Review and Needs Assessment of Materials Designed to Prevent Tobacco Use

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Synopsis ....

Over the past 25 years, numerous educational materials and strategies have been developed for the prevention and control of tobacco use. However, there has been no comprehensive assessment of the available materials designed to educate the public to avoid the use of tobacco. A search for materials and a review process was conducted in the fall of 1993, and a panel of experts reviewed the materials that were collected.

In conducting the search, 240 persons and organizations associated with tobacco control efforts across the United States were contacted, and 207 materials were identified and evaluated. All materials were assessed by at least two members of the expert panel. Of the 207 items, 188 were found to be acceptable according to standardized review criteria.

The authors drew conclusions about the current availability of tobacco use prevention materials and present recommendations for increasing the availability of materials to community-level and other control programs.

T OBACCO USE LEADS to more deaths than any other controllable risk factor and costs the United States billions every year in medical expenses and lost work days. Today, smoking control activity is increasingly focused on the community level. The widespread acknowledgement that the best programs are based in the communities that they serve can be seen in the design and implementation of the National Cancer Institute's ASSIST programs as well as the Robert Wood Johnson Foundation's program, Smokeless States, directed through the American Medical Association. Educational materials can have a pivotal role in these tobacco control programs when they are linked to program strategies designed to motivate no-use behavior (prevention).

With an awareness of these facts and trends, it is clear that a need exists to assess the tobacco prevention materials available to educate people at the community level. This project was designed to search for, identify, and obtain tobacco control and prevention materials designed for use in the community; develop criteria for identifying materials acceptable in tobacco control programs; and identify gaps in available materials and strategies.

The scope of this search and review included materials only on prevention of tobacco use (excluding cessation); community-based as well as media materials and programs available to users such as community agencies, health departments, voluntaries, providers, coalitions, and employers for specific target audiences (such as youth, parents, pregnant women, low-literacy populations, young adults, special ethnic groups, policy makers, and media representatives); in English and other languages and in various formats (including booklets, brochures, newsletters, videos, how-to guides, and communication-prevention plans). The search was limited to materials available from nonprofit sources in response to the needs for affordability and source credibility.

Methods

Materials search. Materials were located through a telephone and mail search conducted from August to November 1993. Primary sources were contacted by telephone and asked if they had any tobacco use prevention materials for use in the community, if they were aware of other potential sources of materials,

and if they produced a newsletter or other publication that could publicize the search. The notice was included in two newsletters and posted on the SCARCNet online message system. Primary sources included the following:

- Combined Health Information Database
- Center for Substance Abuse Prevention and the National Clearinghouse for Alcohol and Drug Information
- Office of Disease Prevention and Health Promotion
- National Cancer Institute and the Office of Cancer Communication
- National Heart, Lung, and Blood Institute
- Office on Smoking and Health
- Women, Infants, and Children (WIC) Program of the U.S. Department of Agriculture
- National Public Health Information Coalition
- Association of State and Territorial Health Officials
- American Academy of Pediatrics
- Coalition on Smoking OR Health
- March of Dimes

As a result of these initial telephone queries, a mailing list was developed, and letters were mailed to more than 200 potential sources. If no reply was received, a second letter was sent 4 weeks after the first. Essential sources (those the authors knew were likely to have relevant materials) that still did not reply were telephoned. New sources also were contacted by phone as the collection of the materials continued. These sources were found in catalogs that were submitted or through further discussions. In all, 34 persons or organizations were contacted by phone, and 206 through the mail. Of the 206 mailed requests for materials, we received responses from 104. We received 38 responses from State health departments, including 22 that sent tobacco use prevention materials and 16 who responded but had no prevention materials (see box). In total, 207 tobacco prevention materials were received; among them were 38 brochures, 33 posters, 32 fact sheets, 16 how-to guides, and 15 booklets.

Materials review methods. To develop the evaluation process, procedures and forms from the Public Health Service's Centers for Disease Control and Prevention (1) and the Center for Substance Abuse Prevention (2) were adapted to suit the parameters of the project. The evaluation included many facets of the material's communication characteristics, including appropriateness of language, tone, and length, credibility of source, and the effectiveness of the messages contained in the material. Following are the

Responses of State Health Departments to Requests for Tobacco Use Prevention Materials

Sent materials	Did not send materials	No response
California	Alaska	Alabama
Georgia	Arizona	Arkansas
Hawaii	Colorado	Connecticut
Indiana	Delaware	Florida
Iowa	Idaho	Louisiana
Maine	Illinois	Nevada
Massachusetts	Kansas	New Jersey
Michigan	Kentucky	South Carolina
Minnesota	Maryland	Vermont
Mississippi	Missouri	Washington
Montana	New Mexico	West Virginia
Nebraska	North Dakota	Wisconsin
New Hampshire	Oregon	
New York	Rhode Island	
North Carolina	South Dakota	
Ohio Virginia		
Oklahoma		
Pennsylvania		
Tennessee		
Texas		
Utah		
Wyoming		

criteria used by reviewers to evaluate the educational materials:

1. Information reported is accurate, current, and applicable to the subject matter.
2. Material is appropriate for target audience.
3. Material is culturally appropriate.
4. Institutional source is credible.
5. Language is appropriate.
6. Tone is appropriate.
7. Length is appropriate.
8. Format/graphics quality is acceptable.
9. Messages are appealing, believable, create awareness, persuade, call for action, and have been pretested.
10. Material needs to be combined with other messages or materials to be effective.
11. Readability level is appropriate.

The evaluation forms as well as the instructions for reviewers to use in determining product acceptability according to each of these criteria can be found in the "Tobacco Use Prevention Materials Catalog." An expert panel of 11 reviewers was recruited. Panel members were selected for their expertise in two or

Table 1. Sources of materials

Type of source	Number of sources	Number of materials
Federal agencies	5	18
National voluntary organizations	3	39
Other national organizations	8	35
State health departments	22	81
Other State organizations	5	6
Local organizations	5	9
Totals	48	188

Table 2. Numbers of materials available, by target audience
Audience Available nationwide Total available

Audience	Available nationwide	Total available
Public audiences		
Children (preschool, elementary)	1	11
Youth (preteen, teen)	20	41
Women	0	6
Men	1	3
General public	12	23
Ethnic minorities	9	9
Intermediary audiences		
Parents	5	11
Teachers, youth leaders	3	6
Employers (worksite)	2	10
Tobacco control advocates	16	65
Health care providers	3	3

more of the following areas: tobacco control program development, health communications, knowledge of the tobacco control field, and experience with the designated target audiences.

The first step in the evaluation process was completing a form that described the format (brochure, VHS video, poster), length (pages or minutes), target audience or audiences, and the availability of the material. This information was faxed to the sources of the materials to review for accuracy, and the sources were to contact us only if corrections were needed. We received replies for 89 of the 207 items. This descriptive information was provided to reviewers and included in the "Tobacco Use Prevention Materials Catalog" to help users determine which materials to order.

Next, a product review form was completed for each piece of material by two expert reviewers. If the reviewers disagreed as to whether the product was "acceptable" or "unacceptable" based on the review criteria, the product was appraised by the entire project team. Unacceptable products were not included in the catalog produced as a part of this project. A total of 207 materials were each reviewed

by at least two reviewers, and of these, 188 were found to be acceptable.

Findings

Reviewers' findings. A total of 188 pieces were found to be of acceptable quality, and 17 were found unacceptable. Reasons for unacceptability included outdated information, inaccurate information or hyperbole (especially in advocacy materials), and very poor writing or production quality. In evaluating others, reviewers did not believe that the materials used an appropriate tone or style for the intended audience (most often because of a negative or fear appeal)—these materials clearly would benefit from testing with the target audience but were considered to be acceptable in the interim.

Sources of materials. Materials submitted were from a variety of national, State, and local sources (table 1). More broadly applicable materials (not specific to a State or community)—a total of 39—were available from national voluntary associations than from the other types of nonprofit sources.

Availability of materials. Ninety items are available free, there is a modest fee for 65, and the charge for the remaining 33 is unknown. The producers did not provide cost information for many items, and for these, it is not clear the extent to which the producers can or will make the materials available.

The majority of the 96 pieces produced by State and community-based organizations provide geographically specific information and would be useful outside their service area only as examples. For example, some States have fact sheets that provide statistical information (such as deaths due to smoking). The materials produced by the Minnesota Department of Health can be licensed to other State health departments for reproduction and distribution within their States. A significant proportion, 114 of the 188 pieces, are available and appropriate only within limited geographic areas.

Date of publication. Recency of publication is an important consideration. For example, materials on environmental tobacco smoke (ETS) produced before the Environmental Protection Agency's (EPA) report released in January 1993 probably will not contain as compelling an argument for controlling ETS as more recent materials. Also, materials intended to convince young people that they should not use tobacco may not be credible with the target audience if they do not employ current style and language (3).

Of the materials reviewed, 101 were produced in 1990 or more recently; 33 were dated 1985-89; 2 were dated prior to 1985; and 52 were undated. Some of the materials that bore recent dates were reprints of older publications; reviewers found outdated information included in some publications with recent dates.

For the 70 materials on ETS, 31 predated the EPA's report, and of 39 items dated after January 1993 or undated, only 9 made specific mention of the report. Some ETS materials produced in the 1980s were deemed unacceptable by reviewers because of new ETS information.

Types of materials available. More booklets-brochures (53 when these categories are combined) appear to be available than any other type of material. There also appear to be significant numbers of posters (33) and fact sheets (32). The majority of fact sheets, 24, are aimed at tobacco control advocates and policy makers, providing data in support of advocacy initiatives (such as the costs and impact of smoking within a State). The how-to guide category includes a range of materials, from nationally produced media advocacy guides to locally produced guides on how to develop and implement smokefree workplace policies.

One audiotape, five videotapes, and seven public service announcements (PSAs) were submitted and reviewed. Few PSAs seem to be available for cross-sharing between organizations. This situation is unfortunate because the production cost of PSAs is prohibitive for many community-based organizations. The use of public service time is a valid media strategy, and tobacco control PSAs have traditionally received favorable air play (3).

A few innovative items were submitted. Traditional brochures, booklets, and posters appear to be the most commonly produced. Only a few organizations used innovative formats such as bookmarks, picture frames, buttons, and book covers, even though their production costs may be lower than for booklets, and their attention-drawing capacity and acceptability among some target audiences may be higher.

Some materials had been very well received, according to the organizations, yet were available only in limited geographic areas. For example, GASP of Colorado produced a pocket-sized State guide to smoke-free restaurants; demand for the guide, the agency said, had exceeded 30,000 copies.

Topics. Perhaps because these issues have emerged more recently, many materials appear to be available on ETS and spit tobacco. Seventy items identified

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discussed ETS, 125 dealt with prevention of cigarette use, and 84 addressed prevention of spit tobacco use. (Because some materials included more than one topic, the number of topics exceeds the total number of materials in the collection.) In particular, 25 items, mostly for teenage boys, focus solely on spit tobacco, and 8 are available nationally.

Target audiences. As would be expected for tobacco prevention and control efforts, more materials were intended for youth (ages 11–19) than for any other public audience. Of the 93 materials that were directed at the public rather than intermediary groups, 41 were targeted to preteenage and teenage youth, and 20 of these are available nationwide (table 2).

There were a number of gaps in the supply of materials for some audiences. Of the 11 items intended for children ages 10 and younger, only 1 is available nationwide. There appears to be a paucity of tobacco prevention materials for school children and for community settings. In addition, only 11 items (only 5 are available nationwide) were targeted to parents, even though parents are a major influence on children contemplating tobacco use. No materials for pregnant nonsmokers on environmental tobacco smoke were identified. Also missing were prevention materials for use by health care providers or in health care settings; only three in this category were identified. Materials culturally appropriate for ethnic target audiences were few.

Among intermediary audiences, tobacco control advocates-policy makers were the target for 65 items, although only 16 of these were available nationwide.

Cultural appropriateness and language. Nine materials were identified for ethnic minorities, and only one community package and two posters were described by their producers as having been pretested.

Table 3. Percentage of U.S. adults (ages 18 or older) who were current cigarette smokers[1], by sex, race, and Hispanic origin, 1991

Characteristic	Men	Women
Race:		
White	27.4	23.8
Black	35.1	24.4
Asian American, Pacific Islander	24.2	7.5
American Indian, Alaskan Native	27.9	35.2
Hispanic origin:		
Hispanic	25.2	15.5
Non-Hispanic	28.3	24.2

[1]Smoked at least 100 cigarettes and were currently smoking.
SOURCE: National Health Interview Survey, 1991.

It is not clear if other materials had been tested or whether they were culturally appropriate. A reviewer noted in commenting on one booklet, " . . . the only actual depiction of smoking taking place is of African American parents . . . white parents on [the] same page do not have cigarettes."

Reviewers identified other potential problems similar to the "common mistakes in developing culturally appropriate messages and materials" that have been identified by the Center for Substance Abuse and Prevention (4):

• failing to involve members of the target group in the development and selection of messages and materials,
• ignoring variances and diversity within racial and ethnic groups,
• trying to target a single message to an audience that is too diverse,
• using terms and language that are offensive to the target group, and
• assuming that selecting a spokesperson from the target group, such as a popular athlete or entertainer, will turn a general market message into a targeted message.

Only three materials in Spanish were identified, and the single English-Spanish bilingual item was a retail business sign prohibiting sales to minors.

The lack of materials targeting minorities appears to be a significant gap, given their relatively higher prevalences of smoking. The scope of the problem can best be perceived in light of the smoking prevalence rates among adults (table 3). For example, messages and materials targeted to American Indian women could potentially help to decrease both high rates of tobacco use and their families' exposure.

Production quality. The quality of materials ranged from very high to very low. It was not surprising,

because of production costs, that materials from community-based sources were more likely than those from national sources to be of poorer quality. However, some items, most notably a series of fact sheets from the Hawaii Department of Health, that were inexpensive to produce also were creative and attractive.

It is unclear if poor quality products, that used unprofessional drawings or graphics, or were poorly printed, for example, can compete with tobacco advertising and other messages. Could they influence young people, who are the subjects of sophisticated, high quality, and expensive marketing efforts for tobacco and many other products?

In particular, the reviewers questioned if some less sophisticated attempts at parody or ridicule (for example, of smokers or of a tobacco product) featured in some material would be acceptable to the target audience. And posters of lesser quality might not compete with the appealing images portrayed in tobacco advertising.

Appropriateness of appeals and messages. Reviewers had the most comments on the appeals used compared with other aspects of the materials. Frequently missing was the evidence that the materials were developed based on sound communication principles, behavior change models, and knowledge of how to prevent and control smoking.

Reviewers expressed two main concerns that led to finding materials unacceptable.

1. Some products contained information that so strongly leaned toward advocacy that the reviewers questioned its accuracy (and credibility of the materials and source).
2. Some featured full-color photographs of diseased mouths (spit tobacco) or lungs (cigarettes); reviewers questioned the relevance of "scare" tactics in *preventing* tobacco experimentation among youth [versus their use as a cessation strategy]. As noted in the American Heart Association's position statement, "Coronary Risk Factor Modification in Children: Smoking," "Intervention programs [for youth] using short films explaining peer pressure or tobacco advertising and their influence have been more effective than information-oriented or fear-arousal techniques" (5). And a seminar on fear appeals convened by the National Heart, Lung, and Blood Institute generated this observation: "For years now, fear has been used in attempts to shock people into changing their lifestyles . . . Yet little is known about its persuasive effect" (unpublished report by the National Heart, Lung, and Blood Institute and Porter/

Table 4. Numbers of materials at various reading levels, by target audience

Audience	Reading level					
	Low	Easy	Average	Fairly difficult	Difficult	Not applicable
Children (preschool, elementary)	2	4	...	...	...	5
Youth (preteen, teen)	...	4	7	3	...	27
Parents	...	2	5	...		4
Teachers, youth leaders	...	2	...	2	1	1
Women	...	...	...	...	...	6
Employers (worksite)	...	...	1	4	2	3
Tobacco control advocates	...	1	2	14	16	32
Men	...	1	1	...	...	1
General public	...	...	5	5	2	11
Health care providers	...	...	...	...	2	1
Ethnic minorities	...	...	1	1	...	7

Novelli, "Seminar Results: Fear as a Persuasion Technique" Bethesda, 1988).

Pretesting. All sources were asked whether their materials had been pretested; respondents identified only 18 pretested items. For these, no one shared a description of the testing, although they were asked to do so.

For 11 items, respondents replied that they had not been pretested; for the remaining 159 pieces, this question was not answered, although many respondents answered the other questions. It is unclear if the respondents knew that the materials had been tested, or whether they understood the question. Nevertheless, it appears that very few of the available items have been pretested with the target audience.

Reviewers' comments (for example, "some questions [included in this brochure for youth] are silly" and "I believe the tone is wrong for the target audience") support the need to pretest materials, especially those intended to motivate youth to refrain from experimentation with tobacco, since what appeals to youth is ever-shifting.

Educational materials as support for interventions. Sound communication practice dictates that educational materials should support articulated educational strategies. Some of the materials reviewed did not appear to be connected to such strategies. For example, a reviewer noted that one spit tobacco workbook for youth gave no instructions about resisting pressure to use snuff.

Also, whether a target audience will be addressed through presentations, self-instruction, games, or through the mass media should first be determined, then appropriate materials developed to fit the mode of delivery. The proliferation of brochures suggests that this determination is not being made. Also, in only a few cases was there reinforcement of the

message between brochures and other materials such as posters with the same themes.

Only 1 of the 23 how-to guides and workbooks reviewed was identified as having been pretested. A reviewer noted that the sophisticated and complex content of a media advocacy guide would "work" for a motivated reader, but a simpler version would be more useful for a broader target group. Therefore, the usefulness of these guides within the community is doubtful.

Readability. The SMOG readability formula, as recommended by the National Cancer Institute (6), was used to determine the years of schooling required to undrestand the material. Overall, the items targeting children and youth appear to have acceptable reading levels for these target populations. The two items that tested "low" for readability both were comic books (table 4). Although a number of materials tested high for readability, the majority of these were directed to tobacco control advocates and policy makers.

Conclusions

An analysis of the process, the materials collected, and reviewer comments led to these conclusions of the authors:

1. The project appears to be the first collection of tobacco control educational materials with a national perspective. Yet, every tobacco control program respondent in this study cited an interest in access to such a source.

2. Surprisingly few materials available for key target audiences (and none for some important audiences) have been pretested, are of high production quality, and are available from nonprofit sources to users in multiple community settings.

'To maximize the impact of the Surgeon General's reports on smoking, educational strategies and materials should be designed and introduced in conjunction with the release of each report. In this way, the reports' findings can be applied within the community setting. Specifically, culturally appropriate educational strategies and educational materials should be made available upon release of the upcoming reports on young people and on people of color.'

3. Very few materials targeting children are available outside of formal school-based curriculums. This gap will limit the capability of community-based programs to target a key audience.

4. There is a significant shortage of culturally appropriate materials.

5. Because of the current availability of materials, producers should consider if existing materials on spit tobacco will suffice before they decide to produce additional materials on this topic.

6. Materials, especially items on ETS, being considered for use should be carefully reviewed for currency, even those recently published.

7. The quality of materials ranged from very high to very low. It is unclear to what extent poorly produced materials can compete for attention with tobacco advertising and other messages.

8. Materials should be carefully reviewed for accuracy and credibility of the information they contain and for the appropriateness of the appeals used for youth. If in doubt about their appeal, pretest before using them.

Recommendations

The following are recommendations for improving community-level access to effective tobacco prevention educational materials:

• Tobacco control advocates in the community should have access to information about existing educational materials. They cannot be expected to repeat the laborious search and review process reported in this paper, and they need access to avoid common mistakes, take advantage of well-produced materials, and conserve their limited resources. A few clearinghouses maintain collections that are limited in scope (for example, to materials produced within the State, or for a specific use such as in the classroom), but a national clearinghouse, an automated database, and periodic publication of a materials directory are needed.

• High quality messages and materials for key target audiences should be within reach of every community-based tobacco control program. Tobacco prevention and control efforts compete directly with an industry that can outspend the public sector on any level. Tobacco companies spend billions of dollars each year to make sure that their promotional messages reach the same groups targeted by prevention and control efforts. Because of the proximity of competing messages, it is vital that prevention and control messages and materials be of sufficient quality to compete.

• New tobacco control educational materials should be produced, pretested, and made available to community-based programs to fill the gaps identified in this paper. Gaps include culturally appropriate materials, materials for children and their parents, and for pregnant women. Producers of these materials should consider using the more innovative formats found in this search; these may be more appealing for certain target audiences than the usual brochure.

• Pretesting of tobacco control educational materials should be encouraged. It appears that pretesting among these materials producers is currently the exception, not the rule. To compete with an industry that spends many times the equivalent of tobacco control budgets on market research alone, at least minimum target audience testing should be the norm for the production of educational materials. Both market research and pretest methods and findings should be shared across organizations. (Guidelines for designing and conducting pretests can be found in "Making Health Communications Programs Work: A Planner's Guide," available by calling 1-800-4CANCER [2]).

• Guidelines for producing appropriate and effective tobacco control messages and materials should be developed and promulgated. Given the shortcomings identified in this paper and the current expansion of community-based tobacco control efforts, guidance for community organizers should be developed to expand upon the general guidance publications more commonly available (2,4,6). Direction that organizers need includes information about key target audiences for tobacco control, strategies that are more likely to

be successful (for example, that have been tested and proven effective for tobacco control), materials available for use, guidelines for producing and pretesting educational materials, and suggestions for tobacco control activities that would be appropriate in conjunction with the materials.

It is clear from this review that many producers of prevention materials, especially those at the community level, could benefit from exposure to both general guidelines covered in the health education literature and specific guidelines. For example, few materials were designed to support a planned strategy to educate, change attitudes, or motivate a target group. Because many community programs will continue to produce their own materials, it is important that their organizers understand how to do this effectively.

• To maximize the impact of the Surgeon General's reports on smoking, educational strategies and materials should be designed and introduced in conjunction with the release of each report. In this way, the reports' findings can be applied within the community setting. Specifically, culturally appropriate educational strategies and educational materials should be made available upon release of the upcoming reports on young people and on people of color.

• Organizations should consider collaborating to produce and pretest costly materials; the credibility of the material can be reinforced through multiple sponsorship. PSAs, for example, are usually very expensive to produce. Cost-sharing to underwrite the production of expensive materials has on occasion been successful, and although few of the materials reviewed listed co-sponsors, the identification of multiple sponsors can help strengthen the credibility and impact of a message.

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