

Commentary

A Missed Opportunity

Teaching Medical Students to Help Their Patients Successfully Quit Smoking

CIGARETTE smoking maintains its dubious distinction as the chief preventable cause of cancer in the United States, responsible for 30% of all cancers and resulting in 150 000 cancer deaths each year.^{1,2} Despite widespread knowledge regarding the risks of tobacco, 26% of adults in the United States continue to smoke.³ As a result, an epidemic of cancer continues in this country, blunting the dramatic improvements that have resulted from advances in other areas such as early detection and treatment.

One important way to control the epidemic of tobacco-related cancers would be to improve the frequency and effectiveness of smoking interventions by physicians. While many programs have attempted to train practicing physicians,⁴ no national program has focused on undergraduate medical education and the importance of reaching medical students during their primary medical training. In this article, we will review the findings of a National Cancer Institute (NCI) Expert Panel that addressed cigarette smoking and undergraduate medical education.

Background

According to data from the 1986 Centers for Disease Control Adult Use of Tobacco Survey, 68% of all smokers stated that they would like to quit and 66% have already made at least one serious attempt to quit.⁵ During 1986, more than one third of all smokers (17 million Americans) made at least one serious quit attempt⁶; only 3 million of these individuals succeeded.

Physicians are uniquely positioned to aid people who smoke, most of whom want to quit. Smokers have reported that their physician's advice was an important factor in their decision to quit smoking.⁷ This finding is particularly relevant given that approximately 70% of smokers see a physician each year.⁸ Although the impact of a physician's advice to quit has varied, Sherin⁹ reported that 70% of persons smoking more than one pack of cigarettes a day said they would quit if urged to do so by a physician. The 1979 Surgeon General's report on the health consequences of smoking concluded that 10% to 25% of smokers who are advised to quit by their physicians may quit or reduce the number of cigarettes they smoke.¹⁰

In 1980, the American Medical Association recommended that physicians "assess routinely the smoking habits of their patients and encourage them to quit smoking by offering them direct assistance or referring them to community cessation clinics."¹¹ However, from 1985 to 1991 numerous reports in the literature revealed that patients were not routinely advised to quit smoking.¹²⁻¹⁴ One reason for this finding

is that many physicians believe they are unprepared for, and unsuccessful in, treating patients addicted to nicotine.¹⁵⁻¹⁷ This may result from the fact that *most physicians practicing today were not trained during medical school or residency in techniques to help their patients stop smoking.*

Since 1990, the NCI has worked in collaboration with other organizations to train practicing physicians nationwide in tobacco use prevention and intervention techniques.¹⁸⁻²⁰ Their goal is to train 100 000 practicing physicians in these techniques. For smoking intervention to become routinely incorporated into medical practice, however, training should also be incorporated into medical education.

Cigarette Smoking and Undergraduate Medical Education: Research Findings

One important way to improve physician practice related to smoking cessation would be to emphasize this topic during undergraduate medical education. While no national survey of smoking cessation curricula for US medical schools has been published, information from multiple sources suggests that this area is not routinely covered during undergraduate medical education and rarely is emphasized. In many medical schools, the topic is essentially ignored.

In an attempt to quantify the emphasis on smoking in medical school, Ginzel²¹ assessed the coverage of this topic within pharmacology textbooks published since 1960. He found that among the 21 editions of 10 different American pharmacology texts, tobacco use occupied 0.05% of total book pages, while alcoholism and other drug abuse commanded five and 40 times as much space, respectively. For example, the eighth edition (1990) of *Goodman and Gilman's The Pharmacological Basis of Therapeutics* devotes only five of a total of 1811 pages to nicotine and tobacco vs 42 pages devoted to alcohol and other abused drugs.²²

The belief among practicing physicians that they are unsuccessful in treating nicotine addiction is mirrored by first-year medical students. In an article by Greenland and colleagues,²³ 2582 students from eight US medical schools were surveyed regarding attitudes toward disease prevention. While 70% of entering students agreed that physicians have a responsibility to urge patients to live healthy lifestyles, only 8% believed that people who smoke would change their behavior if a physician encouraged them to do so. Third-year medical students had similar attitudes related to smoking cessation. In a study by Scott and Neighbor,²⁴ 36 third-year students reported that their medical education provided them with "low to fair" confidence in their ability to provide smoking cessation interventions to their patients. However, despite the students' pessimism about their ability to aid patients who smoke, 90% believed that smoking cessation was a service that physicians should be prepared to offer their patients.

The results of physician and medical student surveys revealed two important findings—first, both groups believed it

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was important for the clinician to promote nonsmoking among his or her patients, and second, both groups felt ineffective in modifying the behavior of patients who smoke. Finally, an analysis of medical student write-ups in 1990 by Hull and Kleinhenz²⁵ concluded that students' smoking assessment and cessation skills are not well developed and that there is little opportunity to practice these skills in the inpatient setting.

Research findings suggest that curricula to promote smoking cessation interventions can be effective in undergraduate medical education. Allen et al²⁶ described the implementation of a training program at the University of Minnesota that was designed to introduce smoking cessation intervention skills into the medical school curriculum. The authors developed a 2-hour workshop on the patient-centered approach to smoking intervention for a family medicine rotation during the second-year clinical medicine course. Two of four student groups (98 students) in the family medicine clinical rotation received the training and were afforded practice opportunities at the clinical site with at least one patient who smokes. The other two groups (90 students) went through the usual rotation with no special instruction or clinical emphasis on preventive interventions. The intervention groups reported more positive perceptions of preventive medicine interventions as well as increased confidence in their ability to provide effective assistance in smoking cessation.

Segall and colleagues²⁷ at Boston (Mass) University developed a five-stage collaborative project to develop a curriculum and associated instructional materials in preventive medicine focusing, in part, on smoking and lung cancer. As part of their model to promote preventive interventions in clinical practice, the effectiveness of these interventions was evaluated in terms of attitudes, knowledge, and skills. These authors noted that competency in planning a practice-based program of prevention and the ability to assist patients in modifying patterns of behavior were significant determinants as to whether physicians were effective in preventive interventions like promoting smoking cessation.

In 1984, Horton²⁸ mailed a questionnaire to 127 US medical schools in an attempt to survey educational programs relating to smoking. Of these 127 schools, 65 (51%) responded while 62 (49%) did not respond to the survey. Among the 65 respondents, 41 (32% of the total) indicated that they had curriculum programs related to smoking prevention and 36 (28%) had some program in cessation.

More recently, the Liaison Committee on Medical Education (LCME Questionnaire, Part II) included some questions on tobacco cessation curricula on the 1989-1990 survey (Table). These results suggest that, while many schools are teaching "something" about this topic, it is rarely emphasized.

Smoking Cessation and Prevention: Examples of Current Medical School Curricula

A number of medical schools have developed curricula to promote effective smoking cessation and prevention interventions. At Yale University School of Medicine, a tobacco-related curriculum is incorporated into a larger curriculum addressing the prevention of pulmonary disease. This curriculum was developed over the last 5 years as part of the Preventive Pulmonary Academic Award Program (National Heart, Lung, and Blood Institute, National Institutes of Health), which includes 20 medical schools nationwide. The curriculum at Yale involves 16 different scenarios using stan-

Liaison Committee on Medical Education Questionnaire, Part II, 1989-1990*

Smoking Cessation	Yes	No
As a required course	0	127
As part of a required course	73	54
As a separate elective course	11	116
As part of an elective	30	97
Through other educational experiences	23	104

*Survey of 127 medical schools on smoking cessation curricula.

dardized patients to achieve preventive pulmonary educational objectives in smoking cessation and prevention.

At Harvard Medical School, which uses a case-based approach to undergraduate medical education, a case study devoted to counseling patients who smoke was developed. This case is incorporated within the course on preventive medicine and nutrition. The case study focuses on tobacco-related topics and serves as an instrument to stimulate discussion and learning among medical students.

At the University of Wisconsin-Madison, smoking cessation and prevention interventions have been part of both the second- and third-year curricula for the last 3 years. During the second-year neoplastic diseases course, all students receive an hour-long didactic lecture on smoking cessation interventions based on the NCI's program, *How to Help Your Patients Stop Smoking*.⁴ Students are also provided with a copy of this NCI manual. To reinforce this practical approach to smoking cessation, during their third-year primary care outpatient clerkship, small groups (five to 15 students) spend 1 to 2 hours reviewing the NCI program with an emphasis on role playing and intervention with actual primary care patients.

One model for engaging medical students in efforts to prevent adolescent-onset tobacco use is that of DOC (Doctors Ought to Care, c/o Department of Family Medicine, Baylor College of Medicine, Houston, TX 77005), a national group of physicians, residents, and medical students founded in 1977 to counteract tobacco use and its promotion.^{29,30} This approach to utilize college-age facilitators to prevent tobacco use during adolescence has been supported by recent research.³¹ Specific activities pioneered and implemented by DOC include school-based presentations on tobacco use and promotion, poster contests to encourage school-age youth to counteract tobacco advertising, and counteradvertising campaigns designed to ridicule cigarette and spit (chewing) tobacco brand names popular among adolescents.³² Similar strategies have been adopted by the American Medical Students Association.

While DOC has been incorporated as an extracurricular activity into more than 30 medical schools in the United States, few schools actually use such strategies to combat smoking as part of specific curricula. Recently, DOC has been incorporated into medical school curricula through courses in community and preventive medicine (Medical College of Georgia and University of Nebraska College of Medicine)^{33,34} and as part of predoctoral curricula in family medicine (University of California School of Medicine). On an international level, the World Health Organization adopted several strategies and components of DOC's medical school and residency curricula for its World No-Tobacco Day 1993.³⁵

The NCI's Expert Panel: Mission and Goals

To address the lack of medical school emphasis on smoking cessation curricula, the NCI convened a panel of experts in Bethesda, Md, on April 27, 1992. The mission of this panel was to assess and promote undergraduate medical education in

smoking cessation and prevention. The meeting focused on the following specific goals:

- Describe existing research and experience in integrating smoking cessation and prevention interventions into a medical school curriculum.
- Identify components of an effective smoking cessation and prevention curriculum for medical students.
- Discuss strategies for integrating smoking cessation and prevention teaching into medical school curricula.
- Discuss the need for further research.

The NCI's Expert Panel: Findings and Suggestions

The following findings resulted from this meeting of experts:

1. Cigarette smoking, the leading cause of preventable cancer in the United States, warrants increased emphasis in undergraduate medical education. The expert panel concluded that a specific curriculum devoted to smoking cessation and prevention must become a mandatory component of undergraduate medical education in every US school.

2. There has been no recent assessment of tobacco curricula among medical schools nationally. Therefore, a systematic assessment of current educational activities in this area is needed.

3. Medical school curricula (traditional vs case-based vs mixed curricula) differ markedly in the United States. These differences preclude a single-model tobacco curriculum for all medical schools, although each school should designate this topic as a key curriculum area.

4. Given the differences across medical school curricula, certain core materials can serve as key components of different tobacco curricula. The NCI model program, *How to Help Your Patients Stop Smoking*,⁴ may serve as a source document for developing nationwide curricula in cessation and prevention of tobacco use.

5. The effectiveness of a smoking cessation and prevention curriculum must be evaluated. Published data, particularly those relating to the impact of such curricula on postgraduate clinical practice patterns, are lacking.

6. One important way to emphasize smoking cessation and prevention curricula is to include questions on this topic as part of the US medical licensing examinations, steps I, II, and III. Currently, these examinations underemphasize this chief cause of morbidity and mortality.

7. The American Medical Association, the Association of American Medical Colleges, and other organizations—as well as their publications—are important vehicles for promoting discussion and action in this area.

8. The importance of faculty development workshops and materials was emphasized. Such faculty development would promote the training of interested faculty at all medical schools to highlight this as a topic of importance and concern.

9. Undergraduate medical education has been an underutilized opportunity to teach physicians effective smoking cessation and prevention interventions. Medical schools should establish a goal of incorporating this training as part of every medical student's education by 1995.

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