; (c) it meant that the staff (described above) helping patients to complete screening could review patients' questionnaire responses in real time and contact the program's psychiatrists immediately if needed to address severe distress or suicidal thoughts. We studied whether administering the questionnaire in the clinic, which is a potentially stressful setting, as opposed to in the patient's own home, substantially inflated the score and found that it did not (22).

#### DIAGNOSTIC INTERVIEWS CAN BE DONE BY TELEPHONE

Diagnostic interviews were done over the telephone to the patient's home. The interviews could potentially have been carried out by the medical specialists during the clinic visit. However, there were two major challenges to achieving this. First, medical specialists do not have the training to do this and their appointments are typically short and focussed on treatment of disease. Having dedicated trained staff to do the interviews addressed this problem. Second, we found that patients do not want to stay after their medical consultation to be interviewed in the clinic which is typically busy with little private space. The screening program staff therefore did the diagnostic interview over the telephone after the patient had returned home.

In order to achieve valid and reliable diagnoses we used a semi-structured clinical interview (the major depression section of the Structured Clinical Interview for the 4<sup>th</sup> edition of the Diagnostic and Statistical Manual of Mental Disorders) (23). We implemented quality assurance of these interviews to ensure the validity of the diagnoses obtained (see below). Telephone-delivered interviews have been found in previously published studies to have good agreement with face-to-face SCID interviews (24). We have also studied their acceptability to patients and found this to be good (25).

#### PRAGMATISM IS IMPORTANT IN DECIDING HOW OFTEN TO SCREEN

Depending on the clinic type and the individual's situation, patients may attend only once or many times. For patients who attend the clinic repeatedly, completing screening at every visit may be unnecessarily burdensome, but screening only once, for example at their first visit, will miss depression that develops later. Screening at times of increased vulnerability such as finding out news about diagnosis, changing treatment modality or when being discharged from the clinic has been recommended by some (26, 27). However, we found such a strategy to be impractical for a large scale program as there is often clinical uncertainty before the consultation about which patients would fall into the group requiring screening. In order not to miss any potential cases of depression we therefore offered screening routinely to patients each time they attended the clinic, unless they had been screened in the last month.

#### QUALITY ASSURANCE PROCEDURES ARE ESSENTIAL



Screening programs involve a team of people screening large numbers of patients.

Procedures are therefore necessary to maintain quality and safety. We achieved this by: (a) developing standard operating procedures detailing the practical steps to be taken in delivering all the screening processes (e.g. for stage one screening, for conducting telephone interviews, and for conducting suicide risk assessments) and (b) setting up a training and supervision system for screening staff. Training was done in our program by consultation-liaison psychiatrists with expertise in diagnostic interviewing and experience in training non-psychiatric staff. Training included workshops, role plays, didactic teaching and listening to audio-recordings of completed interviews. We assessed the competence of screening assistants at training completion using scored role plays of common scenarios. Psychiatrists also led weekly supervision sessions as well as being on hand to assess and manage complex situations including suicidal intent. We found that digitally audio-recording all the diagnostic interviews (with the patient's permission and stored as part of their medical record), and reviewing them in supervision was an excellent way to provide both ongoing training and quality assurance.

## **B. ACHIEVING HIGH UPTAKE**

### **SCREENING QUESTIONNAIRES SHOULD BE CHOSEN CAREFULLY**

There is a substantial literature evaluating the psychometric properties of depression questionnaires in different medical populations (28-30). We learned that in order to maximise the uptake of screening it was also essential to consider which questionnaire would be most acceptable to patients attending medical (as opposed to psychiatric) clinics.

We found, for example, that the more specific depression questions of the Patient Health Questionnaire-9 (PHQ-9), especially item-9 (which asks about suicidal ideation), led to many more refusals and verbal complaints from patients, than the Hospital Anxiety and Depression Scale (which does not ask about suicidal ideation) (31, 32).

#### CLINICIANS MUST BE ENGAGED WITH THE SCREENING PROGRAM

We found that patients were more likely to take part in depression screening if their clinicians appeared to be engaged with the program. The engagement of busy clinicians can be challenging: they may view depression screening as something separate from the medical care they provide or may be concerned that the program will interfere with the smooth running of their busy clinics. We increased clinicians' interest in the screening program by adding questions about other symptoms (such as pain, fatigue and nausea as well as clinic-specific symptoms such as sexual problems in a prostate cancer clinic) to the depression questionnaire. This made the questionnaire more broadly useful to clinicians, enabling them to identify patients with other problematic symptoms as well as depression. We were also able to use the screening program database to produce reports for individual clinicians, for example of the proportion of patients using the program in each clinic and their overall symptom profiles.

#### INTEGRATING SCREENING INTO USUAL MEDICAL CARE MAXIMISES PARTICIPATION

The integration of screening into the medical clinics is an important way of maximising uptake. Asking patients about other symptoms was not only helpful for their clinician but also normalized the process and prevented the screening from being viewed as a separate

'mental health' endeavour. Practical integration into the clinic processes is especially helpful. For example, we found that some patients were reluctant to move away from the main waiting area to complete screening as they were anxious that they might miss their consultation, so we introduced wireless touchscreen devices, which patients could use at their seat anywhere in the waiting area as a supplement to screens in fixed booths.

#### INFORMATION TECHNOLOGY IS NEEDED TO MANAGE THE WORKFLOW

Screening is a population-based activity and requires a management system if it is to run efficiently. The large patient numbers and the need to track progress over multiple visits requires a dedicated information management system. This system needs to: identify all patients attending the clinic in order to offer them screening, list those with a high score at stage 1 to ensure that they are contacted for a diagnostic interview, and produce reports for clinicians. It also needs to store large amounts of data including: patients' demographic and contact details, information from questionnaire responses and diagnostic interviews, practical notes about patients' use of the screening program to aid future contacts (for example 'hard of hearing' or 'needs help with touchscreen due to arthritis') and information about the relevant clinics (for example, location, local clinic procedures, lists of patients expected to attend). A tailor-made database that functions as a workflow-based system, is accessible from all relevant clinical areas and automates as many procedures as possible is, in our experience, the optimal solution. Our screening program database formed one part of the hospitals' electronic medical records system and was developed at a time when paper records were also commonly used in the cancer clinics. We suggest that the screening program database would ideally be part of or linked into the electronic medical record.

### C. LINKING TO AN EFFECTIVE TREATMENT PROGRAM

#### TREATMENT PROGRAMS NEED TO BE EFFECTIVE AND ABLE TO COPE WITH LARGE NUMBERS

The purpose of screening is to identify people with a specific condition so that they can be offered appropriate treatment. It is well established that depression screening alone is insufficient to improve patient outcomes (33). And we know that a simple referral, for example to primary care, may also not be effective (34). We found that linking screening with a collaborative care treatment program is a good way to provide effective depression treatments to large numbers of patients (35). Collaborative care is a systematic approach to the management of depression and other psychiatric disorders in medical settings, which provides patients with specialty-level care within the context of medical treatment through the use of a team-based approach. As we were screening for depression in cancer clinics, we used a treatment program specifically designed for patients with cancer. This is an intensive, systematic, and integrated collaborative care program called 'Depression Care for People with Cancer' (DCPC) which has been found in randomized trials to be substantially more effective than usual care (34, 36-39). Similar collaborative care approaches have been found to be effective for patients with depression comorbid with other medical conditions (40).

#### A SUCCESSFUL PATHWAY MUST BE CREATED FROM SCREENING TO TREATMENT

We found that the transfer of patients from their contact with the screening team to the treatment program was a critical step. A diagnosis of depression was often not initially accepted or fully understood, risking a failure to engage with treatment. We therefore took

great care at the end of the telephone diagnostic interview to prepare those patients with depression for contact with the treatment team. The key step was to explain the need for a more detailed assessment by a named person who would be in contact. It also proved essential to include a major educational and engagement element to the beginning of treatment, using verbal and written material as well as a video in which simulated patients explained the nature of depression as well as the process and potential benefits of treatment. We refer interested readers to a detailed description of the linked depression treatment program (39).

## DISCUSSION

Depression is common in patients with medical conditions and is treatable, but it is not identified as frequently as it should be. Over recent years there has been increasing interest in improving identification by routine screening. In order to be successful, screening programs must reliably identify those patients with depression, achieve high uptake among clinic attenders and be linked to an effective treatment program. Delivering screening is not a simple task and we have offered lessons learned from our own experience delivering screening in a large number of cancer clinics.

Whilst we hope that these lessons are of value to others, we also recognize limitations in our experience: First, there is a potential need for different strategies to achieve successful implementation in settings other than ours. Second, changes in technology will drive new methods of screening; for example there is already potential to develop and diversify the

way that screening is delivered for patients not attending clinics, through web-based, smart phone or telephone based systems.

The system we describe focused primarily on the identification of patients with major depression. There were a number of reasons for this focus: (1) there is clear evidence that major depression adversely affects patients' quality of life and the cost of their care; (2) there are effective treatments for depression; (3) screening for major depression identifies a manageable number of patients who will require treatment (around 10 percent). Screening could, however, be expanded to include other conditions, such as anxiety disorders, substance misuse and minor depression. Such an expansion would require additional training for screening staff and also the availability of linked treatment programs for each of these disorders. However if achieved such a system would provide more comprehensive integrated care for the patients attending medical clinics.

## CONCLUSIONS

Over recent years there has been increasing interest in improving the identification of depression in patients with medical illnesses by routine screening. Systematic screening for major depression can offer a solution to the problem of missed diagnoses and in turn improve patient care. It is especially important in the context of the current need to integrate mental and physical healthcare (41).

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**Figure 1: Flow through a two stage depression screening program**

