Performance Measure for Improvement in Depression at Completion of Cardiac Rehabilitation (CR)

MEASURE DESCRIPTION:

The percentage of patients with a positive depressive screen who experience a decrease in depressive symptoms as measured by changes in the PHQ-9, BDI-II, PRFS or HADS after completion of CR

DEFINITONS:

Assessment of change in depressive symptoms by one or more levels of severity during CR may be performed in one of the following four ways:

1. Reduction of one or more levels of severity in the Patient Health Questionnaire (PHQ-9) score from baseline to completion of CR. Scores for levels of severity are: mild (5-9), moderate (10-14), moderately severe (15-19) or severe (20-27).
   - The PHQ-9 is a 9 item tool based on a 4-point Likert type scale which screens for depressive symptoms and evaluates change in depressive symptoms. Patient time to complete is <5 minutes. This scale contains an item which assesses suicidal ideation. This tool is available in the public domain. [http://www.integration.samhsa.gov/images/res/PHQ%20-%20Questions.pdf](http://www.integration.samhsa.gov/images/res/PHQ%20-%20Questions.pdf)

2. Reduction of one or more levels of severity in the Beck Depression Inventory-II (BDI-II) from baseline to completion of CR. Scores for levels of severity are: mild (14-19), moderate (20-28) or severe (29-63).
   - The BDI-II is a 21 item tool based on a 4-point scale which screens for depressive symptoms and evaluates change in depressive symptoms. Patient time to complete is 5-10 minutes. This test includes an item which evaluates suicidal ideation. This tool is commercially available online for purchase by a qualified psychosocial provider. [http://www.pearsonclinical.com/psychology/products/100000159/beck-depression-inventoryii-bdi-ii.html](http://www.pearsonclinical.com/psychology/products/100000159/beck-depression-inventoryii-bdi-ii.html)

3. Reduction of one or more levels of severity in the depression scale of the Psychosocial Risk Factor Survey (PRFS) from baseline to completion of CR. Scores for levels of severity are: mild (T-score 54-59), moderate (T-score 60-65) or severe (T-score 66 -80).
   - The PRFS is a 70 item tool that screens for depressive symptoms as well as anxiety, anger/hostility, social isolation, and emotional guardedness. Its depression scale was validated against the BDI-II. It is based on a 4-point Likert type scale. Patient time to complete is 15 minutes. It is commercially available online. [http://prfs1.com/](http://prfs1.com/)

4. Reduction of one or more levels of severity in the depression scale of the Hospital Anxiety and Depression Scale (HADS) from baseline to completion of CR. Scores for levels of severity are: mild (8-10), moderate (11-15) or severe (16-21).
   - The HADS is a 14 item tool which includes both depression and anxiety subscales. This instrument is based on a 4-point Likert type scale. Patient time to complete is 5-10
minutes. It is commercially available online. [http://www.gl-assessment.co.uk/products/hospital-anxiety-and-depression-scale-0](http://www.gl-assessment.co.uk/products/hospital-anxiety-and-depression-scale-0)

The baseline assessment will take place at intake. The follow-up evaluation will occur upon completion of CR. The patient is defined as having completed CR when he/she has undergone a final, formal discharge assessment session and updated treatment plan.

**NUMERATOR:**

The number of patients whose depression screening score is at least in the Mild Range at intake to CR who reduce symptom severity by at least one level by the time they complete the CR program.

**DENOMINATOR:**

The total number of patients who complete a depression screening instrument upon intake and completion of CR, and whose depression screening score is at least in the Mild Range at intake to CR.

*Denominator Exclusions*

- Inability to complete the depression instruments with reasonable accommodations
  - Examples of Reasonable Accommodations:
    - Staff member reads instrument instructions and questions to the patient
    - Staff member enters patient’s responses to test items to the instrument
  - Presence of comprehension limitation that precludes completion of the instrument
  - Lack of availability of the tool used by the CR program in a language understood by the patient

**PERIOD OF ASSESSMENT:**

Up to twelve months

**ATtribution:**

CR program staff

**SOURCES OF DATA:**

Medical record or other database (e.g., administrative, clinical, registry)

**Rationale:**

The American Heart Association has identified post ACS depression as a risk factor for additional adverse cardiac events and all cause and cardiac mortality. ¹ AACVPR recommends that cardiac rehabilitation programs screen for depression and that that properly trained staff ask specifically about depression symptoms during the intake interview.² The prevalence of depression among CAD patients (15%-20%) is three times greater than the rates of the general population.³, ⁴ There appears to be a dose response relationship between level of depression and cardiac related prognosis in patients with CHD.⁴ Even minimal depressive symptoms have been associated with increased mortality following an MI.⁵ For example, Bush and colleagues evaluated depressive symptoms with the BDI ⁶, a reliable and valid tool that has been extensively used to screen for and assess for depressive symptom severity. The BDI score
ranges from 0-63. Scores < 10 reflect no or minimal depressive symptoms. Scores from 10 to 18 fall within the mild to moderate range. Scores from 19-29 reflect moderate to severe symptoms and the severe level includes scores from 30-63. The investigators found higher mortality rates in MI patients with more elevated BDI scores. Specifically, the mortality rates of patients with BDI scores of (0-3), (4-9) and (10+) were 2.6%, 17.1%, 23.3%, respectively (p<.02). As such, even patients scoring in the subclinical range experienced significantly higher rates of mortality.

Depressed medical patients are three times less likely to follow medical recommendations than non-depressed patients. More specifically, depressed cardiac patients are less adherent to treatment recommendations following an MI, which is a critical issue for cardiac rehabilitation patients who are presented with myriad lifestyle modification recommendations aimed at risk factor reduction.

The literature regarding the impact of cardiac rehabilitation on depression is emerging and the evidence thus far is promising. More research, including randomized controlled clinical trials investigating the effects of cardiac rehabilitation on depression are needed. Moreover, cardiac rehabilitation consists of multiple components which individually or in combination may reduce depression, such as cardiovascular exercise and stress management. Evidence is emerging around the benefits of cognitive behavioral therapy (CBT), problem solving and pharmacotherapy in reducing depression in the CHD population.

Rigorous evaluation of validity and reliability of depression measures should be conducted in order to determine appropriate screening tools to assess depression. Furthermore, measures that reflect responsiveness to change may more clearly capture the impact of cardiac rehabilitation on reducing depression symptoms. The inventories that we propose for inclusion for cardiac rehabilitation programs seeking basic certification are listed in the sources of data section. These measures include the Patient Health Questionnaire (PHQ-9), The Beck Depression Inventory II (BDI-II), The Psychosocial Risk Factor Survey (PFRS) and the Hospital and Anxiety Depression Scale (HADS).

Additionally, the depression screen may yield a total score below the mild range but which may contain a positive response to a suicidal question. Regardless of the total score on the depression screen, immediate follow up by qualified staff to further assess and manage suicidal risk is required by CR programs and this screening does not replace the clinical assessment and intervention required by CR programs to provide appropriate care for patients endorsing suicidal ideation.

In developing performance measures, the committee recognizes that there are differences among cardiac rehabilitation programs and staffing and that a portion of cardiac rehabilitation patients may present with no depressive symptoms. Also, even a small clinically significant decrease in depression symptom severity is beneficial to cardiac rehabilitation patients. As a result, the committee recognizes that not all CR patients will be able to achieve clinically significant improvements in depression and have defined the threshold for improvement to achieve this performance measure accordingly.

REFERENCES:

8. Ziegelstein, R., Fauerbauch, J., Stevens, S., et al. Patients with depression are less likely to follow recommendations to reduce cardiac risk during recovery from a myocardial infarction. Archives of Internal Medicine 2000; 160: 1818-1823.


23. Smarr KL Measures of Depression and Depressive Symptoms: The Beck Depression Inventory (BDI), Center for Epidemiological Studies-Depression Scale (CES-D), Geriatric Depression Scale (GDS), Hospital Anxiety and Depression Scale (HADS), and Primary Care Evaluation of Mental Disorders-Mood Module (PRIME-MD) Arthritis Care & Research 2003; 49: S134-146.