Screening for Type 2 Diabetes

This is a summary and interpretation of the technical review article recently published by scientists from the Centers for Disease Control and Prevention's (CDC) Division of Diabetes Translation (DDT) on screening for type 2 diabetes.

- Position Statement: American Diabetes Association. Screening for type 2 diabetes. *Diabetes Care*. 2004 Jan;27 Suppl 1:S11-4.
- Source: Engelgau MM, Narayan KMV, Herman WH. Screening for type 2 diabetes. *Diabetes Care* 2000 Oct;23(10):1563-80.

1. What was the purpose of the technical review?

The purpose of the review was to examine the scientific evidence and policy implications for screening for undiagnosed diabetes.

2. What are the major findings from the CDC's technical review on screening for undiagnosed diabetes?

Criteria supporting screening for diabetes include

- a large and growing disease burden
- a well understood natural history
- a recognizable preclinical stage when diabetes can be diagnosed, but the person has no symptoms
- tests that are available that can detect undiagnosed diabetes in the preclinical stage.

Criteria not supporting screening include

- no definitive studies have shown that early detection and treatment reduce long-term complications.
- whether the cost of case finding and treatment are balanced in relationship to health expenditures as a whole.
- no uniform screening process has been adopted so that screening is ongoing and systematic.

The authors concluded that population-based and selective screening programs in community settings, such as outreach programs, health fairs, and shopping malls, have uniformly demonstrated low yield and poor follow-up. Such screening usually does not represent a good use of resources. Periodic screening of high-risk individuals as part of ongoing medical care may be warranted, understanding that evidence in support of this is incomplete. Questions remain about the optimal screening methods, best cutpoint measurements for a positive test to use to identify those with diabetes, and how often to screen people not at high risk for diabetes.

3. What are the review's implications for screening for undiagnosed diabetes?

Based on the results of this study, opportunistic screening can be considered by health care delivery systems. However, screening outside the clinic setting is not warranted. It is also noted that people with symptoms of diabetes and those who have clinical signs and symptoms of diabetes should be tested and diagnosed. When people have signs or symptoms that suggest diabetes, clinicians should maintain a high index of suspicion and pursue diagnostic testing. This activity is considered to be an appropriate diagnostic effort and shows good clinical care. Screening only applies to people who are truly asymptomatic.

4. How are these findings different from the American Diabetes Association (ADA) recommendations?

Currently, the ADA recommends that all adults aged 45 years and older be considered for diabetes screening by their health care provider every 3 years. The authors and others from CDC's DDT discussed the results of this study with ADA representatives and other diabetes expert groups to help develop recommendations that are consistent with these new findings. See ADA, which revised its recommendations in *Diabetes Care* 2003;26:S21-S24.

5. How was the technical review conducted?

The authors conducted a comprehensive review of the world's literature on the subject. Essential criteria required for diabetes screening to be an appropriate activity were evaluated and included the following:

1. whether the disease represents an important health problem that imposes a significant burden on the population;
2. whether the natural history of the disease is understood;
3. whether there is a recognizable preclinical (asymptomatic) stage during which the disease can be diagnosed;
4. whether treatment following early detection yields benefits superior to those obtained when treatment is delayed;
5. whether acceptable and reliable tests are available that can detect the preclinical stage of disease;
6. whether the costs of case finding and treatment are reasonable and are balanced in relationship to health expenditures as a whole, and whether facilities and resources are available to treat newly detected cases; and
7. whether screening will be a systematic ongoing process, and not merely a single one time effort.

6. What should CDC's state and territorial diabetes control programs (DPCPs) be doing in the area of screening for undiagnosed diabetes?

DPCPs should be working with health care systems, such as managed care organizations, to consider opportunistic diabetes screening as a potentially valuable measure for certain subpopulations and minorities.