based approaches can enhance the effect of clinical preventive services.

THOMAS M. VOGT, MD
Portland, Oregon

NEAL D. KOHATSU, MD, MPH
GEORGE W. RUTHERFORD, MD
Sacramento, California

REFERENCES

Hollis JF, Lichtenstein E, Vogt TM, Stevens VJ, Biglan A: Nurse-assisted counseling for smokers in primary care. Ann Intern Med 1993; 118:521-525

Krumholz HM, Cohen BI, Tserat J, Pasternak RC, Weinstein MC: Cost-effectiveness of a smoking cessation program after myocardial infarction. J Am Coll Cardiol 1993; 22:1697-1702

Morrison AS: Screening for cancer of the breast. Epidemiol Rev 1993; 15:244-255

Russell LB: The role of prevention in health reform. N Engl J Med 1993; 329: 352-354

Routine Smoking Cessation Intervention in Health Care Systems

TOBACCO-RELATED ILLNESS and death is the largest public health epidemic of our times and, as such, warrants the application of population-based methods that have been the hallmark of successful public health programs. Whereas taxation, regulation, media reports, and other community approaches have been used to address this issue, smoking cessation interventions in health care systems, such as hospitals and outpatient clinics, should become an important component of the struggle against tobacco-induced disease. Medical system interventions have the potential to reach most smokers at a "teachable moment," without waiting for smokers to volunteer for more intensive group cessation intervention. (An estimated 70% of smokers visit a physician's office annually, and perhaps 25% or more receive inpatient services.)

Many research studies support the value of brief clinical interventions for tobacco use. These interventions include routine assessment of tobacco use in all patients, strong advice to quit, brief cessation counseling—including setting a quit date and prescribing pharmacologic aids as appropriate, state-of-the-art self-help materials, and follow-up support. These approaches produce long-term cessation in both outpatient and inpatient settings. Recent community-based data suggest, however, that smoking interventions that rely solely on physician initiatives are not systematically applied or sustainable in the real world of community practice. In fact, fewer than 50% of patients report they have ever been advised by their physicians to quit or cut down. Physicians often judge counseling interventions as important but relatively ineffective and outside their training. Smoking assessment and lifestyle counseling have not commonly been a part of medical education and practice; physicians striving to incorporate these practices face skill and habit barriers in addition to the obstacles posed by a work setting with time and resource limitations.

Incorporating systems for assessment, intervention, and follow-up into routine practice is a more effective method for improving smoking cessation success than simply relying on individual physicians and their willingness or ability to change practice patterns. Further, the most effective intervention systems are those that offer a range of options for quitting and involve physicians and nonphysicians alike. Smoking interventions provided by teams that include physicians and nonphysician clinical staff have recently been shown to be practical and acceptable in outpatient and inpatient settings. The use of nurses, health educators, respiratory therapists, and other available clinical staff to provide most intervention and follow-up elements minimizes the demands on physicians, spreads responsibility for the intervention across clinical staff, and increases the likelihood that the intervention will continue to be provided. Another method to encourage and sustain systematic smoking intervention in a medical setting is to identify it as a quality indicator.

According to recent estimates, more than 3 million smokers a year would quit if physicians could help only 10% of their smoking patients to quit. Because the tobacco industry successfully recruits about a million new smokers per year, the integration of systematic, low-intensity interventions throughout the medical care system could contribute substantially to achieving the nation's Healthy People 2000 smoking objectives.

EVELYN P. WHITLOCK, MD, MPH
Portland, Oregon

REFERENCES

Duncan C, Stein MJ, Cummings SR: Staff involvement and special follow-up time increase physicians' counseling about smoking cessation: A controlled trial. Am J Public Health 1991; 81:899-901

Fiore MC: The new vital sign: Assessing and documenting smoking status. JAMA 1991; 266:3183-3184

Hollis JV, Lichtenstein EL, Vogt TM, Stevens VJ, Biglan A: Nurse-assisted counseling for smokers in primary care. Ann Intern Med 1993; 118:521-525

Orleans CT, Kristeller JL, Gritz ER: Helping hospitalized smokers quit: New directions for treatment and research. J Consult Clin Psychol 1993; 61:778-789

Vibrio vulnificus Hazard in Patients With Liver Disease

Vibrio cholerae has been long recognized as a human pathogen, but only in recent years has the pathogenicity of other Vibrionaceae been recognized. Eleven species of Vibrio are now known to be capable of causing serious human illness. Among these, *Vibrio vulnificus* is the most important in the United States.

Vibrio vulnificus is a naturally occurring marine bacterium found most often in warm ocean waters, such as the Gulf of Mexico. Humans may be exposed to the bacteria by swimming or wading in seawater or by eating raw seafood. Eating raw oysters is now recognized as the primary mode of acquiring *V vulnificus* infection in the United States. Indeed, *V vulnificus* has emerged as the leading cause of death from food-borne illness in some areas of the country.

In the 12-year period 1981 through 1992, 72 cases of *V vulnificus* infection from eating raw oysters were reported in Florida; half of these persons died. These 36 deaths accounted for 80% of all food-borne deaths in Florida during this period. (Of note, eight of the nine other food-borne illness fatalities in Florida during these 12 years were due to infection with other *Vibrio* species.)

The case-fatality rate (63%) among patients with liver disease was nearly three times higher than for persons with normal livers. During 1991 and 1992, eight of nine persons dying of *Vvulnificus* infection after eating raw oysters in Florida had liver disease.

In California, where *Vibrio* infections were made a reportable condition in 1988, a similar relationship between *Vvulnificus* infection, raw oysters, and liver disease has been noted. From January 1983 through July 1993, 24 cases of *Vvulnificus* infection were reported to the California Department of Health Services; 18 of these persons (75%) died—almost all of primary septicemia. In 15 of the 24 patients (63%) there was a definite history of eating raw oysters before the onset of illness. In all cases where the source of the oysters could be determined, they were from the Gulf Coast. Of the 24 infected persons, 19 (80%) had an underlying chronic illness; in 16 of them (85%) the condition was alcoholic cirrhosis or other liver disease.

The risk of infection after ingesting raw oysters harboring *Vvulnificus* in persons having underlying liver disease is 30 times greater than in normally healthy persons, and the risk of death is more than 200 times greater. Even with the advanced medical treatment, persons having liver disease have a 50% to 60% case-fatality rate in the event of *Vvulnificus* septicemia.

Because *Vvulnificus* is a naturally occurring bacterium whose presence is not due to sewage or other contamination, there are no sanitation or other public health controls that can limit the harvesting of oysters to only areas free of the pathogen. For this reason, California enacted regulations in 1990 requiring restaurants and other establishments that serve or sell Gulf Coast oysters to warn prospective purchasers about possible ill effects. (The regulations also specify requirements for tagging, labeling, and records retention to facilitate prompt identification of the source in the event of illness.) More recently both Florida and Louisiana have enacted similar regulations, and some other states are considering taking action as well.

Although a growing number of areas require a public warning about the potential of raw oysters to cause serious illness in immunocompromised persons, clinicians must advise their patients with liver disease of the potential for illness and death from *Vvulnificus* infection secondary to eating raw oysters, even though the oysters have been legally harvested and properly handled. Indeed, persons with liver disease should be strongly advised not to eat any seafood that has not been thoroughly cooked. Likewise, persons having liver disease or who are immunocompromised from other causes should be advised that serious and possibly fatal *Vvulnificus* soft tissue infection may result from marine trauma or when open wounds are exposed to seawater. Marine-acquired wounds in immunocompromised persons must be closely observed, and even minor wounds may warrant antibiotic treatment with oral tetracycline, the combination product trimethoprim and sulfamethoxazole, or a quinolone.

KENNETH W. KIZER, MD, MPH
Davis, California

REFERENCES

California Department of Health Services. To eat or not to eat (raw shellfish): 1—*Vibrio vulnificus* infections in California—A ten-year review. Calif Morbidity, Aug 13, 1993, Nos. 31 and 32

Centers for Disease Control and Prevention: *Vibrio vulnificus* infections associated with raw oyster consumption—Florida, 1981-1992. MMWR 1993; 42:405-407

Hlady WG, Mullen RC, Hopkins RS: *Vibrio vulnificus* from raw oysters. J Florida Med Assoc 1993; 80:536-538

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