

A Comparison of Review Methods in Tobacco Prevention and Control Guidelines

David P. Hopkins, MD; Peter A. Briss, MD

Objectives: To compare methods and conclusions of selected guidelines evaluating youth tobacco interventions. **Methods:** Eight reviews were compared regarding (a) search and assessment of evidence, (b) translation into recommendations, and (c) conclusions regarding tobacco cessation among youth. **Results:** Narrative and systematic review methods were employed. Five systematic reviews adopted different (a) criteria for study inclusion, (b) methods estimating summary outcome measurements, and

(c) standards for concluding on the evidence of effectiveness. **Conclusions:** Evidence reviews provide useful summaries, conclusions, and recommendations. *Youth Tobacco Cessation: A Guide for Making Informed Decisions* provides an initial systematic review of the evidence on effectiveness of youth tobacco use.

Key words: smoking cessation, tobacco-use cessation, evidence reviews, practice guidelines, public health practice

Am J Health Behav. 2003;27(Suppl 2):S120-S131

Evidence reviews provide an increasingly important benchmark in the determination of effectiveness of population-based interventions. Although an outcome from a single study may contribute significantly to an assessment of the effectiveness of a particular intervention, evidence reviews enhance our understanding of the entire body of available evidence.

David P. Hopkins, Staff Scientist, Community Guide Branch, Division of Prevention Research and Analytic Methods, Epidemiology Program Office, Centers for Disease Control and Prevention, Portland OR. Peter A. Briss, Prevention Research Chief, Community Guide Branch, Division of Prevention Research and Analytic Methods, Epidemiology Program Office, Centers for Disease Control and Prevention, Atlanta, GA.

Address correspondence to Dr. Hopkins, Department of Human Services, Health Services, Health Promotion and Chronic Disease Prevention, 800 NE Oregon Street, Portland, OR 97232-2162. E-mail: dhh4@cdc.gov

The systematic review conducted for *Youth Tobacco Cessation: A Guide for Making Informed Decisions* (the youth guide) reported in this special issue of the *American Journal of Health Behavior* provides a timely summary of the evidence of effectiveness for interventions to reduce tobacco use among youth.¹ Recommendations from the expert panel help to address some of the significant gaps in our understanding of youth cessation interventions, and provide an initial framework for current implementation and evaluation.^{1,2}

The youth guide review represents one of many attempts to summarize important bodies of evidence within the field of tobacco prevention and control.³⁻¹¹ Although existing guidelines may address different topics and target different audiences, taken together, they demonstrate a number of important concepts, methods, and potential applications of evidence reviews and evidence-based recommendations.

This article provides a brief description of several important guidelines within the field of tobacco control and a comparison of the methods used in summarizing the evidence and developing recommendations.

Evidence Reviews

Evidence reviews can provide concise summaries of information important to public health and health care decision makers. Increasingly, evidence reviews are conducted using systematic search and evaluation methods. Reviews based on assessments of an entire body of evidence provide support for decisions regarding program direction and emphasis, and illuminate options that expand the choices available for local application.

The hallmarks of systematic reviews are (a) an effort to find all of the available evidence, (b) an attempt to evaluate the quality of the available evidence, and (c) an attempt to acknowledge or to summarize the outcomes across the body of evidence.¹²⁻¹⁵ Although investigators may disagree about the relative importance of each task and about the methods used to conduct those tasks, the decisions made for each of these steps are explicitly stated within a full methods description.

Evidence-based Recommendations

Although most reviews provide assessments or conclusions regarding the evidence, the systematic approaches increasingly adopted by reviewers have also contributed to methods for translating the evidence into recommendations.^{6,16-20} These efforts include the formal and explicit linking of the strength of the recommendation to the availability and quality of supporting evidence on effectiveness, although recent reviews have also considered additional dimensions, such as the size of effect or the harms.²⁰⁻²¹ In some cases, evidence-based recommendations are derived directly from a pooled quantitative summary across the body of evidence, such as a meta-analytic assessment.^{3,8} In other efforts, the formal recommendation is derived from a final assessment of the evidence review (either quantitative or qualitative) conducted by an expert panel or task force.^{6,11} When conclusions linked to the evidence are limited by gaps, problems, or inconsistencies in the body of evidence, some decision-making bodies permit recommen-

dations derived from expert opinion (if identified as such).^{2,8}

Strengths of Systematic Reviews

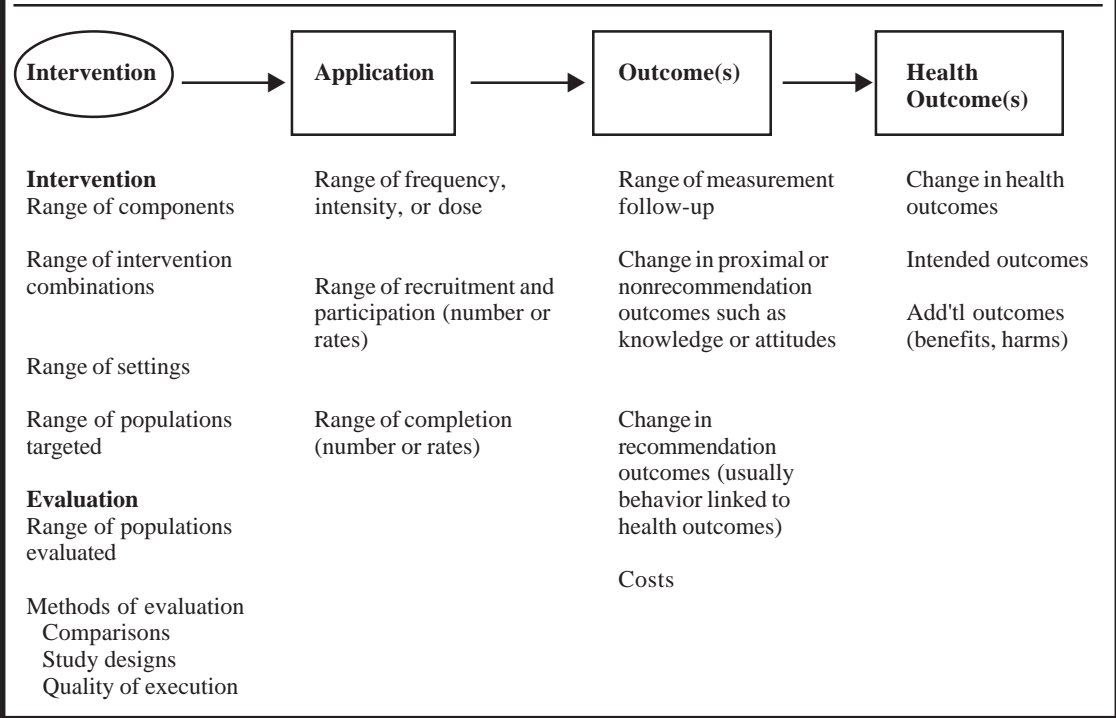
The products of a systematic review can (and should be) an extremely convenient and concise assembly of information useful to decision makers as well as to those who plan, implement, and evaluate programs. Information of value can include much more than summaries of, and conclusions on, effectiveness. Figure 1 displays some of the potentially useful information that can be summarized within a systematic review, data permitting.²²⁻²³ Although a specific description of an intervention (components, intensity, frequency of application, etc) is desirable in most intervention reviews, presenting the range of experience from across the entire body of evidence of effectiveness provides flexibility in matching interventions to local needs and resources.

Systematic reviews place an emphasis on methods that are explicit and subject to scrutiny. Adherence to explicit methods helps to reduce some threats to validity. Conclusions (or recommendations) drawn from an evaluation of the entire body of evidence reduces bias that might result from an assessment of a partial or selected sample of studies. A review of the entire body of evidence ensures that controlling for study quality, divergent experiences, or outcomes described in the literature are duly considered.

Limitations of Systematic Reviews

Systematic reviews cannot lead scientific debate or inquiry. There is always a time lag required for a body of evidence to accumulate to permit an adequate assessment (in addition, systematic reviews themselves are time- and labor-intensive efforts). Initial assessments of novel strategies or innovations must await research completion and may be limited in the strength of conclusion because the body of evidence is not yet large. However, even widespread and long-term use of an intervention does not guarantee a body of evidence adequate for assessment. Although systematic reviews can highlight gaps in the evidence on effectiveness and help establish research priorities, these gaps often make it impossible to formulate evidence-based conclusions. Finally, all reviews are subject to potential bias created by the selective submission or

Figure 1
Information That May be Summarized and Evaluated
Across a Body of Evidence



publication of evidence.

Reviews evaluate the evidence of effectiveness based primarily on intervention studies. This process may not identify deficiencies in our understanding of the relationships between an intervention approach, the content, intensity or timing of the effort, and the targeted condition or behavior. Because a focus on intervention studies alone may not shed light on limitations in one or more of these critical components of an effective effort, many reviews include a team or panel of topic area experts and begin the review by developing a conceptual approach to the subject.^{5,8,9,11}

Systematic Reviews and Program Priorities

Although systematic reviews provide an opportunity to accumulate and summarize a great deal of information of use to decision makers and programs, the primary focus of most reviews is to ad-

dress the evidence on effectiveness (ie, Is this intervention effective in achieving the health outcomes of interest?). This evidence does not, in most cases, establish priorities for program selection and implementation. Evidence that interventions A, B, and C are all effective, for example, does not necessarily determine which intervention is more or most effective in any specific set of circumstances. Reviews may provide decision makers with a range of intervention options, but they do not replace the need to understand local circumstances and to choose interventions that meet local needs, preferences, values, and resources.

Implementation

As described above, systematic reviews can also summarize information useful in the selection and implementation of interventions. Although secondary to the determination of effectiveness, the presence or absence of “how-to” informa-

tion can influence the adoption of recommended strategies. Providing a “one-stop resource” (review + recommendation + how-to-implement) may assist in both the dissemination and use of the guideline and in the adoption of recommended interventions.

Summary of Selected Guidelines

The *Youth Tobacco Cessation Guide* joins a number of guidelines available to assist tobacco prevention and control efforts in communities and health care systems.²⁴ A selection of reviews focused on youth or on tobacco-use cessation are briefly described below and provide a range of approaches for comparison.

Youth Tobacco Cessation: A Guide for Making Informed Decisions (2003).^{1,2}

The *Youth Guide* includes (a) a systematic review of the evidence on effectiveness of interventions to increase and improve tobacco-use cessation among youth, (b) a set of recommendations from an expert panel informed by the results of this review, and (c) specific advice on implementation and evaluation.

The Guide to Community Preventive Services: Interventions to Reduce Tobacco Use and ETS Exposure (2001).^{11,25}

The tobacco chapter for the *Guide to Community Preventive Services* (the community guide) includes systematic reviews of 14 interventions appropriate for communities and health-care systems.²⁵ Evidence on effectiveness for each intervention review is summarized and translated into recommendations by the Task Force on Community Preventive Services based on established rules.¹¹

Treating Tobacco Use and Dependence: Clinical Practice Guideline (2000).⁸

Treating Tobacco Use and Dependence (the clinical practice guideline) is a comprehensive, systematic review of the evidence on effectiveness of clinical and health-care system interventions to treat persons who use tobacco products. For many of the interventions reviewed, recommendations were based on pooled summary estimates using meta-analytic techniques. In a few reviews, recommendations were based on conclusions from the guideline panel. Most of the evidence on effectiveness identified in this review evaluated cessation interventions in adult tobacco users.

Cochrane Collaboration (various reports).³ The Cochrane Collaboration is an international coalition of research cen-

ters conducting systematic reviews of the evidence of effectiveness on a wide variety of clinical and public health topics. Cochrane reviews adhere to a standardized protocol including the generation of pooled summary estimates using meta-analytic techniques, when appropriate. Currently, a total of 28 systematic reviews of clinical and population-based interventions to reduce tobacco use or exposures to secondhand smoke have been completed (and periodically updated). One review is included here for comparison.²⁶ Six additional reviews are in progress, including one on tobacco cessation interventions for young people.²⁷

Reducing Tobacco Use: A Report of the Surgeon General (2000),⁹ also Preventing Tobacco Use Among Young People: A Report of the Surgeon General (1994).⁴

In the last decade, the periodic reports of the Surgeon General have expanded from updates on the prevalence and health consequences of tobacco use to include comprehensive reviews of the evidence regarding tobacco prevention and control strategies. Each report is organized and presented as a series of narrative reviews without a full methods description; however, the reviews present a detailed and complete evaluation of the literature.

Best Practices for Comprehensive Tobacco Control Programs (1999).⁷

Best Practices was designed as a guide to the effective components of state-level comprehensive tobacco prevention and control programs. Nine key component areas were identified in evaluations of existing state tobacco-prevention and -control programs. Short narrative reviews of the literature and evaluations of effectiveness of 2 comprehensive state programs (California and Massachusetts) provided evidence to support the programmatic recommendations.

Guide to Clinical Preventive Services: Report of the U.S. Preventive Services Task Force (1996).⁶

The *Guide to Clinical Preventive Services* (the clinical guide) provides systematic reviews and assessments of the evidence on effectiveness of a wide variety of clinic-based preventive activities. In the field of tobacco control, for example, the US Preventive Services Task Force (USPSTF) reviewed the evidence on effectiveness of provider tobacco cessation counseling. Strength of recommendations issued by the USPSTF are directly linked to the quality and size of

Table 1
Methods Employed in Selected Tobacco Prevention and Control Guidelines and Reviews

Guideline or Review	Type of Review	Expert Panel /Team	Methods Reported	Systematic Search Reported	Study Inclusion Criteria?	Study Design Criteria?	Study Quality Criteria?	Outcomes Summarized	Conclusions Derived From
Youth Tobacco Cessation Guide ¹	Systematic	Yes	Yes	Yes ^a	Yes (Table 2)	Yes	Yes	Yes	Expert Opinion
Guide to Community Preventive Services ^{11, 25}	Systematic	Yes	Yes	Yes	Yes (Table 2)	Yes	Yes	Yes	Body of Evidence
Cochrane Collaboration ^{3,26}	Systematic	No	Yes	Yes	Yes (Table 2)	Yes	Yes	Yes	Body of Evidence
Clinical Practice Guideline ⁸	Systematic	Yes	Yes	Yes ^a	Yes (Table 2)	Yes	Yes	Yes	Body of Evidence
Reducing Tobacco Use: SGR ⁹	Narrative	Yes ^b	No	No	No	No	No	Selected	Expert Opinion
CDC Best Practices ⁷	Best Practices; Narrative	Yes	Yes	No	No	No	No	Selected	Expert Opinion
Guide to Clinical Preventive Services ⁶	Systematic	Yes	Yes	Yes	Yes (Table 2)	Yes	No	Yes	Body of Evidence
Growing Up Tobacco Free (IOM) ⁵	Narrative	Yes	No	No	No	No	No	Selected	Expert Opinion

Note.

a The systematic search was conducted in the review by Sussman.²⁸

b Individual chapters (reviews) were written by recruited experts. Expert reviewers and other contributors were acknowledged

the body of evidence on effectiveness.

Growing Up Tobacco Free: Preventing Nicotine Addiction in Children and Youths (1994).⁵ In 1994, an expert panel assembled by the Institute of Medicine provided a set of policy recommendations to reduce tobacco use among youth. Narrative reviews of the available evidence conclude with a set of recommendations for the implementation of specific policies and/or interventions at the level of the community, the state, and the nation.

Comparison of Review Methods

Some aspects of the methods and conduct of these reviews are summarized in

Table 1. The categories identified in the columns are briefly defined as follows:

- Type of review -- Guideline summarized the evidence using systematic review methods or a narrative approach.
- Expert panel or team -- Guideline used an expert panel or team to (a) direct or assist the review, (b) provide the conclusions or recommendation, or (c) both.
- Review methods provided -- Publication included a full description of the methods used to conduct the review of evidence.
- Systematic search reported -- Published review conducted and reported a systematic search for evidence.
- Evidence review included some exclu-

Table 2
Comparison of Quality Criteria in Selected Guidelines

Review	Study Design Criteria	Quality of Execution Criteria	Summary of Outcomes
Youth Tobacco Cessation Guide (2003) ¹	Exclusions were based on an overall "internal validity score" that included study design as one of 17 explicit quality categories.		A qualitative comparison of the number of studies reporting positive, negative, or no effects on cessation. Individual study results are provided in the table.
Guide to Community Preventive Services (2001) ^{11,25}	Reviews of cessation interventions excluded studies without a concurrent comparison group (for example, a simple before-after design).	Overall quality of execution was assessed for each study with limitations assigned by reviewers. Studies with 5 or more assessed limitations were excluded from assessment.	Measurements were summarized in the in the text. Summary results were reported as the mean and range of absolute percentage differences.
Cochrane Collaboration ³ (review example) ^a	Excluded all nonrandomized studies. Included randomized trials that compared group therapy with self-help, individual counseling, another intervention, or no intervention.	Studies were excluded if follow-up of smoking status was limited to less than 6 months after the start of the program. Some studies were excluded that provided group therapy as an adjunct to pharmacotherapies.	Meta-analyses Estimated odds ratio
Treating Tobacco Use and Dependence: Clinical Practice Guideline (2000) ⁸	Meta-analyses were restricted to randomized (patient-level) placebo/comparison controlled trials. Some expert panel recommendations ("C" level strength of evidence) did not exclude nonrandomized comparisons.	Studies were excluded if they did not measure cessation at a time point 5 months or longer after the quit date. "Seriously confounded" study aims were excluded from meta-analysis. Some intervention-specific screening criteria were employed (undefined).	Meta-analyses Estimated odds ratio Estimated abstinence rate Expert panel recommendations included a brief narrative review without a formal outcome summary.
Guide to Clinical Preventive Services (1996) ⁶	Adopted a hierarchy of evidence with greater weight given to study designs less subject to bias and misinterpretation (in order: randomized controlled trials, nonrandomized controlled trials, cohort studies, case-control studies, comparisons between time and places, uncontrolled experiments, descriptive studies, expert opinion).		Measurements were summarized in the text. Summary results were usually presented as the mean and range of absolute percentage differences.

Note.

a Stead LF, Lancaster T. Group behaviour therapy programmes for smoking cessation. (Last update Dec. 2001) In: *The Cochrane Library*, Issue 4, 2002.²⁶

sion or inclusion criteria -- Review established at least one criterion for the assessment of evidence on effectiveness:

- Review established at least one criterion for including, excluding, or weighting identified studies based on the study design employed.

- Review established at least one criterion for including, excluding, or weighting identified studies based on an assessment of study quality of execution.

- Outcomes were summarized -- Review provided a quantitative assessment

(table display, median, range, pooled summary estimates) of the outcomes reported in the qualifying body of evidence.

Conclusions were derived from (a) expert opinion (including best-identified practices) informed by the results of the review and (b) the body of evidence (either a pooled summary estimate or recommendation formally linked to the strength of the body of evidence).

Comparisons

Five of the 8 reviews developed and employed systematic review methods for the search and evaluation of the evidence of effectiveness.^{1,6,8,25-26} Expert panels or teams were contributors to 7 reviews.^{1,5-9,25} In the 5 systematic reviews, every relevant study identified in the search for evidence was evaluated for inclusion in the subsequent assessment of effectiveness based on study design or quality of execution criteria (or both). Table 2 compares the methods and decisions reported in the systematic reviews for the assessment of study quality.

The reviews conducted for the Cochrane Collaboration and for the clinical practice guideline adopted the most rigorous criteria, based primarily on study design. In both reviews, nonrandomized studies were excluded, and assessments of the evidence were based primarily or exclusively on results from randomized controlled trials (RCTs). Reviews for the community guide, on the other hand, excluded studies with "least suitable designs" (primarily cross-sectional surveys and single-group before-after comparisons), whereas the youth guide review considered study design as one of 17 categories in determination of an overall "internal validity score."

All of the systematic reviews also included one or more criteria based on the conduct or quality of the study. Both the Cochrane and clinical practice guideline reviews of cessation interventions, for example, excluded studies with duration of follow-up of less than 6 and 5 months, respectively. In both the community guide and *Youth Tobacco Cessation* guide reviews, duration of follow-up was one category contributing a limitation or an internal validity score in an overall assessment of study quality.

The practical effect of rigor in setting quality criteria is to reduce the number of studies contributing to the subsequent assessment of effectiveness. For example,

the youth guide review identified 40 relevant studies of youth cessation interventions, but assessment of overall study quality removed 28 (70%) studies from the body of evidence on which the panel conclusions were drafted.

As the differences in the inclusion criteria across these guidelines demonstrate, there is little consensus on the trade-off between the rigor of inclusion criteria and the exclusion of evidence (studies) from the final assessment of effectiveness. For evaluations of clinical cessation interventions in adults (the focus of the clinical practice guideline and a number of Cochrane Collaboration reviews), the size and quality of the available evidence permit assessments limited to randomized trials and yield extremely useful summary measurements of effectiveness. Reviews such as the community guide, on the other hand, were developed to evaluate the evidence of effectiveness of community and population-based interventions. In these settings, nonrandomized and quasi-experimental designs constitute a larger proportion of the available evidence. Systematic reviews with less restrictive study-design criteria and narrative reviews retain more of the available evidence in the final assessment.

All 8 of the reviews reported outcome measurements from most or all of the studies qualifying for final review (in the text, tables, or appendices). In 4 of the systematic reviews, measurements across the body of evidence were summarized and contributed to the subsequent assessment of effectiveness.^{6,8,25-26} Two of these reviews, the Cochrane reviews and the clinical practice guideline, applied meta-analytic techniques to yield summary outcome measurements (when permitted by the data). For example, the clinical practice guideline review of the evidence of effectiveness of physician advice to quit to their patients who smoke yields the following outcome summary on effectiveness:⁸

Odds ratio 1.3, 95% confidence interval (1.1, 1.6),

Estimated patient abstinence rate: 10.2%, 95% confidence interval (8.5%, 12.0%).

Pooled summary estimates provide in-

Table 3
Tobacco-Use Cessation in Youth:
Conclusions from Selected Reviews

Review	Conclusion(s)
Youth Tobacco Cessation Guide (2000) ¹	<p>Treatment effectiveness: Treatments to help adolescents quit smoking can be effective.</p> <p>Theoretical foundation: There is sufficient evidence to recommend cognitive-behavioral models as a foundation for treatment development. There was insufficient evidence to recommend any other approach, including the use of pharmacotherapy.</p> <p>Delivery setting: There was insufficient evidence to suggest one type of treatment setting was more effective than any other.</p> <p>Type of intervention: There was insufficient evidence to indicate that mandatory treatments for tobacco use are effective. All quality studies producing a treatment effect employed voluntary enrollment.</p> <p>Provider type: There was insufficient evidence to suggest one type of treatment provider was better than another.</p>
Guide to Community Preventive Services (2001) ^{11,25}	Review in progress (update available: http://www.thecommunityguide.org)
Cochrane Collaboration (2003) ³	Review in progress (protocol available: http://www.update-software.com/abstracts/g160index.htm)
Treating Tobacco Use and Dependence: Clinical Practice Guideline (2000) ⁸	<p>Tobacco-Use Treatments in Children and Adolescents ... Therefore, clinicians both need to assess adolescent tobacco use and offer cessation counseling. Clinicians also should make an effort to prepare adolescents to quit smoking. For instance, clinicians may use motivational interventions...or consider techniques adapted for use with children.... Also, children and adolescents may benefit from community- and school-based intervention activities. The messages delivered by these programs should be reinforced by the clinician.... A recent comprehensive review of adolescent cessation programs in a variety of settings has concluded that such programs produce quit rates that exceed naturally occurring quit rates, but that more and higher quality research needs to be done....</p> <p>Because there is no evidence that bupropion SR or nicotine replacement is harmful for children and adolescents, clinicians may consider their use when tobacco dependence is obvious. However, because of the psychosocial and behavioral aspects of smoking in adolescents, clinicians should be confident of the patient's tobacco dependence and intention to quit before instituting pharmacotherapy. Factors such as degree of dependence, number of cigarettes per day, and body weight should be considered....</p> <p>The following topics regarding adolescents and children require additional research:</p> <ul style="list-style-type: none"> -The efficacy of advice and counseling -The efficacy of pharmacotherapy -The efficacy of interventions designed specifically to motivate youth to stop using tobacco -The efficacy of interventions designed to treat tobacco dependence in youth. -The efficacy of child-focused versus family-focused interventions -The efficacy of treating parents' tobacco use in the context of pediatric visits.^{pp.102-103}

(continued next page)

formation that is extremely useful to decisionmakers, program planners, and evaluators. Summary measurements de-

rived from quantitative assessments also enable a direct and explicit translation of the evidence of effectiveness into conclu-

**Table 3 (continued)
Tobacco-Use Cessation in Youth:
Conclusions from Selected Reviews**

Review	Conclusion(s)
Preventing Tobacco Use Among Young People: A Report of the Surgeon General (1994) ⁴	<p>Conclusions ...4. Smoking-cessation programs tend to have low success rates. Recruiting and retaining adolescents in formal cessation programs are difficult.^{pp.275}</p> <p>Note: Youth cessation was not specifically addressed in the 2000 report: Reducing Tobacco Use</p>
CDC Best Practices (1999) ⁷	<p>School program activities include implementing CDC's <i>Guidelines for School Health Programs to Prevent Tobacco Use and Addiction</i>, which call for tobacco-free policies; evidence-based curricula, teacher training, parental involvement, and cessation services.^{p.4}</p>
Growing Up Tobacco Free (1994) ⁵	<p>Summary points: Because the addictive quality of nicotine is powerful, there is a strong need to evaluate whether the use of techniques for quitting tobacco use by adults can be beneficial to adolescents. The following conclusions are supported by the research base:</p> <ol style="list-style-type: none"> 1. Adolescent smoking cessation has been the subject of very little systematic research. Adolescents who are regular smokers experience the same withdrawal symptoms as adults when they attempt to quit. 2. Adolescents frequently express interest in quitting and report making numerous, usually unsuccessful quit attempts, but they tend not to participate or remain in formal cessation programs. 3. Cessation programs for adolescents have not resulted in significant quit rates. 4. Once a person becomes a regular smoker, he or she finds it difficult to quit; few adolescents succeed in quitting. <p>Smokeless tobacco cessation</p> <p>There have been few studies with adolescents of cessation of smokeless tobacco use. The results have been both negative and positive. The cessation rates at follow-up are modest: 12% to 16% confirmed at 3- to 6-month follow-up. Response by adolescents to school-based cessation programs is modest; dropout rates are high.^{pp.166-167}</p> <p>Overall</p> <p>Research should be conducted on the development and evaluation of programs to help children and youths who are regular tobacco users to quit their habitual use of cigarettes, snuff, or chew. Research is needed to determine whether or not nicotine replacement therapies as an adjunct to behavior therapies contribute to achievement of enduring cessation.^{pp.168}</p>
Guide to Clinical Preventive Services (1996) ⁶	<p>A complete history of tobacco use and an assessment of nicotine dependence among tobacco users should be obtained from all adolescent and adult patients. Tobacco cessation counseling is recommended on a regular basis for all patients who use tobacco products ("A" recommendation).</p> <p>Antitobacco messages should be included in health promotion counseling of children, adolescents, and young adults based on the proven efficacy of risk reduction from avoiding tobacco use ("A" recommendation), although the evidence for the effectiveness of clinical counseling to prevent the initiation of tobacco use is less clear ("C" recommendation).^{pp.602-604}</p>

sions and recommendations for use. Conclusions or recommendations were derived from an explicit translation of the evidence on effectiveness in 4 reviews^{6,8,25,26} and from expert opinion in 4 reviews.^{1,5,7,9} In drawing conclusions from the evidence of effectiveness, these guide-

lines differ in both the assessment and significance of consistency (or inconsistency) in the individual study outcomes across the qualifying body of evidence. In the meta-analytic summaries provided in Cochrane and the clinical practice guidelines, the presence or absence of

consistency contributed directly to the pooled summary estimates. In reviews for the community guide, consistency across the qualifying body of evidence was one factor (along with the size and quality of the body of evidence, a sufficient summary effect size, and additional intervention effects such as harms) explicitly evaluated in the final determination of effectiveness. The criteria adopted for conclusions with the youth guide review ("At least half of the high validity studies must show significant positive treatment effects/quit rate")¹ placed less emphasis on the demonstration of consistency. Because the methods adopted for this review were intended to identify the "better practices" across the available evidence and included criteria for an assessment of "promising," this lower burden of proof was balanced by conclusion statements that are significantly weaker ("Treatments to help adolescents quit smoking can be effective.")¹ than statements on effectiveness in the other systematic reviews.

Table 3 presents the conclusions and recommendations from the 6 guidelines that addressed youth tobacco-use cessation.^{1,4-8} Of these reviews, only the youth guide provides a detailed assessment of the evidence of effectiveness. Two guidelines, the clinical practice guideline and *Guide to Clinical Preventive Services* extend some clinical recommendations to youth based primarily on the evidence of effectiveness in adult patients. Three reviews, the youth guide, the clinical practice guideline, and *Growing Up Tobacco Free* provide an agenda for additional research. Evidence reviews for both the Cochrane Collaboration and the community guide are currently in progress.

Discussion

Evidence reviews in tobacco prevention and control have value beyond the assessment of effectiveness. The narrative formats of *Reducing Tobacco Use* and *Growing Up Tobacco Free* are broader in content and easier to read than the systematic reviews. Both narrative reviews provide additional background information and are excellent, comprehensive introductions to the field. Some interventions reviewed in *Reducing Tobacco Use* present the evidence in chronological order, which offers a perspective on the advance of research as well as concluding

with the most recent studies. The expert panel contributing to *Growing Up Tobacco Free* concluded each chapter in the review with a specific set of policy recommendations, most of which remain relevant a decade later.

A number of guidelines provide reviews and evidence-based recommendations on interventions to reduce tobacco use among youth. The latest such effort, the *Youth Tobacco Cessation: A Guide for Making Informed Decisions* project described in this issue of the journal, contributes considerably to this endeavor. It began with a systematic review of the evidence on effectiveness. The methods created or adopted for this review are fully described and permit scrutiny. These include a number of explicit criteria for the assessment of every identified study and the standards adopted for the inclusion and exclusion of evidence. In addition to providing the first systematic assessment of the evidence on youth cessation interventions, the youth guide effort contributes to the rising tide of review standards (systematic, explicit, and open) within the field.

Consistent with earlier reviews, conclusions formally linked to the body of evidence remain limited by significant gaps and inconsistencies in the available evidence on effectiveness. The recommendations from the expert panel attempt to fill in (temporarily) some of these gaps, to illuminate panel perspectives on current better practices, and to provide a framework for current implementation and evaluation efforts.

Findings of insufficient evidence to support evidence-based recommendations are common, especially in assessments of "new" interventions (or assessments of evidence pertaining to specific settings or populations). Although insufficient evidence should not be interpreted as evidence "against" the use of a specific intervention, it should be interpreted to mean that continued evaluations must remain focused on the determination of effectiveness.

A focus on the determination of effectiveness is especially important to the youth guide effort, which combines a systematic review with expert panel recommendations and advice regarding how to implement these recommendations. Although the youth guide is designed to be a practical resource for both decision mak-

ers and implementers, we expect that as additional research is conducted and synthesized, conclusions about effectiveness will continue to evolve, and the youth guide will need to be revised accordingly.

Systematic reviews provide some information on implementation; although, the level of detail is frequently inadequate to permit or encourage replication (most qualifying studies focus, appropriately, on methods and measurements to determine effectiveness). The opinions and experiences of the expert team participants, as demonstrated in the youth tobacco cessation guide, can help significantly to translate the limited descriptions provided in the available studies into practical guidelines for implementation.

The translation and application of evidence of effectiveness have contributed to the evolution and dissemination of the modern, comprehensive state- and community-based tobacco prevention and control program.⁹ Evidence reviews enhance access to the wealth of information catalogued in the scientific literature over the last 40 years. The *Youth Tobacco Cessation Guide* provides information, recommendations, and advice on implementation focused on one facet of a comprehensive effort. The youth guide is an initial, practical, review of a complicated body of evidence of effectiveness that is currently limited. Additional research and program evaluations, perhaps promoted and assisted by this effort, will expand the body of evidence, providing answers to remaining questions and details to improve the recommendations and advice. The youth guide model (providing a concise review, a limited set of recommendations, and information on implementation) is worth replicating (and evaluating) for other interventions employed in our efforts to reduce tobacco use and exposures to environmental tobacco smoke. ■

REFERENCES

- McDonald P, Colwell B, Backinger CL, et al. Better practices for youth tobacco cessation: evidence of review panel. *Am J Health Behav.* 2003;27(Suppl 2):S144-S158.
- Milton MH, Maule CO, Backinger CL, et al. Recommendations and guidance for practice in youth tobacco cessation. *Am J Health Behav.* 2003;27(Suppl 2):S159-S169.
- The Cochrane Collaboration. *The Cochrane Library*, Issue 4, 2002. Available at: <http://www.cochrane.org>. Accessed January 6, 2003.
- U.S. Department of Health and Human Services. Preventing Tobacco Use Among Young People: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 1994:5-223.
- Institute of Medicine. Growing Up Tobacco Free: Preventing Nicotine Addiction in Children and Youths. Washington, DC: National Academy Press 1994:3-306.
- U.S. Preventive Services Task Force. Guide to Clinical Preventive Services: Report of the U.S. Preventive Services Task Force, 2nd ed. Baltimore, MD: Williams and Wilkins 1996:3-934.
- Centers for Disease Control and Prevention. Best Practices for Comprehensive Tobacco Control Programs—August 1999. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 1999:1-87.
- Fiore MC, Bailey WC, Cohen SJ, et al. Treating Tobacco Use and Dependence: Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service 2000:1-179.
- U.S. Department of Health and Human Services. Reducing Tobacco Use: A Report of the Surgeon General (stock no.: 017-001-00544-4). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 2000:5-462.
- National Cancer Institute. Population Based Smoking Cessation: Proceedings of a Conference on What Works to Influence Cessation in the General Population. Smoking and Tobacco Control Monograph No. 12. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute (NIH Pub. No. 00-4892) 2000:1-233.
- Task Force on Community Preventive Services. Recommendations regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *Am J Prev Med.* 2001;20(Suppl 2):10-15.
- Canadian Task Force on the Periodic Health Examination. The periodic health examination. *Canadian Medical Association Journal.* 1979;121:1193-1254.
- Sackett DL. Rules of evidence and clinical recommendations on the use of antithrombotic agents. *Chest.* 1986;89(Suppl 2):2S-3S.
- Cook DJ, Guyatt GH, Laupacis A, et al. Rules of evidence and clinical recommendations on the use of antithrombotic agents. Antithrombotic therapy consensus conference.

- Chest*. 1992;102(Suppl 4):305S-311S.
15. U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research. Acute Pain Management: Operative or Medical Procedures and Trauma. Rockville, MD: Agency for Health Care Policy and Research Publications (AHCPR Pub. 92-0032) 1992:1-145.
 16. Gyorkos TW, Tannenbaum TN, Abrahamowicz M, et al. An approach to the development of practice guidelines for community health interventions. *Can J Public Health*. 1994;85(Suppl 1):S8-S13.
 17. Canadian Task Force on the Periodic Health Examination. Canadian Guide to Clinical, Preventive Health Care. Ottawa, Canada: Canada Communications Group 1996:4-996.
 18. Agency for Health Care Policy and Research. Smoking Cessation: Clinical Practice Guideline, Number 18. Washington, DC: U.S. Department of Health and Human Services (AHCPR Pub. 96-0692) 1996:1-125.
 19. Novick LF. Public health practice guidelines: a case study. *Journal of Public Health Management and Practice*. 1997;3:56-64.
 20. Briss PA, Zaza S, Pappaioanou M, et al. Developing an evidence-based guide to community preventive services—methods. *Am J Prev Med*. 2000;18(Suppl 1):35-43.
 21. Harris RP, Helfand M, Woolf SH, et al. Current methods of the U.S. preventive services task force: a review of the process. *Am J Prev Med*. 2001;20(3)(Suppl 1):21-35.
 22. Counsell C. Formulating questions and locating primary studies for inclusion in systematic reviews. *Ann Intern Med*. 1997;127:380-387.
 23. Richardson WS, Wilson MS, Nishikawa J, et al. The well-built clinical question: a key to evidence based decisions. *ACP J Club*. 1995;A12-3.
 24. Hopkins DP, Husten CG, Fielding JE, et al. Evidence reviews and recommendations on interventions to reduce tobacco use and exposure to environmental tobacco smoke: a summary of selected guidelines. *Am J Prev Med*. 2001;20(Suppl 2):67-87.
 25. Hopkins DP, Briss PA, Ricard CJ, et al. Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *Am J Prev Med*. 2001;20(Suppl 2):16-66.
 26. Stead LF, Lancaster T. Group behaviour therapy programmes for smoking cessation. (last update Dec., 2001) In: *The Cochrane Library*, Issue 4, 2002. Available at: <http://www.update-software.com/abstracts/ab001007.htm>. Accessed January 6, 2003.
 27. Panday S, Reddy P, Swart D. Tobacco cessation interventions for young people (Protocol for a Cochrane Review). In: *The Cochrane Library*, Issue 4, 2002. Available at: <http://www.update-software.com/abstracts/g160index.htm>. Accessed January 6, 2003.
 28. Sussman S. Effects of sixty-six adolescent tobacco use cessation trials and seventeen prospective studies of self-initiated quitting. *Tobacco Induced Diseases*. 2002;1(1):35-81.