

## Screening for Type 2 Diabetes Mellitus: A Cost-Effectiveness Analysis

**Hoerger, T.J., Harris, R., Hicks, K.A., Donahue, K., Sorensen, S., et al. (2004).** Screening for type 2 diabetes mellitus: A cost-effectiveness analysis. *Annals of Internal Medicine*, 140 (9):689-699.

Type 2 diabetes is a highly prevalent chronic disease causing extensive mortality and morbidity and accounting for a large share of medical expenditures in the U.S. About 9.3% of U.S. adults (approximately 19.3 million) have diabetes; 29% of these cases are undiagnosed. Although the prevalence of undiagnosed diabetes is high, it is unclear whether systematic screening for diabetes is likely to be cost-effective. Systematic screening for diabetes on a population basis is expensive, and it is not clear whether early treatment will slow the progression of the disease. No clinical trial of diabetes screening has been conducted.



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To evaluate the cost-effectiveness of screening adults for type 2 diabetes, we applied a Markov model of disease progression to simulate the lifetime diabetes-related costs and quality-adjusted life-years (QALYs) of persons with diabetes. We expanded the model to incorporate screening costs and compared two strategies: screening targeted to individuals with hypertension and universal screening. At all ages, screening targeted to individuals with hypertension was more cost-effective than universal screening. At age 55, for example, the cost-effectiveness ratio for targeted screening compared to no screening was \$34,000 per QALY, while the cost-effectiveness ratio for universal screening compared to no screening was \$361,000 per QALY.

Cost-effectiveness models are particularly useful in helping policymakers make informed decisions when clinical trials are infeasible or cannot provide useful answers in a timely manner. In this case, our analysis supports screening for diabetes among persons known to already have hypertension. Screening is beneficial among this population because persons with hypertension and diabetes receive greater benefits from intensive hypertension control than persons who have hypertension but not diabetes. Therefore, knowing diabetes status can lead to more appropriate treatment for persons with hypertension.

Link: <http://www.annals.org/cgi/content/abstract/140/9/689>