Editorial: Community Solutions to Community Problems—Preventing Adolescent Alcohol Use

This issue's first report of findings from Perry and colleagues' Project Northland could not have arrived at a more crucial time. Latest national survey results indicate that rates of cigarette smoking and illicit drug use among eighth, tenth, and twelfth graders have risen again for the third consecutive year.1 This follows a long period of decline from the highs of the late 1970s. Alcohol use rates, though not increasing, have stopped decreasing and remain level. Although there is as yet no explanation for the newly changing pattern of youthful substance use, a parallel decrease in allocation of resources and national attention paid to this vital topic accompanies this increase. We may be afflicted with a national attention deficit disorder, the inability to focus on more than one public health issue at the same time, forcing us to abandon the problem faced yesterday for one ballyhooed today.

For once, however, we welcome good news. Perry and colleagues' Project Northland in northeastern Minnesota signals how far we have come in designing and evaluating prevention programs.2 By conceptualizing behavior as the product of influences acting at multiple levels of social organization—individual, family, peer, and community—and by engaging factors at each of these levels in the prevention of underage drinking, Project Northland has succeeded not only in changing drinking behavior among youth, but also in demonstrating that community-focused and -based interventions can be implemented and evaluated while holding to standards of scientific research. That this project has been able to report success in decreasing the use of alcohol by sixth, seventh, and eighth graders largely by delaying the onset of use can be credited to two factors: the nature of the intervention and the nature of the evaluation. In both respects, Project Northland marks an advance in our approach to the public health problem of youth alcohol use.

Earlier knowledge and information-based attempts to decrease youth alcohol use were marked by what today might be considered naiveté at best.3 If we could only inform youth of the dangers of alcohol use, or make them consider use in the broader context of their beliefs and values, or enable them to say no, we could get them to abstain from or diminish their substance use. Whatever made us think that a few hours in the classroom with a teacher, no matter how dedicated or well meaning, could change a behavior that is reinforced countless times daily by peer interactions, media messages, advertising, and the behavior of important role models, including parents? Evaluations of these simple attempts at intervention yielded uniformly negative findings. Whatever change that occurred was limited to recall of information, and even that was at best short term.4 5

Project Northland uses a much more sophisticated and broader intervention program to make its impact on alcohol use by youth. The intervention involves a mixture of specially designed participatory, action-oriented curricula; parental participation; peer leadership; and community task force activities. Interventions were tailored to the developmental capacities of youth in six, seventh, and eighth grades. Communities were explicitly engaged in the process of program design and implementation. By developing a system-based approach to community involvement, project staff sought to increase

References

Editor's Note. See related article by Perry et al. (p 956) in this issue.
the odds the program would affect the availability and supply of alcohol to youth, in addition to their knowledge, attitudes, and drinking practices. And they appear to have succeeded.

We must not underestimate the significance of the departure in prevention programming from individually focused efforts to those that conceptualize behavior as a product of a broadly construed social environment. Individual-level prevention places the onus of use solely on the individual and ignores the influences of family, peers and community. Although we must not overlook the importance of targeting potential users, such targeting alone in a one-sided approach can impede our understanding of how social structural factors affect adolescent drinking. Without engaging in this type of thinking and without applying its results, we risk investing in educating young people for brief periods of time only to return them to an environment that facilitates underage alcohol use and abuse. Ultimately, the best way to achieve and sustain prevention is to target individuals and their environments.

Frustration with the lack of results from individual-level interventions appears to have led to a reconceptualization of adolescent drinking and our approaches to prevention. Because our view of the problem now incorporates an understanding of behavior as shaped by a network of individual, social, and environmental factors, current models are addressing both the demand- and the supply-side determinants of alcohol use. The successful integration of demand- and supply-side strategies is evident in Project Northland.

The community model used in Project Northland follows the precedent set by Farquhar and colleagues in the Stanford Five-City Project, which used an integrated community approach to reduce a population's risk for cardiovascular disease. In the area of youth substance use, Pentz and colleagues conducted an integrated school-based, family-based, and community-based preventive intervention, targeting adolescents in multiple communities throughout Kansas City and Indianapolis. Using a quasi-experimental evaluation design, they compared prevalence rates in intervention to delayed-intervention sites and found a sustained impact on multiple substances over 2- and 3-year periods.

Similarly, both the Robert Wood Johnson Foundation's Fighting Back Initiative and the US Department of Health and Human Services' Center for Substance Abuse Prevention Community Partnership demonstration programs were organized to target the entire community as the locus and mechanism of change. Both these efforts explicitly mandated broad-based community involvement, direction by representative community task forces, careful needs assessments, and documentation of program content and implementation. Recognizing that individual behavior is most malleable when reinforced by messages from multiple community sectors, and that programs are most efficient when existing resources are applied to shared priorities, these programs brought together representatives and resources from across community sectors, including businesses, tenant and housing authorities, religious institutions, schools, parent associations, health institutions and hospitals, and local government agencies. Recognizing further that behavior change is sustained when the norms of a community change, these programs set out to change the environmental conditions and practices that shape and reinforce norms. Although these efforts are excellent examples of innovative social programming, they are only beginning to demonstrate, with quasi-experimental methods, their impact on youthful substance use.

Project Northland provides evidence that this type of integrated community trial is worthwhile. By providing a vehicle for community participation in prevention programming, these trials develop consensus and create multiplier effects for disseminating public health messages. No doubt this is crucial to changing the supply-side characteristics of intervention sites.

That said, findings from community trials are not necessarily free from ambiguity; nor do all multilevel trials appear to work equally well across different populations, settings, and target behaviors. Findings of Project Northland may reflect a synergy of timing with topic. The project targeted primarily younger healthy adolescents and paid attention to life course and developmental factors in its intervention design. Indeed, results suggest that the program was less effective for early maturers or youth already engaged in multiple problem behaviors.

Changing a social system requires a sustained investment of resources and effort. Linking systemic changes to behavioral changes and health outcomes challenges our patience, our methods, and the political and economic context in which research is conducted. Ultimately, change of this order requires participation from all levels of community. Government and philanthropic initiatives require the support of professional and lay publics, a reality acknowledged by analysts at the forefront of broader social policy. Coleman and Putnam have theorized how "social capital"—patterns of mutual obligation, trust, and support characteristic of communities' networks of formal and informal relationships—may determine health and development. We hypothesize that it is the accrual and expenditure of social capital through sharing responsibility, resources, and roles to achieve reductions in youth substance use that will, in the end, achieve sustained reductions in the extent of use and the progression to abuse.

It may well be that the more we conceive of the community as both locus and mechanism for change, and the more we explicitly target communities in addition to their individual residents, the greater will be the odds of our success. In this fashion, we return environment to its place with agent and host in the classical public health paradigm. How this thinking is translated into effective programming remains to be more fully articulated, applied and evaluated. We look forward to future reports by Perry and colleagues and others who take the difficult next step of determining how intervention programs affect communities and how community characteristics and resources can be used to modify individual behavior.

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Editorial: Understanding and Treating Obesity

Obesity can be defined as an excess of body fat. Although on the surface this definition seems simple enough, in reality it is very vague. What is an excess of body fat? More than the average? More than what is considered cosmetically pleasing? More than the amount necessary to feel healthy and physically fit? Or is obesity present when the amount of body fat reaches a level that increases a person’s risk for serious illness and significantly shortens life expectancy?

It is this last definition that carries with it the most serious public health consequences. Numerous studies have shown that when the level of body fat reaches 10 to 15% above the “ideal” amount, the risks for developing coronary artery disease, hypertension, diabetes, and perhaps certain cancers significantly increase.1

What is this ideal amount of body fat that can be used to calculate whether a person is obese? It is the amount of body fat that is associated with the greatest life expectancy. It will differ depending on the person’s sex (women usually have a higher percentage of body fat) and height (the taller the person, the greater the absolute amount of body fat). Thus the ideal amount of body fat will vary with each person depending on sex and height, and tables have been derived that can be used to determine one’s ideal amount of body fat.

Unfortunately, these tables are of limited use either to the general public or to investigators involved in population studies of obesity. Determining total body fat directly is a tedious and complicated process, and although a number of relatively accurate ways are available, most are limited to a laboratory setting. However, one simple measurement that has been validated against the laboratory measurements is skinfold thickness. This simple procedure is easily performed in the field and can be used to measure body fat directly. It should be used routinely along with measurements of height and weight.

The most common way to measure body fat is to use body weight. In our society, heavier people at any given height are generally fatter. While this may not be true for certain athletes, it is usually true for the average man or woman. Thus tables exist (the one most commonly used is the current Metropolitan Life Insurance table) that list ideal weights for men and women at any given height. It is these tables that have been used to determine relative risks of obesity.

About 30 years ago, a series of brilliant studies by Jules Hirsch and associates began to define obesity at a cellular level.2 These investigators showed that fat may be packaged in the body in two ways: either in small droplets in many fat cells or in large droplets in a few fat cells. Thus they distinguished two types of obesity: one in which there were too many fat cells, each containing a relatively normal amount of fat (hyperplastic obesity), and one in which there were a normal number of fat cells, each containing too much fat (hypertrophic obesity).

Weight loss always reduced the amount of fat per cell, but never the number of fat cells. Thus the person who had hypertrophic obesity was returned to normal when he or she lost weight. There were a normal number of fat cells each containing a normal amount of fat. By contrast, the person who had hyperplastic obesity was made doubly abnormal with weight reduction. He or she had too many too small fat cells. In this type of person, weight gain and the return of obesity were almost inevitable.

These studies generated a great deal of excitement. What determined that an obese individual would have the hyperplastic or hypertrophic form of the disease? Was one form or the other or both associated with the increased health risks of obesity? Should treatment for one be different from treatment for the other? A number of studies designed to answer these questions were performed over the next 10 to 15 years.2

Childhood obesity was invariably hyperplastic, and it almost always progressed to adult hyperplastic obesity. Adult onset obesity, however, could be either hypertrophic or hyperplastic or, most commonly, both.

While sustained weight reduction was more difficult in people with hyperplastic obesity, recidivism was very common in all three types. And as for health risks, the form of obesity didn’t seem to matter. Finally, the treatment for obesity, no matter what the cellular form, remained the same: decreasing caloric intake and increasing caloric expenditure.

Beginning in the late 1970s and continuing through the present, a new emphasis has been developing. From a physiologic standpoint, body fat is deposited in excess amounts when caloric intake exceeds caloric expenditure. Most of our calories are expended in a resting state. Do obese people have a lower resting metabolism than do lean people? Are they able to drive the everyday machinery of the body more efficiently than their leaner counterparts? Does this reduced

Editor’s Note. See related articles by Jeffery and French (p 1005) and Kawachi et al. (p 999) in this issue.

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