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## Primary Care Screening for Dementia and Mild Cognitive Impairment

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JAMA. 2008;299(10):1132-1133 (doi:10.1001/jama.299.10.1132-b)

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### Primary Care Screening for Dementia and Mild Cognitive Impairment

**To the Editor:** In their Commentary, Dr Brayne and colleagues<sup>1</sup> raise many critical issues regarding the need to identify effective methods to screen for dementia. We suggest that this include detection of the mild cognitive impairment (MCI) syndrome, where there is objective decline in cognitive functioning. Longitudinal clinical studies indicate that participants with amnesic MCI have a substantially increased rate of progression to clinically probable Alzheimer disease.<sup>2</sup>

As the authors point out, it is extremely unusual to find reversible causes of dementia. However, many potentially reversible factors can contribute to MCI with cognitive performance that is worse than expected as a result of aging alone, such as medical illness, depression, medication adverse effects, or cardiovascular factors. Many of these may be amenable to intervention if a patient screens positive on routine testing. Moreover, nonpharmacological therapies such as psychosocial interventions have been reported as effective in improving cognitive performance in aging persons.<sup>3</sup> A negative screen for MCI can be used to reassure individuals who are concerned about their self-perceived decline in cognitive performance and confirm that they are most likely experiencing age-related changes, rather than the beginnings of Alzheimer disease or another dementia.

Two of the larger studies of normal aging vs MCI<sup>4,5</sup> have demonstrated benefits derived from screening asymptomatic individuals in a primary care setting. In both studies, more than 90% of patients identified with MCI had a progressive disorder as the underlying cause of the cognitive impairment. The potential for intervention and delaying disease progression in most of these patients argues for detection as early as possible, in the MCI stage, so that the underlying cause of the cognitive impairment can be treated when possible.

If one applied to diabetes mellitus the approach of not screening at-risk asymptomatic individuals and instead waited until symptoms developed, many of these symptoms (including neuropathy, retinopathy, nephropathy, and cerebrovascular disease) would not reverse with treatment. This would be considered unacceptable clinical practice for diabetes. We do not think that Alzheimer disease should be viewed differently, given that there is at least some substantive evidence that at-risk individuals can be diagnosed in the earliest stages and that potentially reversible factors contributing to cognitive performance declines can be further investigated and treated.

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**Financial Disclosures:** None reported.

1. Brayne C, Fox C, Boustani M. Dementia screening in primary care: is it time? *JAMA*. 2007;298(20):2409-2411.
2. Petersen RC, Doody R, Kurz A, et al. Current concepts in mild cognitive impairment. *Arch Neurol*. 2001;58(12):1985-1992.
3. Willis SL, Tennstedt SL, Marsiske M, et al; ACTIVE Study Group. Long-term effects of cognitive training on everyday functional outcomes in older adults. *JAMA*. 2006;296(23):2805-2814.
4. Shankle WR, Romney AK, Hara J, et al. Methods to improve the detection of mild cognitive impairment. *Proc Natl Acad Sci U S A*. 2005;102(13):4919-4924.
5. Trenkle DL, Shankle WR, Azen SP. Detecting cognitive impairment in primary care. *J Alzheimers Dis*. 2007;11(3):323-335.

**To the Editor:** In their Commentary, Dr Brayne and colleagues<sup>1</sup> contend that there is insufficient evidence to recommend screening for dementia in primary care. However, they acknowledge that the presence of dementia is widely missed by physicians. Professional organizations concerned with the health of older adults have called for diagnostic assessment of dementia when it is suspected.<sup>2</sup> Screening is a valid approach for determining when there is a reasonable chance that dementia is present and increasing the proportion of cases detected.

The authors summarize the kinds of data needed to address dementia screening as a matter of health policy. However, we believe that they err in their reasoning regarding its potential harms and confuse good clinical practice with questions of policy. Harms they cite, such as fear of losing a driver's license or being disqualified for health insurance, are not harms of screening but of dementia itself. Many patients with dementia should not drive for safety reasons, and insurance companies conduct their own screening procedures to qualify an individual for benefit plans. Screening only uncovers dementia and cannot be blamed for its existence or its effects.

The authors argue that primary care practitioners are already overtaxed and do not have time to screen for dementia or conduct the proper diagnostic examination if it is suspected. Useful brief dementia screening can be

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**Letters Section Editor:** Robert M. Golub, MD, Senior Editor.

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accomplished with good acceptability<sup>3,4</sup> and cost-efficiency<sup>5</sup> and requires little more effort and time than taking vital signs, which has been a routine part of primary care visits for many years. For patients with positive screening tests, the clinician's role is to verify the results, usually by conducting a few focused tests at relatively low cost—no more than good general clinical care for chronic conditions—and then decide who to refer for complete evaluation and who to observe for emergence of cognitive impairment.

The evidence we most need is not about screening but about what happens after a cognitive disorder is identified: how to adapt current specialized dementia care knowledge for primary care use, how to train physicians to be comfortable with making and disclosing a diagnosis and managing the cases of affected patients, and how to identify patients and families who require more specialized dementia services. As dementia prevalence greatly increases in the next decades, these skills, well within the scope and philosophy of primary care practice, need to be broadly implemented in health care systems.

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**Financial Disclosures:** Dr Ashford reported being a developer of screening tests for dementia for which he has not received profits and owning shares in Satoris. Dr Borson reported being a developer of the Mini-Cog, a screening test for dementia; she does not receive compensation related to the use of the Mini-Cog in clinical practice or when licensed for specific research projects but may in the future receive compensation for bulk distribution of the instrument to practitioners.

1. Brayne C, Fox C, Boustani M. Dementia screening in primary care: is it time? *JAMA*. 2007;298(20):2409-2411.

2. Ashford JW, Borson S, O'Hara R, et al. Should older adults be screened for dementia? *Alzheimers Dement*. 2007;3:75-80.

3. Borson S, Scanlan JM, Hummel J, Gibbs K, Lessig M, Zuhr E. Implementing routine cognitive screening of older adults in primary care: process and impact on physician behavior. *J Gen Intern Med*. 2007;22(6):811-817.

4. Brodaty H, Low LF, Gibson L, Burns K. What is the best dementia screening instrument for general practitioners to use? *Am J Geriatr Psychiatry*. 2006;14(5):391-400.

5. Ashford JW, Kraemer HC, Tinklenberg JR, O'Hara R, Taylor JL, Yesavage JA. Statistical and pharmacoeconomic issues for Alzheimer's screening. *Alzheimers Dement*. 2007;3:126.

**In Reply:** In our Commentary, we concluded that at present there is insufficient evidence for the systematic introduction of dementia screening in primary care and recommended that the scientific community design and conduct a randomized controlled trial that would compare dementia screening to case-finding enhancement in regard to reducing the overall societal burden of dementia.

Drs Rafii and Galasko introduce the topic of MCI. Mild cognitive impairment is a disputed and evolving concept

with variable sets of criteria and prognostic significance in population studies.<sup>1</sup> The first requirement for screening is to have a clearly defined entity, and at present MCI does not meet this criterion. In certain research settings, some of the criteria have been demonstrated to be useful, but the evidence is not sufficient for primary care.<sup>1,2</sup> Rafii and Galasko also suggest a parallel with diabetes. There is not a systematic screening program for prediabetes, and in the United Kingdom, diabetes screening itself is not currently recommended.<sup>3</sup> Only those persons at high risk are screened, and there are large studies ongoing to establish the value of more general diabetes screening.

Drs Ashford and Borson suggest that we have misread the literature regarding the harms of screening and the effectiveness of screening tools. A comprehensive utility evaluation of dementia screening and diagnosis found a high proportion of false positives, a high refusal rate of the needed diagnostic confirmation following positive screening, and an approximately \$4000 cost for each dementia case identified via screening.<sup>2</sup> By definition, screening is different from diagnosis and may lead to false-positive and false-negative findings, especially in the presence of low prevalence rates of a disease like dementia; thus, screening might lead to possible harms. A recent survey found that older adults attending primary care clinics in the United Kingdom and the United States have significant concerns about dementia screening; the UK patients were more concerned about societal stigma and emotional reaction whereas the US patients were more worried about financial impact, health insurance, and work discrimination.<sup>4</sup>

In the primary care study cited by Ashford and Borson, 500 primary care attendees were screened, but only 70% of participants approached took up the tests.<sup>5</sup> Although nearly 1 in 5 tested positive, only 20% of the patients who screened positive received any physician action.<sup>5</sup> Moreover, the screening tests proposed in the systematic review they cited<sup>6</sup> have not been applied in systematic trials of screening at the population level, including control populations with comparison of both short- and longer-term outcomes. Their suggestion of using screening as a method to improve dementia recognition is a good idea that needs to be scientifically evaluated and compared with other case finding methods.

The scientific community needs to follow the diabetes example and carry out a randomized and controlled evaluation of a population screening program for dementia over a sufficient time frame to enable firm conclusions about the nature and extent of any resultant benefit.

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**Financial Disclosures:** Dr Boustani reported being on the speakers' bureau of Pfizer and having received research grants from Pfizer and Forest Pharmaceuticals. No other authors reported financial disclosures.

- Stephan BC, Matthews FE, McKeith IG, Bond J, Brayne C; Medical Research Council Cognitive Function and Aging Study. Early cognitive change in the general population. *J Am Geriatr Soc.* 2007;55(10):1534-1540.
- Boustani M, Callahan C, Unverzagt F, et al. Implementing dementia screening and diagnosis in primary care. *J Gen Intern Med.* 2005;20(7):572-577.
- UK National Screening Committee. <http://www.nsc.nhs.uk>. Accessed January 7, 2008.
- Boustani M, Fox C, Katona C, et al. Patients' perceptions about dementia screening in the United Kingdom and the United States. *Alzheimers Dement.* 2006;2(3)(suppl 1):S587.
- Borson S, Scanlan JM, Hummel J, Gibbs K, Lessig M, Zuhr E. Implementing routine cognitive screening of older adults in primary care. *J Gen Intern Med.* 2007;22(6):811-817.
- Brodsky H, Low LF, Gibson L, Burns K. What is the best dementia screening instrument for general practitioners to use? *Am J Geriatr Psychiatry.* 2006;14(5):391-400.

## Organ Transplantation and Chagas Disease

**To the Editor:** Organ transplantation in patients with Chagas disease is one of the issues addressed by Dr Bern and colleagues<sup>1</sup> in their comprehensive review of Chagas disease in the United States. For the last 20 years, this has been a challenge for transplant teams from endemic areas. In Argentina, more than 150 transplants have been performed in recipients with Chagas disease during this period. There are no data regarding the effect of transplantation on the development of chronic Chagas disease (Chagas myocardialopathy) in long-term follow-up.

However, with systematic monitoring it has been possible to establish the diagnosis and the incidence of reactivation in organ recipients with Chagas disease: 9% to 16% in kidney,<sup>2</sup> 50% to 100% in heart transplantations,<sup>3</sup> and 17% and 40% in autologous and allogeneic hematopoietic cell transplantation.<sup>4</sup> It has also been possible to show that clinical reactivation is preceded, with some exceptions, by patent parasitemia as revealed by a positive direct Strout test.<sup>2-4</sup> Hemoculture, an indirect enrichment method, has not been useful to distinguish reactivation from low-load parasitemia. Hence, it is considered unsuitable for monitoring transplant recipients.

Polymerase chain reaction (PCR) has recently been used in clinical research, raising new diagnostic and prognostic possibilities. Two PCRs with different sensitivity have been used.<sup>3</sup> They have enabled early detection of reactivation—preceding Strout test positivity and clinical signs—and monitoring of treatment response. These findings suggest the potential utility of PCR-based strategies as predictors of parasitic load growth and of the response to treatment, which would make them suitable for pre-emptive therapeutic management.

Patients with reactivation have been treated with benznidazole (5 mg/kg/d) for 30 to 60 days.<sup>2-4</sup> Negative parasitemia has been achieved within 7 to 14 days and cutaneous and endomyocardial lesions resolved within the same time frame.<sup>2,3</sup> Close monitoring after treatment is advisable to allow for early diagnosis of relapses, which have not been documented in our patients.<sup>2-4</sup>

Trypanocidal treatment of nonimmunocompromised patients in the indeterminate phase of the infection has been shown to reduce the progression to Chagas cardiomyopathy.<sup>5</sup> This result has not been proven for immunocompromised patients. In transplant recipients the main concern is reactivation, and there is no evidence that treatment before transplantation reduces its incidence. Hence, there are no data to support recommendation of pretransplant treatment in transplant candidates with Chagas disease with a BII level of supporting evidence. Patients would still have to be monitored for reactivation. Benznidazole produces adverse events in nonimmunocompromised adults.<sup>5</sup> These effects could be more severe in patients with terminal organ failure. Hence, the risk of treating patients on the waiting list appears to outweigh its potential benefits.

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**Financial Disclosures:** None reported.

- Bern C, Montgomery SP, Herwald BL, et al. Evaluation and treatment of Chagas disease in the United States: a systematic review. *JAMA.* 2007;298(18):2171-2181.
- Riarte A, Luna C, Sabatiello R, et al. Chagas' disease in patients with kidney transplants. *Clin Infect Dis.* 1999;29(3):561-567.
- Diez M, Favaloro L, Bertolotti A, et al. Usefulness of PCR strategies for early diagnoses of Chagas' disease reactivation and treatment follow-up in heart transplantation. *Am J Transplant.* 2007;7(6):1633-1640.
- Altclas J, Sinagra A, Dictar M, et al. Chagas disease in bone marrow transplantation. *Bone Marrow Transplant.* 2005;36(2):123-129.
- Viotti R, Vigliano C, Lococo B, et al. Long-term cardiac outcomes of treating chronic Chagas disease with benznidazole versus no treatment. *Ann Intern Med.* 2006;144(10):724-734.

**In Reply:** Dr Altclas and colleagues present issues related to posttransplantation reactivation of *Trypanosoma cruzi* infection. We believe that our recommendations do not conflict substantially with their viewpoint.