

## **Depression Screening in Patients with Coronary Heart Disease: Does the Evidence Matter?**

**Running Head:** Depression Screening in Heart Disease

Brett D. Thombs, PhD<sup>1,2</sup>; Roy C. Ziegelstein, MD.<sup>2</sup>

<sup>1</sup>Lady Davis Institute for Medical Research, Jewish General Hospital, Montréal, Québec, Canada;

<sup>2</sup>Departments of Psychiatry; Epidemiology, Biostatistics, and Occupational Health; Medicine; Educational and Counselling Psychology; and Psychology and School of Nursing, McGill University, Montréal, Québec, Canada; <sup>3</sup>Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, USA.

**Address for Correspondence:** Brett D. Thombs, PhD; Jewish General Hospital; 4333 Cote Ste Catherine Road; Montréal, Québec, Canada H3T 1E4; Tel (514) 340-8222 ext. 5112; E-mail: [brett.thombs@mcgill.ca](mailto:brett.thombs@mcgill.ca).

In 2008, an American Heart Association (AHA) Science Advisory [1] recommended routine depression screening of all patients with coronary heart disease (CHD), urging that the opportunity to screen “should not be missed” (p. 1771). The AHA also recommended suicide screening, indicating that all patients who answer “yes” to a suicide-related item on the Patient Health Questionnaire-9 should be immediately referred for evaluation.

The authors of the AHA Science Advisory did not conduct a systematic review of the evidence on the benefits and harms of routine depression screening, and they noted that no evidence that screening leads to improved outcomes in cardiovascular populations was available at that time. In the 5 years since the Science Advisory was published, no new evidence has emerged to support this recommendation, and the wisdom of investing important health care resources on routine depression screening in cardiovascular care has therefore been questioned [2,3].

Recently, a National Heart Foundation of Australia (NHFA) consensus statement [4] recommended routine depression screening for all Australian CHD patients at first presentation and again 2-3 months after a CHD event, with consideration given to yearly screening thereafter. The consensus statement authors suggested that depression screening would be more likely to benefit patients in the context of “comprehensive care,” but did not define this or require that such care be available for screening to be done. They also recommended that consideration “be given to screening the partner or spouse of these patients for depression...”

The authors of the NHFA consensus statement did not conduct a systematic review or cite any evidence that screening CHD patients or their partners would improve health outcomes. They did not refer to two existing systematic reviews on depression screening in cardiovascular care settings [2,3], both of which concluded that there is not evidence that depression screening would benefit CHD patients, and they did not attempt to address concerns about the viability of depression screening in cardiovascular care settings that were raised in the reviews [2,3].

Dr. Evan Ackermann, the Chair of the Royal Australian College of General Practitioners (RACGP) National Standing Committee for Quality Care, on the other hand, did raise concerns about the lack of evidence for the recommended screening program. “If there is no evidence of the impact of screening, we have to question whether we should be screening at all,” said Dr. Ackermann was quoted as stating. “It’s better to have a high index of suspicion and treat each case on its merits rather than have formal screening” [5].

### **Would Depression Screening Benefit Patients with CHD?**

Is there evidence that depression screening of all CHD patients would improve depression outcomes with little risk of harm as suggested by the AHA Science Advisory and the NHFA consensus statement? That screening for suicide would reduce suicide attempts? That partners and spouses of heart patients would benefit from depression screening?

The Australian RACGP does not appear to think so. The 2012 RACGP guideline on depression screening in primary care [6] indicates that it is not clear whether depression screening would improve health outcomes and, if so, whether it would be cost-effective. Health care professionals in primary care settings are generally much better prepared to manage mental health problems than clinicians in specialty settings. Yet, the RACGP specifies that depression screening in primary care should only be considered when there is specific staff support, in addition to the primary care physician, to provide depression care, case management, and follow-up services.

Depression screening guidelines in the United States [7] similarly specify that screening in primary care should only be considered in settings where specific resources dedicated to depression care are available. Canadian primary care guidelines also recommended this approach until recently [8]. Revised guidelines, which were published by the Canadian Task Force on Preventive Health Care (CTFPHC) in 2013 [9], however, recommend against screening for depression in primary care. The CTFPHC cited the lack of evidence of benefit from randomized controlled trials (RCTs) and a concern

about the high rate of false positive screens that would likely occur. The CTFPHC also raised concerns about possible harms that would occur to some patients who are screened and the use of scarce health care resources for an intervention without evidence of benefit.

No RCTs have found that patients not already diagnosed with depression who are screened for depression have better depression outcomes than similar patients who are not screened for depression when comparable treatment resources are provided to depressed patients in both groups [10]. A 2008 Cochrane systematic review assessed trials in primary care settings that have attempted to test whether depression screening would improve depression outcomes and reported that depression symptom scores were virtually the same among patients screened and patients not screened (5 RCTs; standardized mean difference = -0.02, 95% confidence interval -0.25 to 0.20) [11]. In the UK, depression screening among patients with CHD and diabetes was incentivized in primary care settings from 2006 to 2013 as part of the UK's Quality and Outcomes Framework, but a study found that almost 1000 patients needed to be screened for each new diagnosis of depression [12]. As a result, the 2013/2014 UK Quality and Outcomes Framework no longer includes depression screening.

No trials have shown that screening for suicide reduces suicide attempts in any setting, and primary care guidelines in Australia, the United States, and Canada all recommend against it. We do not know of any organization, other than the NHFA, that has recommended screening family members of medical patients for depression, and there are no clinical trials to support this recommendation.

### **Could Depression Screening Harm Patients with CHD?**

Without evidence of benefit, the real possibility that routine depression screening would expose some patients to avoidable risks must be considered [2,3] The rate of false positive screens would be high [2,3,9,10,13] and some patients with false positive screens would be inappropriately treated in settings where there are limited resources for mental health assessment. Further, many patients who screen positive will have mild symptoms that often resolve without treatment. Indeed, the NHFA

consensus statement notes that rates of major depressive disorder of around 15% have been reported in patients after myocardial infarction or coronary artery bypass grafts and that a prevalence of more than 40% has been documented if “milder forms of depression are included.” Some of these patients already receive treatment for depression. Thus, expressed another way, if all patients with CHD are screened for depression, nearly half can be expected to screen positive, but most who screen positive will not have untreated major depressive disorder. Patients identified as possibly depressed via screening, but not otherwise, tend to have less severe symptoms. Many will not benefit from antidepressant medications [10] and yet may still experience antidepressant side effects, such as diarrhea, dizziness, dry mouth, fatigue, headache, nausea, sexual dysfunction, excessive sweating, tremors, and weight gain [14]. In addition, antidepressants may increase the risk of major bleeding, and there is evidence that these drugs can produce undesirable effects on heart rate and blood pressure [3].

The ramifications of putting the depression screening recommendations into practice in cardiovascular care settings must be carefully considered, including the idea of repeat screening 2-3 months after the initial screen and possibly yearly thereafter, as recommended by the NHFA. The NHFA bases this recommendation on evidence that depression is a CHD risk factor, and argues that depression should be treated as “any other major risk factor for CHD.” Without evidence that screening for this “risk factor” improves CHD outcomes, as it does for hyperlipidaemia, for example, this argument must be seriously questioned.

There are already many issues to address when patients with CHD are seen by health care providers. The need is now greater than ever to ensure that adding something else to an already tightly-packed office visit enhances patient well-being at a reasonable cost. This has not been demonstrated for depression screening. Given this, there is real concern that implementing depression screening could divert scarce health care resources to an intervention without demonstrated benefit and away from services of known benefit. These harms could include reducing the ability of an already strapped mental

health system to care for clearly depressed patients or limiting the availability of other services that would ideally be provided, such as behavioural interventions to promote exercise, weight loss and smoking cessation. Neither the authors of the AHA Science Advisory nor the authors of the NHFA consensus statement addressed these issues or discussed the cost of implementing depression screening in practice.

## **Conclusion**

Evidence matters. Across the globe, medical care systems are struggling to meet growing health care demands with limited economic resources. The delivery of appropriate care that addresses patient needs, but avoids interventions without demonstrated benefit, is increasingly emphasized [15]. This approach maximizes our ability to provide effective health services and limits unintentional harms to patients. Both the AHA and the NHFA should re-consider their recommendations on depression screening in light of current evidence. Instead, these organizations should provide guidance on how clinicians can provide the best possible care that addresses the needs of patients, including, a high degree of attention to possible depression.

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## **CONFLICTS OF INTEREST**

All authors have completed the Unified Competing Interest form at [http://www.icmje.org/coi\\_disclosure.pdf](http://www.icmje.org/coi_disclosure.pdf) and declare that no authors have any conflict of interest disclosures for the past 3-year reporting period.

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