Complete Summary

Take the Fifth Annual Customer Satisfaction Survey

GUIDELINE TITLE

Screening for gestational diabetes mellitus: recommendations and rationale.

BIBLIOGRAPHIC SOURCE(S)

U.S. Preventive Services Task Force (USPSTF). Screening for gestational diabetes mellitus: recommendations and rationale. Obstet Gynecol 2003 Feb;101(2):393-5. [50 references]

COMPLETE SUMMARY CONTENT

SCOPE
METHODOLOGY - including Rating Scheme and Cost Analysis
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SCOPE

DISEASE/CONDITION(S)

Gestational diabetes mellitus (GDM)

GUIDELINE CATEGORY

Prevention
Screening

CLINICAL SPECIALTY

Endocrinology
Family Practice
Internal Medicine
Obstetrics and Gynecology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To summarize the current U.S. Preventive Services Task Force (USPSTF) recommendations on screening for gestational diabetes and the supporting scientific evidence
- To update the 1996 recommendations contained in the Guide to Clinical Preventive Services, Second Edition

TARGET POPULATION

Pregnant women

INTERVENTIONS AND PRACTICES CONSIDERED

Routine screening for gestational diabetes mellitus (GDM) using a glucose challenge test (GCT) followed by an oral glucose tolerance test (OGTT) for women who screen positive on the glucose challenge test

MAJOR OUTCOMES CONSIDERED

Key Question No. 1. What are the health consequences for mothers and infants of screening for gestational diabetes?

> For mothers, specific outcomes include perineal injuries (such as third or fourth degree lacerations), cesarean section, anesthesia risks, and pregnancy-induced hypertension (PIH).
>
> For infants, outcomes of interest include hypoglycemia that requires treatment, hyperbilirubinemia that requires treatment, brachial plexus injuries, fractures of the clavicle, admissions to special care nurseries, and stillbirth.

Key Question No. 2.What are the health consequences of untreated gestational diabetes?

Key Question No. 3. What are the accuracy and reliability of gestational diabetes mellitus (GDM) screening tests?

> In this case, accuracy is considered largely in terms of sensitivity and specificity.

Key Question No. 4. What is the efficacy or effectiveness of glycemic control or antepartum testing and surveillance, or both, in terms of maternal and infant outcomes?

> With respect to glycemia control, 4 intermediate outcomes are of interest: macrosomia, operative delivery, neonatal hypoglycemia, and neonatal hyperbilirubinemia (both by biochemical assays).

Key Question No. 5. What are the harms of screening? What are the harms of treatment?

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by the Research Triangle Institute-University of North Carolina Evidence-based Practice Center for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Companion Documents" field).

Inclusion/Exclusion Criteria for Admissible Evidence

Inclusion criteria was developed for selecting the evidence relevant to answer key questions (see Table 2 in the Systematic Evidence Review). Randomized controlled trials (RCTs) were required for direct evidence for the efficacy of screening, treatment, and harms associated with treatment. Although the evidence of the effects of treatment on intermediate outcomes (i.e., those specified for Key Question 4 - macrosomia, operative delivery, neonatal hypoglycemia or hyperbilirubinemia) was examined, studies were prioritized that included health outcomes of the types shown in the boxes on the far right of the analytic framework for both mothers and infants (e.g., maternal trauma, brachial plexus injury, treatment-requiring hypoglycemia) (see Figure 1 in the Systematic Evidence Review). For material on the sensitivity, specificity, and reliability of gestational diabetes mellitus (GDM) screening tests, it was required that articles provide data that could calculate sensitivity and specificity (if not reported directly by the article) and that the studies have used a criterion or reference standard. Any study design for articles relating to harms and costs was allowed. All searches started with exploding the term "diabetes, gestational" and then proceeded by adding further terms.

Review of the literature was guided by the key questions and these inclusion criteria. The critical literature from the 1996 USPSTF review was examined and MEDLINE and the Cochrane Library were searched for systematic reviews and relevant studies published in English between January 1, 1994 and August 30, 2002. The bibliographies of pertinent articles were also examined and experts were contacted. Studies concerning groups whose experience is clearly generalizable to the U.S. population were especially sought. Focused searches of MEDLINE from 1966 through 1994 were also conducted to identify older articles of interest.

Study Selection

The first author reviewed abstracts of all articles found in the searches to determine which ones met inclusion criteria. The second author reviewed all abstracts excluded by the first. The authors retrieved the full text of all articles not excluded by both of these reviewers.

The first author reviewed the full text of all retrieved articles against inclusion criteria and discussed all excluded articles with the second author. They included any article that either author judged to have met the inclusion criteria (see last column in Table 2 of the Systematic Evidence Review).

NUMBER OF SOURCE DOCUMENTS

Key Question 1: What are the health consequences for mothers and infants of screening for gestational diabetes? = 0

Key Question 2: What are the health consequences of untreated gestational diabetes? = 9

Key Question 3: What are the accuracy and reliability of gestational diabetes mellitus (GDM) screening tests? = 13

Key Question 4: What is the efficacy or effectiveness of glycemic control or antepartum testing and surveillance, or both, in terms of maternal and infant outcomes?
Glycemic control = 9
Antepartum surveillance = 5

Key Question 5: What are the harms of screening? What are the harms of treatment? = 9

Key Question 6: What are the costs and cost-effectiveness of screening and treatment for gestational diabetes mellitus versus not screening or not treating? = 7

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The U.S. Preventive Services Task Force (USPSTF) grades the quality of the overall evidence for a service on a 3-point scale (good, fair, or poor).

Good

Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair

Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies; generalizability to routine practice; or indirect nature of evidence on health outcomes.

Poor

Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

Note: See the companion document titled "Current Methods of the U.S. Preventive Services Task Force: a Review of the Process" (Am J Prev Med 2001 Apr;20[3S]:21-35) for a more detailed description of the methods used to assess the quality and strength of the evidence for the three strata at which the evidence was reviewed.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by the Research Triangle Institute-University of North Carolina Evidence-based Practice Center for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Companion Documents" field).

Synthesis of the Literature

The first author abstracted data from all the articles meeting inclusion criteria and entered those data into predesigned evidence tables (evidence tables appear in Appendix B of the Systematic Evidence Review). USPSTF criteria were used for judging the quality of individual studies, and both authors agreed to the final grading. Throughout the review, the authors worked closely with the USPSTF liaisons assigned to this topic.

Preparation of the Systematic Evidence Review

The authors presented an initial work plan for the Systematic Evidence Review (SER) and interim reports (including a full draft of the SER) at several meetings of the USPSTF in 2001, receiving feedback at each stage. Throughout the development of the SER, the material was also discussed with USPSTF liaisons. Finally, the draft SER was sent to multiple external peer reviewers (see Appendix A of the SER) and was revised as appropriate into this final version.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Balance Sheets
Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

When the overall quality of the evidence is judged to be good or fair, the U.S. Preventive Services Task Force (USPSTF) proceeds to consider the magnitude of net benefit to be expected from implementation of the preventive service. Determining net benefit requires assessing both the magnitude of benefits and the magnitude of harms and weighing the two.

The USPSTF classifies benefits, harms, and net benefits on a 4-point scale: "substantial," "moderate," "small," and "zero/negative."

"Outcomes tables" (similar to 'balance sheets') are the USPSTF's standard resource for estimating the magnitude of benefit. These tables, prepared by the topic teams for use at USPSTF meetings, compare the condition specific outcomes expected for a hypothetical primary care population with and without use of the preventive service. These comparisons may be extended to consider only people of specified age or risk groups or other aspects of implementation. Thus, outcomes tables allow the USPSTF to examine directly how the preventive services affects benefits for various groups.

When evidence on harms is available, the topic teams assess its quality in a manner like that for benefits and include adverse events in the outcomes tables. When few harms data are available, the USPSTF does not assume that harms are small or nonexistent. It recognizes a responsibility to consider which harms are likely and judge their potential frequency and the severity that might ensue from implementing the service. It uses whatever evidence exists to construct a general confidence interval on the 4-point scale (e.g., substantial, moderate, small, and zero/negative).

Value judgments are involved in using the information in an outcomes table to rate either benefits or harms on the USPSTF's 4-point scale. Value judgments are also needed to weigh benefits against harms to arrive a rating of net benefit.

In making its determinations of net benefit, the USPSTF strives to consider what it believes are the general values of most people. It does this with greater confidence for certain outcomes (e.g., death) about which there is little disagreement about undesirability, but it recognizes that the degree of risk people are willing to accept to avert other outcomes (e.g., cataracts) can vary considerably. When the USPSTF perceives that preferences among individuals vary greatly, and that these variations are sufficient to make trade-off of benefits and harms a 'close-call', then it will often assign a C recommendation (see the "Recommendation Rating Scheme" field). This recommendation indicates the decision is likely to be sensitive to individual patient preferences.

The USPSTF uses its assessment of the evidence and magnitude of net benefit to make recommendations. The general principles the USPSTF follows in making recommendations are outlined in Table 5 of the companion document cited below. The USPSTF liaisons on the topic team compose the first drafts of the

recommendations and rationale statements, which the full panel then reviews and edits. Recommendations are based on formal voting procedures that include explicit rules for determining the views of the majority.

From: Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations according to one of five classifications (A, B, C, D, or I), reflecting the strength of evidence and magnitude of net benefit (benefits minus harms).

A

The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians provide [the service] to eligible patients. (The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.)

B

The U.S. Preventive Services Task Force (USPSTF) recommends that clinicians provide [the service] to eligible patients. (The USPSTF found at least fair evidence that [the service] improves health outcomes and concludes that benefits outweigh harms.)

C

The U.S. Preventive Services Task Force (USPSTF) makes no recommendation for or against routine provision of [the service]. (The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms it too close to justify a general recommendation.)

D

The U.S. Preventive Services Task Force (USPSTF) recommends against routinely providing [the service] to asymptomatic patients. (The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.)

I

The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. (Evidence that [the service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.)

COST ANALYSIS

As the effectiveness of screening in improving health outcomes is uncertain, so the cost-effectiveness cannot be calculated with any precision. Some studies have examined the direct costs of screening and intensive management; others have investigated approaches to improving efficiency by targeting screening or aggressive management to women at highest risk. No randomized trials have been done to determine if the diagnosis and treatment of gestational diabetes mellitus (GDM) would reduce the outcome costs compared to those without GDM or compared to a group with untreated GDM. Without such trials, meaningful cost-effectiveness studies of screening for GDM must at least include data on the costs of the diagnostic tests as well as the costs of providing various treatments for GDM and for treating any complications of the mothers or their babies and compare them to the costs of an untreated group with GDM. No studies currently meet all of these criteria, thus, there is no good information about the differences in health care costs between screened and nonscreened women.

Obesity is a potential confounder in the literature on health care costs for women with GDM. Being moderately overweight is a risk factor for GDM; moreover, macrosomia and cesarean delivery are increased in obese mothers, as are anesthetic and postoperative complications. Also, the average cost of hospital prenatal and postnatal care is higher for overweight mothers and their infants require more admissions to neonatal intensive care units (NICUs) than do those of normal weight mothers.

Kitzmiller and colleagues, using the perspective of managed care, identified the direct costs of screening and intensive management of GDM. He also reviewed studies examining aspects of the costs of treating women with GDM. More than 50% of these costs involve surveillance such as NSTs, ultrasounds, and amniocenteses. According to 1996 reimbursement data, if weekly NSTs are started at 36 weeks gestation in diet-controlled GDM patients, the 4 NSTs would cost $652. If serial ultrasonography is started at 28 weeks gestation, 3 sonograms would cost $506. As the use of such tests have unproven benefit in well-controlled, diet-treated women with GDM, and there are no large prospective studies comparing the outcomes of monitored and unmonitored women with GDM, $1,159 could be saved if such patients were not monitored until 40 weeks gestation.

Despite these analyses, the evidence-based center staff found no clear, generalizable study from the societal perspective of the additional total costs of screening and treating GDM compared with not screening. Thus, in addition to lacking clear evidence concerning the effectiveness of screening, they also lack clear evidence of the additional cost of a strategy of screening.

From: Brody SC, Harris RH, Whitener BL, Krasnov C, Lux LJ, Sutton SF, Lohr KN. Screening for gestational diabetes. Systematic evidence review. Rockville (MD); Agency for Healthcare Research and Quality; 2003 Feb. (Systematic evidence review; No. 25) (see the "Companion Documents" field).

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Peer Review. Before the U.S. Preventive Services Task Force (USPSTF) makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft systematic evidence review to 4 to 6 external experts and to federal agencies and professional and disease-based health organizations with interests in the topic. They ask the experts to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the Task Force in memo form. In this way, the Task Force can consider these external comments and a final version of the systematic review before it votes on its recommendations about the service. Draft recommendations are then circulated for comment from reviewers representing professional societies, voluntary organizations and Federal agencies. These comments are discussed before the whole U.S. Preventive Services Task Force before final recommendations are confirmed.

Recommendations of Others. Recommendations regarding screening for gestational diabetes were discussed from the following groups: American Diabetes Association (ADA), American College of Obstetricians and Gynecologists (ACOG), and the Canadian Task Force on Preventive Health Care (CTFPHC).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations (A, B, C, D, or I) and the quality of the overall evidence for a service (good, fair, poor). The definitions of these grades can be found at the end of the "Major Recommendations" field.

The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for gestational diabetes. I Recommendation.

The USPSTF found fair to good evidence that screening combined with diet and insulin therapy can reduce the rate of fetal macrosomia in women with gestational diabetes mellitus (GDM). The USPSTF found insufficient evidence, however, that screening for GDM substantially reduces important adverse health outcomes for mothers or their infants (for example, cesarean delivery, birth injury, or neonatal morbidity or mortality). Screening produces frequent false-positive results, and the diagnosis of GDM may be associated with other harms, such as negatively affecting a woman's perception of her health, but data are limited. Therefore, the USPSTF could not determine the balance of benefits and harms of screening for GDM.

Clinical Considerations

- Better quality evidence is needed to determine whether the benefits of screening for GDM outweigh the harms. Until such evidence is available, clinicians might reasonably choose either not to screen at all or to screen only women at increased risk for GDM.

  Patient characteristics most strongly associated with increased risk for GDM include maternal obesity (usually defined as a body mass index [BMI] of 25 or more), older age (usually defined as older than 25 years), family or personal history of diabetes, or a history of GDM in a prior pregnancy. Expert groups have also identified certain ethnic groups as being at increased risk for GDM (such as Hispanic, African American, American Indian, and South or East Asian). Using all of the above criteria, however, would identify 90% of all pregnant women as being at increased risk for GDM.

- The optimal approach to screening and diagnosis is uncertain. Expert panels in the United States recommend a 50-g 1-hour glucose challenge test (GCT) at 24 to 28 weeks´ gestation, followed by a 100-g 3-hour oral glucose tolerance test (OGTT) for women who screen positive on the glucose challenge test. Different screening and diagnostic strategies recommended by the World Health Organization (WHO) are commonly used outside of North America. The American Diabetes Association (ADA) and the World Health Organization have published specific criteria for diagnosis, but the USPSTF could not determine the relative benefits of any specific approach.

Definitions:

USPSTF grades its recommendations according to one of 5 classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms).

A

The USPSTF strongly recommends that clinicians provide [the service] to eligible patients. The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.

B

The USPSTF recommends that clinicians provide [this service] to eligible patients. The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.

C

The USPSTF makes no recommendation for or against routine provision of [the service]. The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.

D

The USPSTF recommends against routinely providing [the service] to asymptomatic patients. The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.

I

The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. Evidence that [the service] is effective is lacking, of poor quality, or conflicting and the balance of benefits and harms cannot be determined.

The U.S. Preventive Services Task Force (USPSTF) grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor).

Good

Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair

Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor

Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting each recommendation is identified in the "Major Recommendations" field.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Effectiveness of Early Detection

No properly conducted randomized controlled trial (RCT) has examined the benefit of universal or selective screening for gestational diabetes mellitus (GDM) compared with no screening. The only RCT that attempted to evaluate the effects of universal versus selective screening had important methodologic and analytic flaws. The differences in the timing of screening and the treatments in the study groups make it difficult to draw any conclusions about the benefits of screening. A retrospective analysis that found similar rates of macrosomia in screened and unscreened populations cannot rule out an effect of screening, because screened women may have been at higher risk for GDM than unscreened women, and the study may not have been large enough to detect a benefit. One well-conducted prospective cohort study suggests that screening and diagnosis can reduce macrosomia but that other health outcomes were not affected. A proposed benefit of screening is that the diagnosis of GDM may lead to interventions to reduce the risk for mothers of developing diabetes later. The U.S. Preventive Services Task Force (USPSTF) found no evidence to determine whether diagnosis leads to important lifestyle changes for such women; many of the proposed interventions (eg, weight loss and exercise) could be recommended for these women on other grounds, independent of their risk for developing diabetes.

Data on the effects of diet therapy alone for treating GDM are limited. An overview of four RCTs found no significant benefits of diet, but the studies were small and had other limitations. Randomized trials have shown that adding insulin to diet therapy, compared with diet therapy alone, can reduce the incidence of macrosomia, but they have not shown improvement in other important maternal or perinatal outcomes such as cesarean delivery rates, birth trauma, or perinatal mortality. These trials are hampered by small size and lack of power for detecting small changes in more important health outcomes.

Even if screening and treatment are effective, the benefits of widespread screening as a means for preventing birth trauma due to macrosomia are likely to be small. Modeling done for the USPSTF, which assumed that treatment with insulin would reduce the risk of having an infant with macrosomia in mothers with GDM by 75%, calculated nearly 7,000 women at high risk, and 9,000 women at average risk, would need to be screened to prevent one case of brachial plexus injury. Although serious, 80% of such injuries resolve within the first year.

POTENTIAL HARMS

Potential Harms of Screening and Treatment

Data are insufficient to make conclusive statements about possible harms of screening for gestational diabetes mellitus (GDM). Screening generates frequent false-positive results requiring the inconvenience of further testing. One study raises the possibility that the diagnosis of GDM may influence provider decision-making and could increase cesarean delivery rates, despite measures taken to decrease the risk for fetal macrosomia. This study evaluated the rates of cesarean delivery related to birth weight and GDM. In this study, women who were diagnosed and treated for GDM had substantially higher rates of cesarean delivery (34%) than controls (20%) even though rates of macrosomia were comparable. In a second control group, in which clinicians were not informed that women had borderline GDM, rates of macrosomia were higher than rates among treated

women, yet cesarean delivery rates were slightly lower (30%) and other birth outcomes (lacerations) were comparable.

The data are limited and mixed as to whether the diagnosis of GDM adversely affects women's perception of their health during pregnancy. Limited data suggest that the diagnosis of GDM may have long-term effects on women's perception of their health. Potential adverse effects of treatment strategies for GDM include increased maternal starvation ketosis resulting from aggressive glycemic-lowering therapy, and infants who are small for their gestational age. Even uncommon risks are potentially important since nearly 100 women need to be treated with insulin to prevent one case of brachial plexus injury due to macrosomia. However, the magnitude of these potential harms has not been evaluated and quantified.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

Cost and Cost-effectiveness

In the absence of adequate evidence to determine whether selective or universal screening is effective in improving important health outcomes, reliable estimates of cost-effectiveness of screening are not possible. The cost-effectiveness of screening depends greatly on the unproven assumption that screening will significantly lower rates of cesarean section and birth trauma. No studies include all relevant cost information related to screening for gestational diabetes mellitus (GDM), including the costs of screening and diagnostic tests, costs of various treatments, and the costs of complications. Reliable estimates of the costs of gestational diabetes mellitus for women who are not screened are not available.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of

organized systems in most practices to ensure the delivery of recommended preventive care.

Neither the resources nor the composition of the U.S. Preventive Services Task Force equip it to address these numerous implementation challenges, but a number of related efforts seek to increase the impact of future U.S. Preventive Services Task Force reports. The U.S. Preventive Services Task Force convened representatives from the various audiences for the Guide "Put Prevention Into Practice. A Step-by-Step Guide to Delivering Clinical Preventive Services: A Systems Approach" - clinicians, consumers and policy makers from health plans, national organizations and Congressional staff - about how to modify the content and format of its products to address their needs. With funding from the Robert Wood Johnson Foundation, the U.S. Preventive Services Task Force and Community Guide effort have conducted an audience analysis to further explore implementation needs. The Put Prevention into Practice initiative at the Agency for Healthcare Research and Quality (AHRQ) has developed office tools such as patient booklets, posters, and handheld patient mini-records, and a new implementation guide for state health departments.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the Agency for Healthcare Research and Quality will make all U.S. Preventive Services Task Force (USPSTF) products available through its Web site. The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access U.S. Preventive Services Task Force materials and adapt them for their local needs. Online access to U.S. Preventive Services Task Force products also opens up new possibilities for the appearance of the third edition of the Guide to Clinical Preventive Services. Freed from having to serve as primary repository for all of U.S. Preventive Services Task Force work, the next Guide may be much slimmer than the almost 1000 pages of the second edition.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals and test results are not always centralized.

RELATED QUALITY TOOLS

- Pocket Guide to Good Health for Adults

- A Step-by-Step Guide to Delivering Clinical Preventive Services: A Systems Approach

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

U.S. Preventive Services Task Force (USPSTF). Screening for gestational diabetes mellitus: recommendations and rationale. Obstet Gynecol 2003 Feb;101(2):393-5. [50 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 (revised 2003 Feb)

GUIDELINE DEVELOPER(S)

United States Preventive Services Task Force - Independent Expert Panel

GUIDELINE DEVELOPER COMMENT

The U.S. Preventive Services Task Force (USPSTF) is a Federally-appointed panel of independent experts. Conclusions of the USPSTF do not necessarily reflect policy of the U.S. Department of Health and Human Services (DHHS) or DHHS agencies.

SOURCE(S) OF FUNDING

United States Government

GUIDELINE COMMITTEE

U.S. Preventive Services Task Force (USPSTF)

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Task Force Members: Alfred O. Berg, MD, MPH, Chair; Janet D. Allan, PhD, RN, CS, FAAN, Vice-chair; Paul Frame, MD; Charles J. Homer, MD, MPH*; Mark S. Johnson, MD, MPH; Jonathan D. Klein, MD, MPH; Tracy A. Lieu, MD, MPH*; C. Tracy Orleans, PhD; Jeffrey F. Peipert, MD, MPH*; Nola J. Pender, PhD, RN, FAAN*; Albert L. Siu, MD, MSPH; Steven M. Teutsch, MD, MPH; Carolyn Westhoff, MD, MSc; and Steven H. Woolf, MD, MPH

*Member of the U.S. Preventive Services Task Force (USPSTF) at the time these recommendations were finalized.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

The U.S. Preventive Services Task force has an explicit policy concerning conflict of interest. All members and evidence-based practice center (EPC) staff disclose at each meeting if they have an important financial conflict for each topic being discussed. Task Force members and EPC staff with conflicts can participate in discussions about evidence, but members abstain from voting on recommendations about the topic in question.

From: Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.

GUIDELINE STATUS

This is the current release of the guideline.

This updates a previously published guideline: U.S. Preventive Services Task Force. Screening for diabetes mellitus. In: Guide to clinical preventive services. 2nd ed; Baltimore (MD): Williams & Wilkins; 1996. p. 193-208.

GUIDELINE AVAILABILITY

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

Print copies: Available from the Agency for Healthcare Research and Quality (AHRQ) Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

Evidence Reviews:

- Brody SC, Harris RH, Lohr K. Screening for gestational diabetes: a summary of the evidence for the U.S. Preventive Services Task Force. Obstet Gynecol 2003 Feb; 101(2):380-92.
- Brody SC, Harris RH, Whitener BL, Krasnov C, Lux LJ, Sutton SF, Lohr KN. Screening for gestational diabetes. Systematic evidence review. Rockville (MD); Agency for Healthcare Research and Quality; 2003 Feb. (Systematic evidence review; No. 25).

Background Articles:

- Woolf SH, Atkins D. The evolving role of prevention in health care: contributions of the U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):13-20.
- Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow, CD, Teutsch SM, Atkins D. Current methods of the U.S. Preventive Services Task Force: a review of the process. Methods Work Group, Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):21-35.
- Saha S, Hoerger TJ, Pignone MP, Teutsch SM, Helfand M, Mandelblatt JS. The art and science of incorporating cost effectiveness into evidence-based recommendations for clinical preventive services. Cost Work Group of the Third U.S. Preventive Services Task Force. Am J Prev Med 2001 Apr;20(3S):36-43.

Electronic copies: Available from U.S. Preventive Services Task Force (USPSTF) Web site.

The following is also available:

- A step-by-step guide to delivering clinical preventive services: a systems approach. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2001. 189 p. (Pub. No. APPIP01-0001). Electronic copies available from the AHRQ Web site.

Print copies: Available from the Agency for Healthcare Research and Quality Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

The Preventive Services Selector, an application for Palm Pilots and other PDA's, is also available from the AHRQ Web site.

PATIENT RESOURCES

The following is available:

- The Pocket Guide to Good Health for Adults. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2003.

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site. Copies also available in Spanish from the USPSTF Web site.

Print copies: Available from the Agency for Healthcare Research and Quality (AHRQ) Publications Clearinghouse. For more information, go to http://www.ahrq.gov/news/pubsix.htm or call 1-800-358-9295 (U.S. only).

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

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