

*A quality improvement project*

# Recognizing depression in cancer outpatients

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A year-long effort at Kansas City Cancer Center (KCCC) to educate oncology nurse practitioners in recognizing and managing depressive disorders and provide them with a simple test instrument for screening cancer outpatients resulted in a greater than twofold improvement in the recognition of depression and a nearly threefold increase in the rate at which patients who had lost interest in everyday activities were identified. Clinical depression was diagnosed in 16% of patients before the initiative and in 21% of patients afterward. The KCCC's anti-depression initiative spurred implementation of a demonstration project that incorporates a comprehensive approach to treating mental health disorders in patients with cancer. Proper implementation will require changes in the practice management process that facilitate the diagnosis of clinical depression and initiation of its treatment in the community oncology setting.

Adjustment disorders—inappropriate responses to stressful events or situations accompanied by anxiety, depression, or both—and major depression are common psychiatric conditions in patients with cancer and can have a serious impact on their quality of life.<sup>1,2</sup> Estimates of the prevalence of depression among cancer patients range from 1% to 42%.<sup>3</sup> The sheer size of this range suggests a lack of uni-

formity in measurement and methodology.<sup>3</sup> Under recognition of depression has been identified as a problem in the clinical oncology setting, and, as a result, screening is recommended to detect depressive disorders in cancer patients.<sup>4</sup> Improvement in the diagnosis and treatment of depressive disorders in this patient population can lead to improvement in treatment outcomes, better patient care, and increased patient satisfaction with the quality of care received—as well as more appropriate utilization of healthcare resources.

## KEY POINTS

Under recognition of depression in cancer patients affects treatment outcomes, patient management, and satisfaction with treatment.

Educating nurse practitioners to recognize depression and use a simple screening tool at each visit doubled the rate of recognition.

The initiative taken by these nurses and nurse practitioners led to a comprehensive pilot program for diagnosing and treating mental health disorders in patients with cancer.

## Improving recognition of depression through education

The Kansas City Cancer Center (KCCC) quality anti-depression committee was formed in

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December 2002, based on the belief that depression is not being adequately recognized in the cancer patient. A retrospective chart review was performed on patients receiving chemotherapy in January 2003, using 80 charts from 5 KCCC locations. The goal was to assess charts for recognition of depression, loss of interest in activities, and diagnosis of depression.

*Streamlining assessment*

Following the January audit, a pa-

tient questionnaire was developed for the oncology nurse practitioner to streamline the assessment of depression. This questionnaire is based on *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) criteria<sup>4</sup> for depression (Figure 1) and includes **standard visual analog scales for fatigue** and pain assessment. The nurse practitioner administers the tool at the first visit and on subsequent visits with each patient. The anti-depression group then held a roundtable discussion

with an internist who is also a psychiatrist to review individual cases and share ideas for recognizing and managing depression in cancer patients.

*Educating the staff*

Between January and December 2003, the anti-depression committee worked to coordinate staff participation in educational sessions that reviewed signs and symptoms of depression based on DSM-IV criteria, the design and implementation of diagnostic tools, and medication and behavioral therapy options. Therapists were invited to these sessions to provide an overview of psychosocial intervention to the oncology staff. In addition, community organizations that offer behavioral health services free of charge or at a minimal cost to patients met with the staff to review available support services and therapies. Oncology nurse practitioners and pharmacists conducted educational sessions at each cancer center, and an **antidepressant comparison table** was developed as a convenient prescribing tool. Questions regarding loss of interest in activity and feelings of depression were added to the patient questionnaire.

To assess the impact of this assessment tool and educational efforts, in December 2003 the committee performed a second chart review of 80 patients receiving chemotherapy at 4 KCCC sites.

*Results*

The baseline chart review performed in January 2003 documented evaluation for depression in 21 patients receiving chemotherapy (26%), evaluation for loss of interest in activities in 20 patients (25%), and diagnosis of depression by a clinician in 13 patients (16%).

The chart review following intervention in December 2003 documented evaluation for depression in 47 patients receiving chemotherapy (59%), evaluation for loss of interest in

**Patient Questionnaire**

Please fill this out completely before seeing the nurse practitioner. The purpose of this questionnaire is to be sure that we address issues that are important to you. The nurse practitioner will discuss this questionnaire with you when you see her.

1. Do you experience loss of interest or loss of pleasure in activities?  Yes  No
2. Are you feeling down, depressed, or hopeless?  Yes  No
3. How are you coping right now?  Well  Good  Poorly
4. Are you having pain?  Yes  No
5. If you are having pain, where does it hurt? \_\_\_\_\_
6. Where would you rate your pain? Circle the face or the number.
7. What kind of pain medication are you taking and how often do you take it? \_\_\_\_\_
8. How is your appetite?  Good  Fair  Poor
9. Do foods taste good?  Yes  No
10. Are you experiencing fatigue?  Yes  No
11. How much time do you spend in bed?
 

6-8 hours  9-11 hours  12-15 hours  > 15 hours

Please describe any new problems you have had since your last visit: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**FIGURE 1** Patient history questionnaire used by Kansas City Cancer Center for assessing depression, pain, and fatigue.

activities in 57 patients (71%), and diagnosis of depression by a clinician in 17 patients (21%). Thus, the KCCC anti-depression initiative resulted in a greater than twofold improvement in the recognition of depression and a nearly threefold improvement in identifying patients who had lost interest in everyday activities.

#### *Partnership formed*

In late 2003, the KCCC anti-depression initiative led to a partnership between KCCC and Mid-America Coalition on Health Care (MACHC) to formalize the recognition and management of depression in cancer outpatients. MACHC is an employer-driven nonprofit organization with a record of over 27 years of healthcare collaboration among major employers, physicians, medical societies, hospitals, health plans, universities, city and state governments, labor, public health agencies, and pharmaceutical companies in the Kansas City region. The mission of MACHC is to improve the health of employees and their families, promote employee and community wellness and illness prevention, and develop strategies and initiatives for containing business healthcare costs.

#### **Screening demonstration project**

The oncology depression screening demonstration project was specifically designed by KCCC and MACHC to test the feasibility of changing a busy oncology practice's daily workflow by incorporating a depression screening process for all newly diagnosed cancer patients. Similar projects have been designed for obstetrics/gynecology and cardiology offices. This was achieved by analyzing the current workflow and, over time, incorporating the necessary changes. A pilot program was implemented in one of the six KCCC ambulatory care sites.

The project has four goals:

- implement a global approach toward effective treatment of mental

health disorders that are comorbid with cancer;

- determine the practicality of and change the practice management process to facilitate the diagnosis of depression and the initiation of anti-depression treatment in an oncology practice;

- apply well-known, clinically validated diagnostic and treatment techniques for depression into "real world" oncology practice in a manner consistent with the provision of cancer treatment; and

- influence community, regional, and national physician practice patterns by leveraging the outcomes of this demonstration project.

#### *Phase I: assessment and planning*

The first phase of the demonstration project included a meeting of committee professionals, which included two oncology nurse practitioners, a radiation oncologist, a radiation therapy nurse pharmacist and two members of MACHC. The group reviewed screening tools and ultimately

chose the Patient Questionnaire PHQ-9 (Figure 2), a nine-question, self-rating adult depression-screening instrument based upon DSM-IV criteria, for the demonstration project. The PHQ-9 is a validated, self-reporting tool,<sup>5,6</sup> and its brevity and ease of use make it a valuable resource, especially in busy, non-mental health practices, such as KCCC's.

#### *Phase II: workflow design and tool development*

After selection of the PHQ-9 test instrument, a flow chart of the depression screening process was developed (Figure 3). The diagram illustrates the critical decision-making points in the depression screening workflow for both the physician and nurse practitioner.

At the beginning of the process, the patient completes a validated, reliable two-question screen for depression (PHQ-2) incorporated into KCCC's patient questionnaire. A positive response to either question prompts the clinician to ask seven additional depression screening questions, there-

## About Kansas City Cancer Center

KANSAS CITY CANCER CENTER (KCCC) is a full-service medical oncology, hematology, and radiation oncology practice made up of a team of physicians, nurse practitioners, and registered nurses, most of whom are recognized by the Oncology Nursing Certification Corporation as oncology certified nurses. KCCC is an affiliate of US Oncology, Inc., a practice management company. This association provides the practice with management, facilities, administration, technical support, and ancillary services necessary to establish and maintain a fully integrated network of cancer care.

KCCC is dedicated to one all-embracing goal—providing the highest quality care for cancer patients. Our

approach to fighting cancer is based on a belief that patients do best when they receive care close to home, family, and friends; when they have an entire team of medical specialists and support staff working together on their behalf; when they have access to the latest research, technologies, treatment programs, and drug therapies; and when their medical community supports cancer strategies, early detection initiatives, and post-treatment programs and activities.

Currently, KCCC provides cancer care at 11 sites in the Kansas City area. Three of these locations offer integrated oncology services, including medical hematology/oncology, diagnostic imaging, and radiation oncology.

**Patient Questionnaire — PHQ-9**  
Nine Symptom Checklist

Patient name: \_\_\_\_\_ Date: \_\_\_\_\_

1. Over the past 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Feeling down, depressed, or hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Trouble falling/staying asleep, sleeping too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Feeling tired or having little energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Poor appetite or overeating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Trouble concentrating on things, such as reading the newspaper or watching television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Thoughts that you would be better off dead or of hurting yourself in some way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all    Somewhat difficult    Very difficult    Extremely difficult

This questionnaire may be photocopied for use in the physician office. © Pfizer Inc Total score: \_\_\_\_\_

**Scoring of the PHQ-9**

- If there are at least four checks in the “More than half the days” or “Nearly every day” columns (including questions 1 and 2), consider a depressive disorder. Add scores to determine severity.
- Scoring—add up all checked boxes on PHQ-9: 1–4 = minimal depression; 5–9 = mild depression; 10–14 = moderate depression; 15–19 = moderately severe depression; 20–27 = severe depression.
- For every checked box:
  - Not at all = 0
  - Several days = 1
  - More than half the days = 2
  - Nearly every day = 3
- Major Depressive Syndrome* is suggested if:
  - Of the 9 items, 5 or more are checked as at least “More than half the days”
  - Either item #1 or #2 is positive, that is, at least “More than half the days”
- Other Depressive Syndrome* is suggested if:
  - Of the 9 items, 2, 3, or 4 is checked as at least “More than half the days”
  - Either item #1 or #2 is positive, that is, at least “More than half the days”
- PHQ-9 scores can also be used to plan and monitor treatment. To score the instrument, tally each response by the number value under the answer headings (not at all = 0; several days = 1; more than half the days = 2; nearly every day = 3). Add the numbers together to total the score on the bottom of the questionnaire. Interpret the score by using the guide below:

Score	Action
≤ 4	The score suggests the patient may not need depression treatment.
5–14	Physician uses clinical judgment about treatment, based on patient’s duration of symptoms and functional impairment.
≥ 15	Warrants treatment for depression, using antidepressant medication, psychotherapy, and/or a combination of treatment.

**FIGURE 2** Nine-item patient questionnaire (PHQ-9) and scoring guide for assessing clinical depression.

by completing the full PHQ-9 nine-item questionnaire.

Specific PHQ-9 scoring criteria are then used to assist the physician or staff with taking the most appropriate course of action—antidepressant medication, referral to a mental health provider, or both.

The flow chart then describes a process for timely follow-up, such as scheduling a subsequent appointment, recommending a “watch and wait” period, or reassessing.

*Phase III: depression screening workflow in practice*

The depression screening workflow can be characterized in the following steps:

*Step 1: identification of depression and initial course of action.* Upon arrival, the patient completes the patient questionnaire and returns it to the nurse practitioner. If the patient does not respond positively to either of the two screening questions for depression, no further action is taken. However, if the patient answers positively to either question, he or she is then asked to complete the PHQ-9 questionnaire.

Points are assigned according to the patient’s responses, and a total score is tabulated. Cutoff scores from the PHQ-9 questionnaire determine the likelihood of a diagnosis of clinical depression. As the number of depressive symptoms and their intensity increase, so does the PHQ-9 total score. The nurse practitioner reviews the patient’s score and determines what further action, if any, is needed by reviewing the following PHQ-9 clinical recommendations:

*A PHQ-9 score ≤ 4* suggests minimal depression, and no further action is taken.

*A PHQ-9 score of 5–14* indicates moderate depression and a need for therapeutic intervention. After reviewing the score with the patient, the nurse practitioner uses his or her clinical judgment to determine the

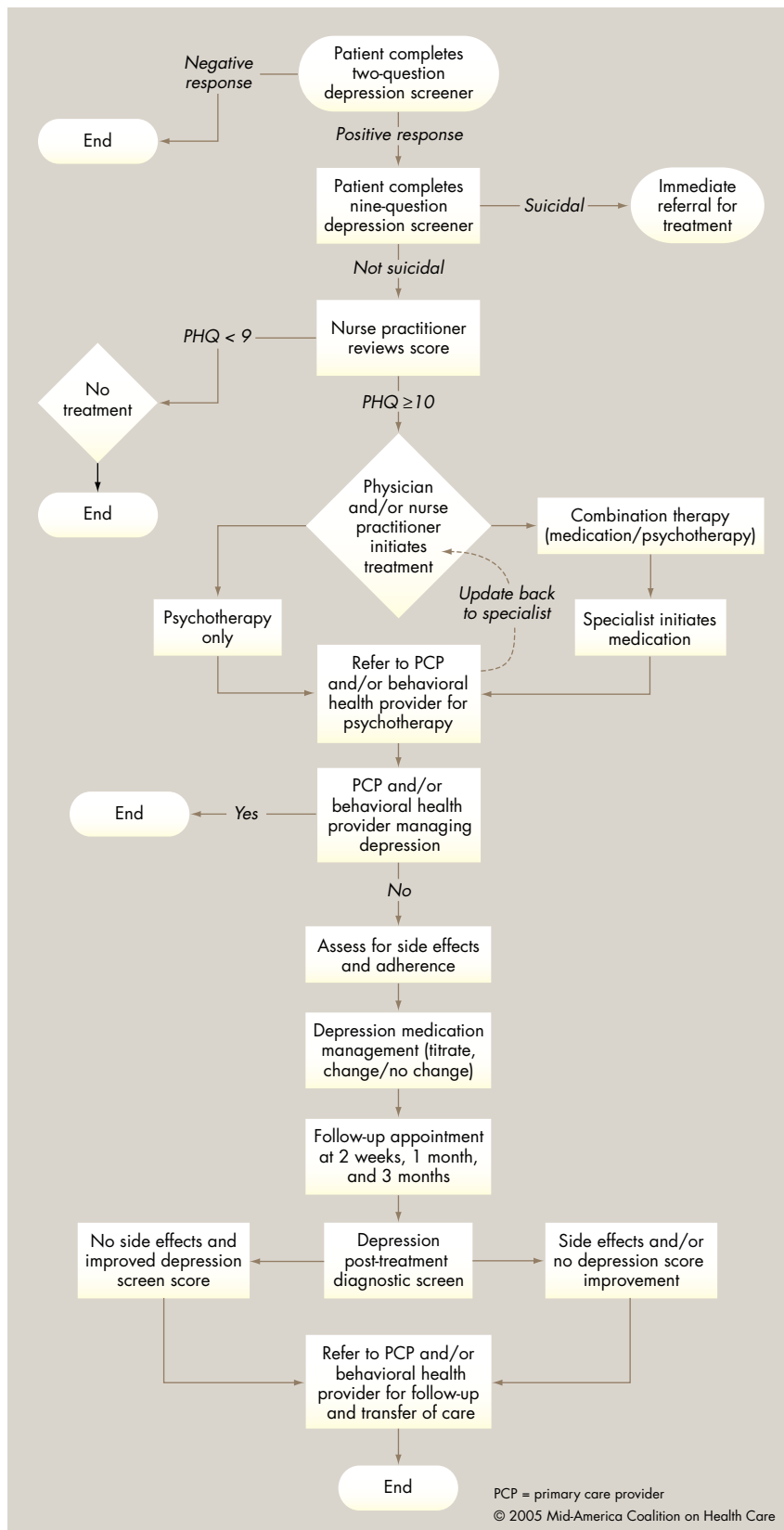


FIGURE 3 Flow chart for recognizing and managing depression in cancer outpatients.

next course of action, as follows:

- If the patient is suicidal, he or she is immediately referred for treatment.
- No immediate treatment is given and the patient’s primary care physician is notified (where appropriate) or treatment is initiated. Treatment may include antidepressant medication or psychotherapy or both, depending upon the duration of symptoms and degree of functional impairment. If antidepressant medication is initiated, the primary care physician is notified.
- If psychotherapy only is recommended, the patient is referred to a primary care physician and/or behavioral health specialist for treatment. Where appropriate, the patient’s managed care mental health provider is called upon to coordinate behavioral health services.
- If antidepressant medication and psychotherapy are recommended, the oncologist or nurse practitioner initiates medication and refers the patient to either a primary care physician and/or behavioral health specialist. Where appropriate, the patient’s managed care mental health provider is enlisted to coordinate behavioral health services.

A PHQ-9 score  $\geq 15$  indicates the existence of moderate to severe depression warranting antidepressant treatment. If the patient is suicidal, treatment is immediately secured. Once again, according to the workflow diagram, the nurse practitioner reviews the patient score with the patient and uses his or her clinical judgment to determine the next course of action, which might include immediate referral to a primary care physician to initiate treatment with antidepressant medication, psychotherapy, or a combination of both, based on symptom duration and the degree of functional impairment. The specific actions he or she takes are the same as those described previously for treating milder depression.

*Step 2: medical record documentation.* Prior to each subsequent patient

visit, a copy of the patient questionnaire is placed in the patient's chart. Upon check in, the screener is given to the patient by the front-desk staff. This gives the patient adequate time to complete the questionnaire before seeing the care provider.

*Step 3: patient follow-up.* If treatment or referral for depression was initiated, the patient is scheduled to return in 2–4 weeks for a follow-up visit with the oncology nurse practitioner or physician. During that follow-up, if the patient indicates he or she was being followed by his or her primary care physician and/or behavioral health specialist for depressive symptoms, no further action is taken. If the patient reports experiencing side effects, the nurse practitioner or physician can decide to titrate the patient's antidepressant dosage, switch to another antidepressant drug, make no changes, or refer the patient to the primary care physician or a behavioral health specialist.

If the patient is still experiencing side effects and/or has failed to respond to two different types of antidepressant medication, he or she is referred to a primary care physician or psychiatrist for follow-up.

For a table comparing various antidepressant medications and their effects, see [www.CommunityOncology.net/journal/0206.html](http://www.CommunityOncology.net/journal/0206.html).

### Work in progress

A pilot program testing the feasibility of the suggested *Depression Screening Work Flow in Practice* algorithm was initiated at one of six ambulatory care sites in the KCCC system. The patient population being

tracked includes 60 patients, half of them receiving radiation therapy and the other half chemotherapy. The patients are being tracked on flow sheets by a radiation oncology nurse and two oncology nurse practitioners in an effort to evaluate the process of recognition and management of depression. It will allow the committee to make recommendations for changes in the process before it is implemented on a larger scale at all KCCC outpatient sites.

### Conclusion

The excessive costs, personal suffering, and high prevalence of major depressive disorders in the general population necessitate careful screening. Vigilant testing for depression is critical in the oncology setting as well. KCCC's anti-depression initiative led to a partnership with MACHC that seeks to develop an approach to the recognition and treatment of depressive disorders that often accompany cancer. The goal is to develop a new model for integrating clinically proven techniques for diagnosing and treating depression into community-based oncology practice.

The significance of recognizing depression and early and effective management in the cancer patient cannot be overemphasized. Recognizing and effectively screening for depression among cancer patients promise to reduce the burden of suffering and may improve treatment in the fight against cancer.

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