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*Preventing Drug Use
Among Youth Through
Community Outreach
The Military's Pilot Programs*

*Jonathan P. Caulkins, Nora Fitzgerald,
Karyn Model, H. Lamar Willis*

National Defense Research Institute

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Preface

In an attempt to control the problems associated with illicit drugs, Section 1045 of the 1993 National Defense Authorization Act called on the military to create pilot outreach programs to reduce the demand for illicit drugs among youth. In authorizing this pilot program, Congress mandated a report assessing the effectiveness of the pilot programs and providing recommendations regarding their continuation. RAND was asked to perform a study in support of that report. This document gives the results of that study and will be of interest to those concerned with drug policy and drug-use prevention and those interested in nontraditional military missions.

The study was conducted for the Deputy Assistant Secretary of Defense (Drug Enforcement Policy and Support) by RAND's Forces and Resources Policy Center and Drug Policy Research Center. The former center is part of the National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, and the defense agencies. The latter center is part of RAND's Domestic Research Division.

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Summary

Background

The United States has a substantial drug problem. The nation could benefit from drug prevention programs, and these are thought to be more effective when many program providers are involved. Congress, in an attempt to marshal additional forces for prevention, directed the military to establish pilot community outreach programs to reduce the demand for illegal drugs among youth.¹ The military has a number of special assets that can be employed in preventing drug abuse among young people, although there are also limitations. Among the various components of the military, the National Guard has a special niche because of its dual mission of state and federal service.

Purpose and Methodology of RAND Study

As part of the legislation, Congress directed the Secretary of Defense to report on the effectiveness of the pilot outreach programs and make recommendations regarding their continuation. RAND is assisting the Department of Defense with that report, and this document discusses a RAND study that examined the potential suitability of the military for such roles, the pilot programs that were implemented, their effectiveness, how the programs affected the military, and some desirable attributes of military-run prevention programs for youth.

The information for the study was gathered largely through site visits and telephone interviews with program administrators, staff, participating youth, parents, and community leaders. A literature review, background research, and supporting calculations supplemented these efforts.

Is the Military Well Suited for Youth Drug Prevention Programs?

The military has a number of advantages that make it well suited for supporting drug prevention programs for youth. Those we interviewed identified six advantages as particularly important. Most commonly cited were the

¹National Defense Authorization Act for Fiscal Year 1993.

organizational characteristics of the military, such as individual and institutional discipline. The military's organizational image as being drug free was also perceived as an asset. The people who make up the military are another strength; they tend to be young, ethnically diverse, enthusiastic, and, for those in the National Guard, long-term members of their communities. They also have the skills to support programs such as outdoor adventure experiences. Physical facilities are generally available, particularly National Guard armories. Finally, the military's organizational skills are seen as helpful.

On the negative side, interviewees also identified some comparative disadvantages that must be taken into account when such programs are being considered. Community outreach is far removed from the traditional mission of national defense, so the military cannot draw on most of the skills service personnel have. Furthermore, the military has a certain organizational rigidity that may impede execution of these nontraditional programs. Additionally, the military has less experience working with youth than do schools and social service agencies. Finally, military personnel move frequently, and continuity may be difficult to maintain.

However, on balance, the military can identify areas in which it can apply its special strengths and make a contribution. The National Guard may have broader applicability because of its close community association.

The Pilot Programs

Twelve programs were funded across the four services (the Army, Navy, Marine Corps, and Air Force) and the National Guard. These programs varied immensely in size, location, focus, intensity, and funding. Staffs ranged in size from 50 to 500, and locations varied from a single post (Fort Meade, MD) to nationwide (the Young Marines program). Some focused on a few school grades, and others on all youth in a state. Some programs met for an hour a week, while others operated for nine hours per week. Annual funding ranged from about \$70,000 to just over a million dollars. However, all focused on primary or secondary prevention. That is, they attempted to prevent first use (primary) or to preclude those who may have experimented with drugs (secondary) from progressing to regular use.

The pilot programs generally implemented one of the following eight types of drug prevention efforts.

- Mentoring/tutoring: creating one-to-one role model relationships

- Adventure camps: using day or longer camps that serve a variety of purposes, e.g., building self-esteem through adventure and immersion in a drug-free environment
- Physical fitness programs: promoting fitness as incompatible with drug use
- Uniformed programs: placing youth in uniforms in quasi-military organizations and stressing discipline through activities such as drill teams
- Coalition building: fostering community coalitions against drugs
- Funding civilian programs: providing funds to civilian drug prevention organizations, e.g., Drug Abuse Resistance Education
- Parent and community training: providing drug prevention training to others who work with youth
- Providing various resources: providing services and resources to promote drug prevention, e.g., repair of sports facilities, holding career days, etc.

Despite the diversity of the programs, some general observations apply to the majority of them. First, the programs were implemented successfully, and none proved infeasible or had obvious adverse outcomes. Second, the program administrators and volunteers displayed impressive enthusiasm. Third, the programs were interactive in that the youth were active participants and not passive learners. This type of program is generally regarded as more effective than passive programs.

The extent to which the program types draw on unique military attributes varies. For example, uniformed, adventure camp, physical fitness, and mentoring/tutoring programs draw substantially on multiple comparative military advantages. Conversely, coalition building and funding civilian programs do not. A useful generalization is that programs that give youth a chance to interact directly with military personnel tap military comparative advantage.

Cost and Effectiveness of Pilot Programs

An analysis of direct dollar expenditures and, where possible, in-kind contributions led to the following conclusions:

- Most programs cost the Office of the Secretary of Defense between \$100 and \$600 per youth per iteration or year.
- Mentoring and tutoring programs cost the least but use the most volunteer-hours.

- Some new programs, such as Drug Education for Youth (DEFY), were initially quite expensive per youth, but this was due in part to the initial investment required to design and start a highly structured program and the small number of iterations the first year. Costs were reduced dramatically in the following year.
- Expenses increase dramatically when paid outside staff operate the program. Programs that use military and civilian-duty volunteers and military facilities (such as armories) are less expensive.
- Programs' self-evaluations of cost per youth generally include only direct costs and do not include overhead costs of preparing and administering the programs.

Are the programs effective? The best measure is the effect of the program on drug use, and, unfortunately, none of the conditions required to measure that effect reliably were in place for this study. However, it is possible to estimate how effective the programs would have to be—in terms of reduced initiation—for the projected reduction in social cost to outweigh the program cost. Put another way, knowing the social costs associated with a single career of drug consumption, we can ask how many careers would have to be prevented to recoup the program costs. Using this approach, a program that cost \$100 per youth would have to accomplish one of the following to be cost-effective:

- prevent 0.6 percent of participating youths from initiating cocaine use, or 3 percent from taking up marijuana
- delay initiation of cocaine use by four years for 2.5 percent of the participants, or cause a four-year delay of marijuana use for 15 percent.

These estimates are rough and, while broadly correct, could be off by a factor of two or four. Still, they allow some insights. First, on average, a year of cocaine use imposes costs on society about seven times as great as a year of marijuana use, so programs that only affect marijuana use are less likely to be cost-effective. Thus, programs need to target those at risk for using hard drugs. Similarly, programs that delay use for four years yield less than one-fourth of the benefit of completely preventing drug use. Hence, programs that only delay drug use need to reach a large portion of the participants to be cost-effective. Second, comparing the thresholds of effectiveness to what is known about comparable programs suggests that a number of the military programs are cost-effective, particularly mentoring/tutoring. Third, the high start-up costs of the DEFY pilot programs probably preclude their being cost-effective in FY 93, but in FY 94 the

cost per youth fell to one-sixth its FY 93 levels and is projected to fall still further in FY 95, so the national expansion should be more cost-effective.

How Did the Programs Affect the Military?

It is important to ask how the programs affect the military in general and readiness in particular because the military's first mission is defense. Readiness may decline to the extent that dollars, time, and other resources are diverted from the primary mission. Clearly, funds spent on the pilot program could have been used for purposes that contribute more directly to readiness. The adverse impact on readiness of time devoted to the program was substantially mitigated by the voluntary nature of the programs and the fact that most volunteers participated at a relatively low level (an hour per week or a weekend per year). Use of physical resources (e.g., gasoline to transport youth) had an adverse impact simply because of cost. Use of facilities (e.g., armories) had little to no effect on readiness because military activities took priority over the pilot programs, and the programs caused minimal wear and tear. In general, then, the outreach programs appear to have had a modest impact on readiness.

On the other hand, these may have been partially offset by modest positive effects in terms of morale, preparation for presenting military-relevant skills such as first aid, and opportunities for junior personnel to practice leadership and organizational skills. There were also benefits derived from improved community relations. We note, however, potential for adverse effects on community relations, if, for example, a program were summarily canceled or a youth were injured while participating.

The pilot programs were so small (about 10,000 youths, and less than 0.002 percent of the defense budget) that the magnitude of these effects on the military overall was necessarily modest. By how much could the programs expand? Certainly the number of youth at risk for drug use is so great that lack of need would never constrain expansion. The primary limitations are the number of volunteers, number and location of facilities, and budget constraints. Taking these limitations into account suggests that the programs could not be expanded by more than a factor of 20 or 25 without changing their basic character (e.g., by making greater use of nonmilitary sites and personnel). Expanding the program by a factor of 20 would reach 200,000 youths and cost \$100 million. Thus, military programs will reach far fewer youths than, say, the Boy Scouts, which has 3.4 million members.

Program Attributes

Our analysis of the pilot programs suggests that six program attributes should be considered in establishing or expanding such programs. These are

- Rely on volunteers. This will keep program costs low and draw on the comparative strengths embodied in military personnel.
- Individual programs should be of modest size. This will limit the effect on readiness relative to community relations benefits.
- Programs should be designed locally. This will allow the programs to address the most pressing community needs and take advantage of local resources.
- Central leadership is needed. This can provide model programs, promote information sharing, and supply technical advice and training.
- Target programs for youth at high risk for drug abuse (but not at the most troubled youth). Military programs should target youth with real need but who can be helped by volunteers without professional training.
- Short programs should not be ruled out. Although sustained programs yield the greatest benefits, short programs can have an effect, and these tend to facilitate military participation.

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1. Overview of the Study

Introduction

It is widely recognized that controlling illicit drugs requires demand-side as well as supply-side interventions. Since the past few years have seen an end to the decade-long decline in self-reported drug use among youth, interest in greater drug prevention efforts has risen sharply. Because of the military's success in reducing drug use among its ranks and because of its history of conducting community outreach programs, the military has been called on to increase its role in reducing the demand for illegal drugs by youth.

In particular, the National Defense Authorization Act for Fiscal Year 1993, Section 1045, required that the Secretary of Defense "conduct a pilot outreach program to reduce the demand for illegal drugs. The program shall include outreach activities by the active and reserve components of the Armed Forces and shall focus primarily on youths in general and inner-city youths in particular." The Act further called for the Secretary of Defense to submit a report to Congress not later than two years after passage of the Act "that assesses the effectiveness of the pilot outreach program and includes the recommendations of the Secretary regarding the continuation of the program."

This document reports the results of a study conducted by RAND that provides information relevant to that report to Congress. The information was gathered primarily by site visits and phone interviews with program administrators, staff, participating youth, parents, and associated community leaders, supplemented by literature review, background research, and supporting calculations.

This section provides an overview of the study, which discusses (1) whether the military is potentially well suited for this mission, (2) the pilot programs that were implemented, the extent to which they drew on military comparative advantage, their costs, and estimated cost-effectiveness, (3) the effects of these programs on the military including effects on readiness, and (4) some attributes that would be desirable in military programs intended to reduce demand for illegal drugs among youth.

Subsequent sections elaborate and support the conclusions provided in this overview. Section 2 describes the pilot programs themselves. Section 3 discusses the extent to which they drew on military comparative advantages in preventing

drug use among youth, suffered from military comparative disadvantages, and were in accord with some of the major themes in the literature. Section 4 summarizes information about the cost and cost-effectiveness of the programs. Section 5 discusses the impact of the pilot programs on the military. Section 6 offers detailed discussions and support for the desirable program attributes that are listed at the end of this section. Appendix A offers a brief guide to the literature on drug prevention. Appendix B contains technical information about the cost-effectiveness modeling.

Is the Military Well Suited for Reducing Demand for Illegal Drugs Among Youth?

Military Comparative Advantages

The military has characteristics that make it particularly well suited for supporting programs to reduce the demand for drugs among youth, but it also has limitations or weaknesses. Before discussing these advantages and disadvantages, it is useful to point out two factors that might be construed as giving the military comparative advantages in this arena but that are not, in fact, substantially relevant.

First, as demonstrated by surveys of substance abuse and health behavior among military personnel, the military has substantially reduced drug use by service people since 1980. Drug use in the military was cut primarily by (1) recruiting more selectively, (2) widespread drug testing, and (3) imposing sanctions, including dismissal, on those who failed drug tests. None of these tactics is relevant for reducing drug use among civilian youth.

Second, more generally the military has extensive experience in changing the behavior of young people. However, lessons and tactics that apply to an 18 year old who has volunteered for military service, has been through boot camp, and is subject to military authority and discipline are of limited relevance to 12-year-old civilian adolescents with no formal association with the military who participate in an outreach program for a few hours each week. The partial exception to this may be the uniformed youth programs, which are described later.

We asked those interviewed to describe the comparative advantages they perceived that the military possessed in the area of preventing drug use among youth. Their responses fell into six categories: organizational characteristics, organizational image, personnel, skills, physical resources, and ability to organize and execute programs.

Organizational Characteristics. The most commonly cited distinguishing characteristic of the pilot outreach programs was discipline. Discipline is relevant in two respects. First, refraining from using drugs is an act of self-discipline, and military personnel are excellent role models of self-discipline. Second, the military has a comparative advantage in creating highly structured environments; many youth, particularly at-risk youth, live in understructured environments and seek structure.

Other military values play a secondary but not insignificant role. For example, some pilot programs emphasized physical fitness and/or strove to create a sense of responsibility on the part of youth for their peers and for the larger community.

Organizational Image. The military has a reputation for being drug free that creates credibility in this area. More generally, studies such as Monitoring the Future and the Youth Attitude Tracking Study find that a substantial fraction of youth have high regard for the military. The youth we observed, particularly the younger children, were often enthusiastic about interacting with military personnel and reacted positively to the uniform and other military accoutrements. We also met youth who were hostile toward other drug prevention providers such as schools, police, and traditional youth organizations but who expressed respect for the military.

Personnel. Military personnel are ethnically diverse, are young relative to many potential volunteer pools, and are enthusiastic about volunteering. National Guard members in particular are typically long-term members of their community, giving them interest, insight, and credibility for implementing youth outreach programs.

Skills. The military is well endowed with skills relevant to providing some types of prevention programs, such as outdoor adventure, ropes courses, physical fitness classes, training more generally, and bilingual mentoring.

Physical Resources. The military has physical resources that can be used for prevention programs, notably National Guard armories, which can serve as community centers, and larger installations, which can be used for outdoor adventure programs and camps.

Ability to Organize and Execute Programs. Many of those interviewed cited the military's skills in defining, planning, and executing its missions as being applicable to the development and operation of social service programs; other service organizations may lack these abilities. This special ability was

demonstrated in some of the pilot programs, which quickly established or significantly expanded their programs.

Military Comparative Disadvantages

We also asked interviewees if there were aspects of the military that make it ill suited for supporting drug prevention programs. Their responses can be summarized by the following four categories.

Community Outreach Not a Traditional Mission. Running community outreach programs to reduce the demand for illicit drugs by youth is far removed from the mission of national defense, so the outreach programs do not take advantage of most of the valuable, specialized skills in which military personnel are trained. Community outreach will also inevitably be a small portion of the active-duty military's activities and, hence, cannot receive a high priority relative to other activities.

Organizational Rigidity. The military has many rules and procedures that may serve other military functions but that impede efforts to support community outreach programs. For example, giving inexpensive motivational items to youth participants (e.g., T-shirts with antidrug slogans or refreshments at meetings) may be useful but can conflict with regulations forbidding giveaway items. Conversely, there are restrictions on soliciting funding and other contributions from private businesses. More generally, several program administrators reported that narrow interpretations of what constituted "drug-demand reduction" activities created bureaucratic delays.

Lack of Experience Working with Youth. The military has less experience working with youth than do schools, social service agencies, or health care providers. Military personnel need the cooperation of parents and/or teachers to identify and recruit youth, address the emotional needs of young children (e.g., at an overnight camp), integrate the outreach programs into the youths' other activities, etc. Also, most military personnel are not trained or prepared to deal with youth who have special needs, such as those who are emotionally disturbed.

Turnover. Active-duty personnel move frequently, limiting the duration of a commitment they can make to an outside program. Many volunteer roles do not require an extended commitment, but turnover can be a problem with mentors, program administrators, charismatic leaders, and commanding officers. Many of the pilot programs were successful because of the unusual energy and dedication

of the program administrators and/or key volunteer leaders. Such individuals cannot always be easily replaced.

Potential for Duplication of Other Drug Prevention Efforts

One concern with the pilot outreach programs is that they might duplicate other federal, state, or local drug prevention efforts. We observed no evidence of such duplication with the current pilot programs.

There are several reasons for this. First, although most youth receive some drug prevention instruction from a source other than the military, that does not mean that they would not benefit from hearing it from the military as well. Multiple exposure to prevention messages can be reinforcing, and the literature strongly supports collaborative, multiagency prevention efforts.

Second, as Section 5 elaborates, there are so many youth at risk for drug use that the military could never reach more than a very small fraction of them. Hence, the community outreach programs can be selective, targeting youth with real needs and avoiding duplication.

Third, the pilot programs demonstrate that the military can support a wide variety of drug prevention programs. In the unlikely event that the entire region surrounding a military facility were saturated with one kind of drug prevention message, the military could simply conduct a complementary program.

Finally, not only did other drug prevention agencies not complain that the pilot programs duplicated their efforts, with only one exception, they welcomed the military's participation.

Relationship to Principal Mission

For the active and reserve components, national defense is the only principal mission. This suggests that community outreach programs should be conducted only to an extent that the impact on readiness is minimal; effects on readiness are discussed later in this section and in Section 5.

The National Guard, in contrast, has a dual mission, serving the state and community as well as the nation. Hence, National Guard resources allocated to community outreach are not in opposition to its principal mission; serving the local community is part of that mission.

Summary

The military has special, unique advantages as well as some disadvantages with respect to conducting community outreach programs. Since the need for drug prevention is so great, it is possible for the military to identify niches where it can take advantage of its special strengths and make a useful contribution. The appropriate niche for the National Guard may be broader and more resource-intensive than that for active and reserve components.

The Pilot Programs

Description of the Pilot Programs

Twelve demand-reduction programs were funded in FY 93 and FY 94 and will be funded in FY 95. Some were initiated by the pilot program; a few were already well established; most existed in some form but were significantly changed and expanded by the pilot program. All focused on primary or secondary prevention, i.e., preventing first use and/or preventing youth who may have experimented with drugs from progressing to regular use. None pursued tertiary prevention (moderating use of established users) or treatment interventions, which is appropriate given the nature of the military's strengths.

The 12 pilot programs were diverse in terms of type of program, target population, and geographic location. Table 1.1 summarizes the characteristics of the twelve programs. Details are provided in Section 2. Several programs combined different subprograms. For example, Fort Sam Houston implemented both a mentoring and an adventure camp program. However, most of the pilot programs' components fall into one of eight categories, as shown in Table 1.2 and explained below.

Mentoring/Tutoring. Mentoring (e.g., Oregon Mentors) and tutoring (such as Navy Kids) are distinct. The essential feature of both is the creation of a one-to-one role model relationship between a volunteer and a youth through regular interaction, but tutoring focuses more on academic support whereas mentoring programs are more flexible. Typically mentors/tutors meet with youth for an hour per week at the youth's school, but there were variations. For example, Navy Kids bused the youth to naval installations to reduce the time commitment for tutors, and Drug Education For Youth's (DEFY's) requirement of four hours of meetings per month included one hour each of interactive workshops and special events involving both the youth and the mentor.

Table 1.1
Characteristics of the Pilot Community Outreach Programs

Service/Program	Program Status	Location	Target Population	Duration and/or Intensity of Program	Number of Volunteers	FY 94 Budget
Army						
Fort Sam Houston	Expanded	San Antonio, TX	4th-5th graders in E. San Antonio schools	Weekend or 1 hr/wk	~265 ^a	\$162,464
Fort Meade	Expanded	Anne Arundel Co., MD	Fort Meade elementary, middle, and high schoolers	Ongoing, varies by program	>278 ^b	\$111,500
Fort Campbell	Expanded	Hopkinsville, KY/ Clarksville, TN and Fort Campbell	8-18 year olds	5 days ^c @ 8 hrs/day	n/a	\$122,200
Navy						
DEFY	New	26 sites nationwide	4th-6th graders	8 days plus ~1 hr/wk	127 ^d	\$900,000
Navy Kids	Established	Washington, D.C.	3rd-8th graders in 10 D.C. schools	Ongoing for 1 hr/wk	584	\$338,000
Young Marines	Established	Nationwide	9-18 year olds	Ongoing for 3 hrs/wk	300	\$503,000
Air Force						
Cannon AFB	New	Clovis, NM/ Portales, NM	Clovis and Portales youth	d/n/a	~105	\$160,470
Shaw AFB	New	Sumter, SC	Sumter, SC, youth	d/n/a	~100	\$1,028,019
National Guard						
Kansas	Expanded	Kansas State	Kansas youth	d/n/a	n/a	\$500,066
Illinois	Expanded	Illinois State	7-18 year olds	Ongoing for 9 hrs/wk	n/a	\$640,000
New York	Expanded	New York State	9-18 year olds	Ongoing for 3 hrs/wk	52	\$614,979
Oregon	Expanded	Oregon State	Elementary and middle school students in 38 Oregon schools	Ongoing for 1 hr/wk	507	\$72,500

^aMentors program only.

^bAccounts for 70% of units.

^cFor youth participating in Task Force Teen.

^d127 volunteers for just the Oakland, CA, and Pensacola, FL, sites, not the entire national program.

d/n/a = does not apply; n/a = not available.

Table 1.2
The Eight Categories of Pilot Community Outreach Programs

	Mentoring/ Tutoring	Adventure Camps	Physical Fitness Programs	Uniformed Programs	Coalition Building	Funding Civilian Programs	Parent and Community Training	Providing Various Resources
Army								
Fort Sam Houston	✓	✓						
Fort Meade	✓							✓
Fort Campbell		✓			✓	✓	✓	
Navy								
DEFY	✓	✓						
Navy Kids	✓							
Young Marines			✓	✓				
Air Force								
Cannon AFB						✓	✓	
Shaw AFB					✓	✓		
National Guard								
Kansas							✓	
Illinois			✓					
New York			✓	✓				
Oregon	✓							

Adventure Camps. Quite a few sites implemented camp programs, either during the day (e.g., DEFY and Fort Campbell's Task Force Teen), over a weekend (La Salida at Fort Sam Houston), or longer (Young Marines and New York National Guard Corps of Cadets [NYNGCC] summer encampments). Camps serve a variety of purposes, including building self-esteem and teamwork through adventure experiences such as ropes courses, exposing youth to positive military role models, and immersing youth in an environment that is explicitly drug free. One limitation of camps from the perspective of prevention is their limited duration, but DEFY, Young Marines, and NYNGCC offer regular follow-up activities throughout the year.

Physical Fitness Programs. Physical fitness is an important component of Young Marines and NYNGCC, but the Illinois National Guard Operation First Choice (OFC) is explicitly designed around using physical fitness to promote a drug-free lifestyle. The premise is that drug use is fundamentally incompatible with fitness, so if youth value and pursue fitness, they will shun drugs. OFC also promotes drug prevention by teaching youth about goal setting, delayed gratification, and responsibility to community, in addition to providing some more-conventional drug education. OFC is also notable for its intensity; youth participate three hours per day, three days per week.

Uniformed Programs. Young Marines (YM) and the NYNGCC put youth in uniform in quasi-military units. The closest familiar model is Junior Reserve Officer Training Corps (JROTC). YM and NYNGCC do not teach combat skills in any form, but the youth are promoted through ranks, learn basic formations and marching skills, and are organized and administered through a military-style command structure.

The uniformed programs seem to thrive in disadvantaged neighborhoods and are dramatically successful at creating a highly structured environment and promoting discipline; the units consistently get 50 or more energetic youth to conduct precision marching maneuvers or to stand silently at attention for extended periods of time. The hope is that by learning this discipline, and having an alternative, positive group with which to identify, participating youth will stay away from drugs and related activity.

Coalition Building. The literature on drug prevention stresses the need for cooperative, communitywide coalitions in addressing substance abuse and other youth problems. Some of the pilot programs sought to use the military's presence as a catalyst to the formation of these coalitions. In some cases this coalition building was ancillary to other activities; at Fort Campbell it was a central component of the program.

Funding Civilian Programs. Some of the outreach programs (notably the Air Force programs) sought to promote drug prevention by funding existing, nonmilitary prevention activities. The activities funded spanned the spectrum from recreational alternatives, to Drug Abuse Resistance Education (DARE) instruction, to individual counseling, and to communitywide events such as Red Ribbon Week activities.

Parent and Community Training. Several pilot programs trained others or paid for the training of others to deliver the prevention message, either directly or by training still other people who would work directly with the youth. The Kansas National Guard program focused on getting parents and parent-trainers educated about parenting skills related to reducing substance abuse. Canon Air Force Base (AFB) funded the training of individuals to deliver the Beginning Alcohol and Addictions Basic Education Studies (BABES) drug prevention curriculum.

Providing Various Resources. Fort Meade's Adopt-A-School program matched each of the 11 schools in the Fort Meade High School Feeder System with a unit at Fort Meade. Most of the units provided some sort of mentoring or tutoring, but they also provided a wide array of other services and resources to the schools, ranging from administering career days, to building athletic fields, to fixing a broken scoreboard.

Similarities Among the Pilot Programs

Despite the enormous diversity across the 12 pilot programs, several observations apply to the majority of the programs and these eight types of program components. First, the programs were implemented successfully; none proved infeasible or led to any significant adverse outcomes. Second, the dedication and energy displayed by the program administrators and volunteers was truly impressive. Third, the programs were what the literature refers to as "interactive"; the youth are not passive learners but active participants in the programs. Interactive programs are thought to be more effective than noninteractive programs. Fourth, the drug prevention message was embedded within a broad set of activities.

Extent to Which Programs Draw on Unique Military Assets

Section 3 considers the extent to which the eight types of programs listed above draw on military comparative advantages, suffer from comparative disadvantages, and are in accord with recommendations in the literature. The

results, based on interviews, direct observations, and a review of the literature, are summarized here.

Uniformed, physical fitness, and adventure camp programs all draw substantially on multiple military comparative advantages. Mentoring and tutoring draw on somewhat fewer comparative advantages, but that is because the programs are so straightforward. For example, they do not draw on the military's physical resources simply because they do not use specialized physical resources.

In contrast, coalition-building and funding civilian prevention providers do not draw on many military comparative advantages, except the military's organizational image and organizational abilities. Family and community training draws only on these and on military personnel's skill in training.

The activities covered under the eighth type, providing various resources, varied in the extent to which they drew on military comparative advantage. At one extreme, simply turning surplus stock over to schools taps no particular military advantage other than its physical resources. At the other extreme, conducting a career day at a military site does take advantage of the military's organizational image, personnel, skills, and organizational ability.

An oversimplified but useful generalization is that programs that give youth a chance to interact directly with military personnel, either as a mentor or in a group activity, tap military comparative advantage. Programs that work indirectly through coalitions, parents, or other prevention providers, though important and valuable, are less likely to draw on talents and resources that are unique to the military.

As indicated above, there are disadvantages to using the military in drug outreach programs, and these fall into four categories: outreach not a traditional mission, organizational rigidity, lack of experience in working with youth (as opposed to young adults), and turnover. Based on interviews and our observations, the first two categories seemed to affect all programs roughly equally. Lack of experience working with youth obviously affects programs in which military personnel interact directly with youth. Turnover affects all programs but is most problematic for sustained programs such as mentoring and tutoring.

Although we cannot directly evaluate the effect of the pilot programs on drug use, we can determine if the programs are consistent with recommendations in the drug prevention literature regarding what constitutes an effective program. Overall, the programs accord with the literature in two important aspects. First,

as supplemental programs, they align with the multidimensional systems approach the literature recommends. Second, the pilot programs were all interactive, and the literature recommends this type over those in which the participants are passive.

Costs of the Pilot Programs

Section 4 describes the costs and cost per youth of the various pilot programs, which are summarized here. Dollar values are not imputed for volunteer hours committed to the program that did not interfere with the performance of military duties precisely because those hours were volunteered.

Note: When comparing costs in this context, high-cost programs are not necessarily less efficient, because there are differences in the quantity and nature of the prevention services delivered. For example, DEFY is more expensive than La Salida, but the DEFY camp lasts a week, not just a weekend, and is followed by mentoring. Costs should also be interpreted with a recognition of idiosyncrasies of individual program circumstances, as described in Section 4.

Several conclusions emerge from the cost analysis:

- The dollar cost to the Office of the Secretary of Defense (OSD) for most programs is between \$100 and \$600 per youth per iteration or year.
- Mentoring and tutoring programs are the least expensive and most volunteer-hour intensive.
- Some new programs, such as DEFY, appear to be quite expensive per youth, but this is due in part to their small scale and the initial investment required to design and start a highly structured program.
- Expenses increase dramatically when budgets are used to pay salaries for outside staff to operate the program. Programs that use military and civilian-duty volunteers and military facilities (such as armories) are less expensive.
- Programs' self-evaluations of cost per youth generally include only direct costs and do not include overhead costs of preparing and administering the programs.

Cost-Effectiveness of Pilot Programs

To evaluate a drug prevention program, one would like to measure its benefits as well as its costs. Unfortunately, to assess directly in a credible manner the impact

of the pilot programs on illicit substance use, the programs would have to have been implemented with control groups, provision been made for reasonable follow-up periods, and sample sizes been large enough to distinguish program effects from random variation. None of these conditions pertained. Hence, direct evaluation of the outcomes of the pilot programs in terms of reduced illicit drug use was impossible. Some of the services surveyed youth before and after participation in the programs; these surveys can provide useful process information, but no valid inferences can be drawn about impact on substance abuse because of low base rates, small sample sizes, high attrition, inadequate control over selection, lack of random assignment, inadequate follow-up periods, and reliance on self-reporting.

It is possible, however, to work backward from knowledge of typical patterns of consumption, conservative estimates of the social costs associated with substance abuse, and the costs of the pilot programs to determine how effective the programs would have to have been, in terms of reduced initiation, in order for the projected reduction in social cost to exceed the program cost.

In essence, if one knows what a typical career of consumption entails, what the total cost to society of all use is, and how much consumption there is in aggregate, one can compute an average social cost per career of drug use. Then one can ask how many such careers would have to be prevented to recoup the costs of the prevention program.

Section 4 describes these calculations. The exact results depend on the cost apportionment method used, but essentially a program that costs \$100 per youth would have to do any one of the following to be cost-effective by this measure:

- (1) prevent 0.6 percent of participating youth from initiating cocaine use,
- (2) delay initiation into cocaine use by four years for 2.5 percent of youth,
- (3) prevent 3 percent of youth from initiating marijuana use, or (4) delay initiation into marijuana use by four years for 15 percent of youth.

Of course prevention programs would typically provide some of each of these four types and benefits, and combinations of these outcomes would also make a \$100/youth program cost-effective. For example, if such a program prevented 0.3 percent of participating youth from initiating cocaine use and 1.5 percent from initiating marijuana use, it would satisfy this criterion for cost-effectiveness.

Four things need to be understood about these results. First, the prevention outcome required for cost-effectiveness increases linearly in program cost. For example, a \$500-per-youth program whose only effect was preventing initiation of marijuana use would have to prevent 15 percent (not just 3 percent) of youth from initiating marijuana use to meet this criterion.

Second, the percentages cited are of all youth in the program, not just youth who would have initiated use in the absence of the prevention program.

Third, the measure of social cost underlying these estimates considers only costs that can be quantified relatively easily, including criminal justice system costs; hospital costs related to drug abuse; income lost from missed work resulting from morbidity and mortality associated with drug use, participation in drug-related crime, and incarceration for drug offenses; and property damaged or destroyed in drug-related crime. Other costs of substance abuse are excluded, including pain and suffering of drug users, their friends and family, and victims of drug-related crime; crime-avoidance costs (e.g., cost of people and commerce avoiding neighborhoods plagued by drug-related crime); and most of the harms and violence associated with drug markets and drug distribution, as opposed to drug use. Even though these costs are less easily quantified, they are no less real or relevant. Hence, a program that fails to meet the above criterion for cost-effectiveness could still be cost-effective and only fail to meet this criterion because of the difficulty of measuring the full costs of substance abuse. Likewise, the pilot programs generate benefits other than reductions in substance abuse that are not considered in these calculations.

Fourth and most important, the estimates are rough. For example, they do not consider costs of the abuse of substances other than marijuana and cocaine. They are correct to within an order of magnitude, but they could easily be off by a factor of two or four. They are computed using the best current knowledge about the cost-effectiveness of prevention, but improving this knowledge and refining the underlying models to achieve precision to within a factor of two would require a study devoted specifically to that issue.

Despite these caveats, the thresholds offer several insights, each of which is elaborated in Section 4. First, the societal cost per cocaine user is about seven times that per marijuana user, so programs whose only effect is to prevent or delay initiation of marijuana use are not likely to meet this criterion for cost-effectiveness; it is important to target youth who are at risk for using hard drugs. Likewise, delaying an initiation for four years yields less than one-fourth the benefit of completely preventing an initiation. Hence, programs that only delay drug initiation and do not actually prevent it require large percentages of delayed user initiations to achieve cost-effectiveness.

Second, comparing the thresholds for effectiveness to estimates in the literature of the effectiveness of comparable programs (when available) suggests that a number of the programs are probably cost-effective, particularly mentoring/tutoring. Camp programs also appear to be cost-effective, but that is

more difficult to judge because they are rarely evaluated in the literature and are of limited duration. Common sense suggests that the uniformed programs are cost-effective because they provide a very intensive intervention over extended periods at moderate costs. However, stronger statements are not possible because there are no truly comparable civilian programs, and, thus, there is no extant literature on their outcome effectiveness at reducing drug use.

Third, the FY 93 DEFY pilots do not appear to be cost-effective. However, this was because of the high start-up costs required to design and implement a new program. The proposed national expansion should operate more cost-effectively.

Again, the definition of effectiveness considered here is quite narrow: The only benefits considered are those pertaining directly to reduced drug use. All of the pilot programs seek, however, to provide benefits other than reduced drug use, such as improved physical fitness or better performance in school. Although the pilot programs should have some explicit focus on drug use reduction, not all of a program's activities need be explicitly about drugs. Indeed, it is perfectly reasonable for the outreach programs to try to provide benefits other than reduced drug use, and even for those other benefits to exceed in some cases, the benefits of reduced drug use.

Effects on the Military

An important question is what effect the pilot programs had on the military. We examine this issue from a number of aspects: first, what the effect was on the military as a whole, and, second, what the effect was relative to the size of the program. We also assess the military's potential to expand the program, the effects on readiness and community relations, and the relation between the pilot programs and other drug prevention efforts. Section 5 gives a more detailed discussion of these issues.

Overall Effect and Potential for Expansion

The pilot programs had a negligible effect on the overall military because they were so small. The programs consumed a tiny fraction of the overall defense budget (less than 0.002 percent) and involved fewer than 3,000 volunteers. However, it is important to ask, by how much could the programs be expanded? Certainly, more demand exists than the military could ever satisfy. Based on data in the 1991 National Household Survey on Drug Abuse, we estimate that at least 18 million youth between the ages of 12 and 20 are at risk for drug abuse. The pilot programs reached about 10,000.

Three factors limiting the military's ability to expand the program are the number of volunteers, the number and location of the facilities, and the funds available. To gain a sense of what might be possible, we determine how much of an asset was used by the program, compare it with the total available, and compute a ratio as an indicator of maximum possible expansion. For example, the volunteer rate averaged 1 to 1.5 percent for the units involved in the program. Those figures suggest that the military population of about 4 million could produce between 40,000 and 60,000 volunteers. The pilot programs had between 2,000 and 2,500 volunteers, implying an upper bound on proportional expansion of a factor of about 30. Following the same procedure for the other two factors, we conclude that the maximum expansion for the program would be a factor of about 20. Expanding by a factor of 20 would allow the program to reach 200,000 youth and cost about \$100 million, about four hundredths of one percent of the total DoD budget. At such a level, the absolute magnitude of the impact of the programs on the military would still be modest, although this would represent a significant fraction of the DoD counterdrug budget.

Effect on Readiness

The military's primary mission is national defense, not drug prevention. Thus, it is important to assess the effect of the program on readiness. Adverse effects are of most concern, but we also explored the possibility of positive effects.

To assess any adverse effects, we examined three areas: dollars, time, and other resources. Clearly, money spent on outreach programs could have been spent on items more directly related to readiness, e.g., training exercises.

Time spent on the program can also affect readiness detrimentally. The effect depends on whether the time devoted to the program detracts from duty performance. Most volunteers participated at a level that need not affect duty performance. But some volunteers put in a great deal of time. For example, commanding officers of some Young Marines units volunteer 10 to 25 hours a week, and commitments of this scope clearly have the potential to adversely affect readiness. National Guard time devoted to the program generally did not affect readiness because if Guard personnel worked in the program full time, their salary was on the budget. Other commitments came out of personal time and affected neither weekend drill nor summer training.

In-kind expenses such as electricity for lights and gasoline to transport youth are best thought of in the same way as dollars spent on the program. Use of facilities such as armories had a negligible adverse impact on readiness because

conventional uses were always given scheduling priority over the outreach programs, and program use imposed negligible wear and tear on them.

In sum, then, there were only modest negative effects on readiness. Partially offsetting these were some positive effects. We repeatedly heard testimony of improved morale as a result of program participation. Some of the programs provided a training benefit to participating personnel who taught military-relevant skills such as first aid.

Community Relations

The interviews suggest that the programs affected base-community relations positively. In some cases the effect was dramatic; in other cases, it simply reinforced good relations where they already existed. We conducted a computer search of articles written about the programs and followed up with phone calls to some of the reporters. In general, the publicity was most favorable for programs that focus on youth from low-income neighborhoods and was most extensive in small towns.

We note some potential for an adverse effect on community relations. This could occur if a program were launched with considerable fanfare and then summarily terminated—for example, as a result of a change in base commanders. Other possible adverse effects include death or serious injury to a youth while participating in the program, or commission of a crime by youth identified with the program.

Possible Interactions with Other Programs

The pilot programs could interact with other drug prevention programs, either positively or negatively. For example, if the volunteer pool in a particular location is small, the pilot programs might divert volunteers from other programs. On the other hand, the programs might induce people who had not been involved to work in the programs. Coordination with other drug prevention efforts is obviously advisable.

Desirable Program Attributes

The pilot programs suggest attributes that are desirable in community outreach programs. Six such attributes are listed here with brief explanations. Section 6 elaborates on the rationale behind each.

Rely on Volunteers

The dominant military contribution to outreach programs should be personnel, not financial resources, and the majority of active-duty personnel hours devoted to drug prevention programs should be volunteer hours. That is, the active-duty services should not employ people full-time to be prevention counselors for people not in or related to the military. Doing so would not tap substantial military comparative advantage, it would compete with other budget priorities because military personnel are relatively expensive, and large budget items may be vulnerable to future cost cutting. (The strong preference for relying primarily on volunteers does not extend to the National Guard because of their dual mission. Indeed, the Guard already conducts a variety of community outreach programs outside the auspices of Section 1045, some but not all of which encompass drug prevention.)

It is often necessary, however, to have full-time administrators to coordinate the efforts of volunteers. Likewise, the volunteers' efforts can often be leveraged by modest expenditures on supplies and other physical resources. Hence, even volunteer outreach programs can generate dollar costs, but the dollars should facilitate volunteers, not form the military's principal contribution to the program. There are other federal organizations that distribute block grants to prevention agencies.

Another reason to rely on volunteers is that staff enthusiasm is often as important to changing youth behavior as program design or structure. With rare exceptions, people should not be ordered to participate in these programs.

Individual Programs Should Be of Modest Size

Both the benefits and the costs of outreach programs increase as the size of the program at a particular site increases, but some increase faster than others. The adverse impact on readiness might be negligible for small programs that employ only the most enthusiastic volunteers but might increase more than proportionally as the program expands. In contrast, community relations benefits may derive as much from the existence of a program as from its size. This suggests that the highest ratio of benefits to costs may come from smaller programs, as long as they are large enough to justify fixed overhead costs.

Programs Should Be "Invented" Locally

Programs should be initiated and, to a great extent, designed at the base level, so they can take advantage of local resources, be tailored to the local community's needs, develop partnerships with local organizations, and create pride in ownership at the local level.

Our observations also confirmed the consistent message in the literature that prevention programs are best conducted "with" not "to" the community. The military has unique assets to bring to this drug use problem, but it generally does not have all of the resources or talents necessary to efficiently deliver these programs alone; partnerships can allow the military to focus on the tasks for which it has the greatest comparative advantage.

The most common example of such partnership is relying on schools to identify the youth and chaperone them to and sometimes during programs. It is also important to be able to refer youth to other services if the need should arise.

Another example is seeking complementary funding from non-DoD (Department of Defense) sources. This helps elicit active cooperation from the other funding agency, ensures the program will not disappear if DoD funding is eliminated, and can mitigate problems associated with any interruption in OSD funds.

Central Leadership Is Needed

Saying that programs should be designed locally and involve collaborative relationships with community agencies does not mean there is no role for central leadership. At the site level, base and unit command level support is crucial. This support need not involve significant resources; simply giving enthusiastic endorsement may be enough. But, without such support, community outreach programs will generally be much less effective.

National-level leadership can increase program effectiveness by

- providing model programs that can be used as a template by people interested in starting a new program
- facilitating information-sharing among programs, e.g., by hosting conferences for program administrators
- providing technical advice
- ensuring that training and other precautions are taken to minimize the risk of harm to the youth (such measures cannot eliminate risk, but they can reduce negligence).

Target Programs

As discussed above, to be cost-effective, community outreach drug prevention programs should seek to enroll youth who are at high risk for drug abuse, particularly abuse of hard drugs. A solid 50 percent of youth will not use drugs; they do not need additional prevention programs. Many others only experiment with drugs. They could benefit from prevention programs, but prevention has the potential to generate greater benefits when directed toward youth who may become regular users or abuse hard drugs.

At the other extreme, there are a small number of youth at great risk who need the attention of professional counselors, not just dedicated volunteers. In some cases, asking volunteers to work with such individuals not only will not serve the youth well, but also can have an adverse impact on the morale of the volunteer and possibly disrupt the program for other youth. Military prevention programs should focus on those in between, for whom there is the greatest chance of making a difference.

Note that the need to target does not imply that there are entire geographic communities that do not need prevention programs. Drug abuse is not as concentrated geographically as some media reports suggest. In particular, substance abuse problems are not confined to the inner city; rural areas often have substantial problems with drug abuse.

One reasonable strategy might be to target economically disadvantaged youth who cannot pay for, or otherwise obtain access to, comparable programs. As an example, Young Marines and the NYNGCC focus on youth who do not have access to Scouts.

Youth can also be targeted by age. Rates of initiation into drug use are highest during junior high school, so the last year of elementary school and the junior high school years may be particularly valuable times to intervene, although the timing should reflect local needs and resources.

Program Length

Some of the programs (See Table 1.1) were of limited duration, raising the question of whether they can have a sustained impact. All other things equal, longer prevention programs are more beneficial to the youth. The literature consistently reports a need for follow-up programs and "boosters." This does not mean, however, that the outreach programs should be restricted to long programs, for several reasons.

First, all other things are rarely equal because there is an opportunity cost of extending a program. Giving 100 youth six years of mentoring is clearly better than giving 100 youth one year of mentoring, but the choice between giving 100 kids six years of mentoring and 600 youth one year of mentoring is not so clear.

Second, the military should not be viewed as the only provider of drug prevention programs. A short military outreach program might provide a useful booster to ongoing, school-based and mass media prevention efforts.

Third, some intervention is better than none, and it may not always be possible to provide a sustained intervention. For example, a naval unit that deploys for six months each year might not be able to mentor youth over an extended period, but it could conduct a camp or outdoor adventure program of shorter duration.

Thus, sustained prevention efforts are better than short interventions, but short interventions can still play a role in community outreach efforts.

2. Descriptions of Twelve Pilot Programs

This section describes the 12 pilot drug-demand reduction programs. Information provided here consists of a general background and history for each and observations of particular interest in a number of categories, including the target population for the program, program interaction with the community, characteristics of the volunteers and methods of recruiting them, the nature of the drug education provided through the program, and the administrative resources allocated to operate each.

The descriptions are primarily based on information obtained by RAND staff during visits to the programs when they observed program activities if possible, interviewed program staff and commanding officers for the installations, met with community representatives and other key informants, and conducted focus group sessions with program youth, parents, and volunteers. For those programs that could not be visited, telephone interviews were conducted with program staff and other key informants. The dates of the visits and phone calls and the names and positions of key informants are indicated in the Sources subsections at the end of each program description. Additionally, the descriptions have been supplemented by data from the evaluations provided by the services. All interviews took place in 1994.

The final subsection indicates the names of additional key informants interviewed.

Fort Sam Houston

Program Description

Fort Sam Houston's *mentoring program* began in early 1991 under the direction of the 5th Army chaplain, Colonel William Clark. The idea of an army-sponsored mentoring program was presented to the garrison commander by the United Services Automobile Association (USAA), a large insurance company based in San Antonio that serves current and former U.S. military officers. USAA itself provides mentors to a number of San Antonio's westside public schools and is an active presence within the city's network of community service agencies and private industry outreach efforts. Other organizations with mentor programs in

the San Antonio area include the FBI, the Federal Reserve Bank, and Randolph, Kelly, and Brooks Air Force bases.

Chaplain Clark volunteered to coordinate the mentoring program from his office in the Army Religious Center with the help of his assistant, Nancy Moore. They began with 25 mentors in January 1991 and currently have over 265 in the program working with 10 elementary and middle schools in or around the city's east side, where Fort Sam Houston is located. The program began in an elementary school within walking distance of the post, in an economically depressed area with a largely minority population. The other schools are mostly in similar communities. In some cases, the mentor has followed his student to the high school level to continue their relationship. Mentor volunteers come from both military and civilian employees on post, all ranks and pay grades. They are asked to spend a minimum of an hour a week with the students, visiting with them at school, during or after regular school hours. Mentor training is not heavily emphasized; the chaplain's assistant and the secretary at the Religious Center provide administrative support for the program and a lot of moral support to the mentors through regular group meetings and one-on-one problem solving.

Fort Sam Houston's Office of Drug-Demand Reduction (DDR) launched *La Salida Weekend* in 1992 and now regularly runs the adventure/challenge camp for 5th and 6th grade boys and girls from area public schools, many of whom also participate in the mentoring program. The event is held at Camp Bullis, a military installation on the outskirts of San Antonio. It takes place six times a year, scheduled not to conflict with the maneuvers and other training activities normally conducted there. The youth camp was developed in 1991, prompted by the interest of two now-retired generals after seeing an adventure camp for kids held at Camp Bullis through outreach efforts by the base's Religious Center. The DDR office recruits various units from the base to host the camp in turns; the host unit provides the volunteer military staff and logistical coordination with oversight from the DDR office.

The format of the camp is two days with an overnight stay; youth are assigned to hutments and leaders who take their units through a series of classes (such as CPR and dental hygiene), physical challenges (rappelling, "slide for life," a ropes course), and social activities. Parents are invited for the end-of-camp graduation, and DDR is currently developing workshops on parenting skills to increase their participation in the program.

Observations About the Program

Target Population. In the 1993–94 school year, the Fort Sam Houston mentors program had around 265 mentors, working with somewhat fewer protégés because some mentors worked cooperatively with one protégé (two or three mentors working with only one student). The program has set a goal to provide mentors for 400 students who have, to date, been identified as at risk and in need of mentoring. Not enough mentors have been recruited yet to meet the goal, however.

Male and female students are mentored in 10 eastside San Antonio elementary and middle schools. The schools were recruited for the program one at a time, initially approached through the principal by the 5th Army chaplain whose office directs the mentors' program. Currently, an advisory council that includes the chaplain's coordinator for the program, a representative from the San Antonio school district, and the principals from the schools oversees program policy and makes recommendations on which schools should participate. Chaplain Clark sees the advisory council as a key element for the sustainability of the program as a community effort. The program is aimed at students from the economically disadvantaged, largely minority neighborhoods of the east side, close to Fort Sam Houston and therefore sharing with the installation a common interest in raising the quality of life in their community.

Selection of students for mentoring is the responsibility of a school coordinator assigned to the program. The school coordinator is typically a counselor and generally uses the Title 19, Texas Administrative Code and Statutory Citation's definition for identifying at-risk youth. It is not clear how consistently the definition is applied or whether the students who participate are those originally intended for the program.

Students who attend La Salida weekend are 5th–6th graders in east San Antonio area schools where Fort Sam Houston's DDR office has developed relationships with the schools and other agencies through its general outreach efforts in the neighborhoods around the army post. Some of the participating schools are in the San Antonio school district, but others are outside its boundaries.

Elementary school youth in the La Salida program attending San Antonio schools feed into a common middle school, a desirable feature of La Salida because it serves to acquaint 5th graders from one elementary school with those from other elementary schools with whom they will be attending middle school in the coming year. The chance to meet and potentially become friends with youth from other feeder schools may reduce the anxiety of going to a new school otherwise full of unfamiliar faces.

La Salida attendees are a roughly equal mix of male and female students selected by the schools. Selection is either at the classroom level with individual attendance dependent on parental permission, the family's schedule, etc., or done by teachers and counselors across all eligible classes who identify particular students, not necessarily the most at risk. One principal noted that they did not want the kids to perceive the invitation as either a reward or a punishment and therefore aimed at a mix of student types. Despite the program goal to serve at-risk students, it appears that selection operates primarily at the school level, potentially involving schools having a greater-than-average percentage of at-risk students overall but not in all classes.

Community Reactions. School administrators have welcomed Fort Sam Houston's mentoring program. The first approached was Pershing Elementary, a school near the military post, with 95-98 percent African-American and Hispanic-American enrollment and a principal very enthusiastic about fostering a relationship with the military. The military post has always been a major presence in San Antonio's east side, but there had been little interaction between military members and residents and some distrust. Winning over the general community took time but seems to have occurred to a significant degree. For example, one San Antonio community activist noted that there had been a misperception among eastside residents that weapons originating from Fort Sam Houston had been making their way to drug dealers in their neighborhoods, but that fear has been allayed by an improved feeling about the fort as a result of its increased participation in neighborhood affairs.

The DDR office at Fort Sam Houston has a strong collaborative relationship with local community organizations. In addition to running La Salida weekend, it has become involved in community events around east San Antonio such as neighborhood cleanups and revitalization activities as part of the Weed and Seed program. These events have been an opportunity for both the military members and the residents to learn about one another.

Volunteers. Mentors are drawn from the military (active, reserve, and retired) and civilian staff at Fort Sam Houston and currently number 265. The program goal is to have mentors from all ranks and pay grades, but they are weighted toward higher ranks. Having senior officers as mentors to set an example for the younger and lower-ranking military members was used to recruit volunteers initially. Now the Religious Center advertises the program as open to anyone with a high school diploma to encourage enlisted personnel to join, because it fears there is a perception that one has to be well educated to serve as a mentor. Civilian employees on post and retired and reserve-duty members are very much encouraged to participate. For civilian employees, the availability of

administrative leave from their jobs is determined by their unit commander, and generally time spent mentoring has to be made up. For many civilians, their willingness to volunteer may depend on the availability of leave. The sharing of a mentee by two or even three mentors is acceptable and is attractive to the civilian employees in order to make the commitment less burdensome. Active-duty volunteers, on the other hand, do not require duty leave for mentoring and are more likely to take on a mentee alone.

As with the mentoring program, La Salida is dependent mainly on its volunteers to carry it out. The DDR office recruits various tenant commands at Fort Sam Houston to host iterations of the weekend camp, an event held six times a year. The host command provides event-level coordination and logistical support, headed by the unit commanding officer (C.O.). In the iteration RAND observed, a young officer was assigned to coordinate all aspects of the effort as training for planning and executing operations of a comparable scale. The other volunteers come heavily from the host command but are also drawn from other units on post, some members signing up for every iteration they are able to attend. Many of La Salida's volunteers are young, single, physically fit military members who relate easily to the kids and, in their roles as hutment leaders and event leaders, form intense role-model relationships with the youth. Other, nonmilitary, volunteers come from the school district, the San Antonio police department, and community groups such as San Antonio Fighting Back. An important figure who participates in every iteration is the volunteer keynote speaker at the Saturday barbecue, Willie Mitchell. Mr. Mitchell, former NFL football star, is a San Antonio community activist who talks to the youth about his experiences as an athlete who has chosen not to use drugs.

Drug Education. The mentoring program does not include formal drug education for the mentored youth. Rather, the mentor serves as a role model, a surrogate family available to the youth to deal with many of life's problems, including drug use. Protégés raise issues relating to drugs and drug use with their mentors and they are discussed. La Salida is a more formal, experiential drug program, making the message clear to the kids what the weekend is about. They learn from T-shirt slogans, antidrug marches, their hutment leaders who talk to them about the dangers of using drugs, and reinforcement from DARE officers who remind them throughout the physical challenges and other activities of the benefits of staying drug free.

Administrative Resources. The mentors' program is run from the post's Religious Center under the direction of the 5th Army chaplain. Chaplain Clark, having turned the day-to-day administration over to his assistant, Nancy Moore, does not devote a significant percentage of his time to the mentors' program.

Nonetheless, his access to persons high in the command is an essential feature of the program. Nancy Moore spends 65 percent of her time on the program, but notes that it needs her full time. The additional time she spends is her volunteer contribution. She has clerical support from a person who spends 35 percent of her job on the program.

La Salida is administered by the fort's DDR office under the direction of Chief of Joint Counterdrug Operations Steve Hillyard and Major David Merritt, who is also assigned to Joint Counterdrug Operations. Mr. Hillyard and Major Merritt participate mainly as volunteers in the La Salida weekends and the neighborhood revitalization efforts they are involved in. Major Merritt's assistant, Captain Gavin Tullis, spends half of his time on the program, providing oversight, continuity, and general problem solving for La Salida weekends. He, too, lends a significant amount of volunteer time to the program.

Other Resources. Schools participating in the mentors' program provide a coordinator who is responsible for matching the students with a mentor and generally monitoring the program from the school's end. If the school elects to organize special events for the mentors (for example, an "appreciation night" dinner attended by mentors and students), it is coordinated by this individual.

La Salida is dependent on the availability of Camp Bullis, a military training installation located on the outskirts of San Antonio. Thus, the military is donating the use of its buildings and fitness challenge equipment (obstacle courses, "slide for life," rappelling tower), picnicking grounds, etc., and transportation equipment. The program also relies on donations from community agencies, generally in kind, such as food and items that the military cannot purchase.

Sources

RAND project staff visited the Fort Sam Houston mentoring program on May 13, meeting with Chaplain William Clark, the director of the post's Religious Center. RAND interviewed the mentoring program director, Nancy Moore, as well, and conducted a focus group with eight mentors. The team was given a driving tour of San Antonio's east side to observe the schools where the mentoring program operates and visited Davis Middle School to conduct an interview with Joyce Williams, a counselor and mentor program coordinator.

RAND staff visited the La Salida program at Fort Sam Houston on May 13-15. During that time, they met with and interviewed Major Dave Merritt and Steve Hillyard, Chief of the Joint Counterdrug Operations office. They visited Kirby

Elementary, a school that has sent two groups of students to La Salida weekends, interviewed the principal and counselors, and conducted a focus group with eight children who had been to the camp. They watched La Salida activities firsthand at Camp Bullis and talked with the principal players involved in running the event including LTC Hodges, the C.O. of the medical battalion hosting the weekend for their third time; the captain of the company with principal responsibility for that weekend; two DARE officers from the Military Police who attend the weekend events and lend support in providing the antidrug message; the Saturday night picnic speaker, Willie Mitchell, former Kansas City Chiefs football star; the base commander; and retired General Buck Walters, who was an originator of the program. During the visit, the team also met with a number of community agency representatives involved in drug prevention programs, with whom Fort Sam Houston's DDR office collaborates, including Beverly Watts-Davis, director of San Antonio Fighting Back; Beverly Cox, who is with the U.S. District Attorney's office; Rebecca Frobase, executive director of the Alamo Federal Executive Board; and Linda Thomas, the volunteer coordinator for Fort Sam Houston.

Fort Campbell Drug-Demand Reduction Program

Program Description

Fort Campbell's Youth Drug-Demand Reduction (YDDR) program is run from the base's Army Drug and Alcohol Prevention and Counseling office. The program provides drug prevention outreach to youth in military and nonmilitary families in the communities of Hopkinsville, KY, and Clarksville, TN, and in families located on base. The program concentrates largely on coalition building within the three areas. It also features a summertime week-long day camp, called Task Force Teens, which brings 30 teens selected by the coalitions to the base for skill-building sessions, including drug awareness and resistance, and activities using army equipment, such as the COBRA flight simulator and the rappelling tower. Military volunteers run the camp under the direction of Laura LaChance, the YDDR program coordinator attached to the post's Office of Substance Abuse (OSA). Her other responsibilities include working with the base schools' Just Say No clubs, which use military volunteers as leaders and are mainly organized through the Fort Campbell volunteer office.

Another drug education program sponsored by YDDR is Talking With Your Students About Alcohol. Programs extend beyond youth participation, as well. For example, the Hopkinsville coalition is organizing a Family Wellness Training program on family counseling for community members to include the Fort

Campbell chaplains. And OSA is sponsoring a parent training component called Talking With Your Kids About Alcohol.

Observations About the Program

Target Population. Fort Campbell's YDDR program does not itself target a particular population. Rather, the fort sponsors a number of subprograms through the three coalitions it supports. Each program involves a different population of youth, some of whom may not necessarily be considered at risk. For example, the Just Say No clubs recruit interested students under the age of 15 who commit to remaining drug free and support each other in their commitment. The Task Force Teens program, a major focus of YDDR, draws youth from various sources, including media advertising, and is open to all teens in the areas of Hopkinsville, KY, and Clarksville, TN. (One iteration of the camp, however, was restricted to teens who were already enrolled in substance abuse counseling as high-risk youth.)

Community Reactions. The fort's volunteer coordinator noted that relations between the post and the surrounding communities have always been good. Fort Campbell is a very large installation, and Hopkinsville and Clarksville recognize that their economic health depends to a significant degree on the presence of the post. The success of the YDDR coalition-building effort offpost was uneven, however. Hopkinsville already had a group called Champions Against Drugs with which the YDDR program could work. Champions is one of Kentucky's statewide regional substance-abuse coalitions and is in a position to work as a partner with Fort Campbell and contribute resources to its own as well as Fort Campbell's drug prevention programs. Tennessee, on the other hand, has a different system for funding drug abuse prevention and treatment that is less compatible with coalition building. The YDDR staff report that resistance has been met with from treatment agencies in Tennessee where there is not the centralized, reasonably well-funded prevention effort that Kentucky has established.

Volunteers. The Fort Campbell YDDR program does not rely heavily on volunteers. Task Force Teens requires around 10 volunteers to run the program, and the Just Say No clubs need volunteer leaders, but otherwise the programs they fund do not use volunteers. There are a lot of opportunities for volunteering on post, such as for youth sports coaching and work with the American Red Cross. The greatest number of volunteers, however, are serving in job training positions or are taking courses provided through the fort's volunteer office in order to learn new skills. Those who volunteer for a program like Task

Force Teens tend to be officers' spouses who have an interest in youth and drug prevention because they have children. And there is a lot of turnover between iterations of Task Force Teens among these volunteers.

Another reason that Fort Campbell has low potential for volunteer recruitment is the transience of the staff. Many of the military personnel are on very short rotations, and Fort Campbell has a high deployment rate. The program apparently has not chosen to exploit more fully the civilian staff as volunteers.

Drug Education. The YDDR-sponsored programs offer a range of types of drug education. Task Force Teens, an adventure camp program, provides youth with drug education classes as part of a larger experience that includes fitness challenges using air assault equipment and a focus on self-esteem- and trust-building, refusal skills, stress management, and decisionmaking. The Just Say No clubs are aimed at helping preteens stay drug free, and the "Power of the Positive Male" and the "Young Women of the Nineties" provide one- or two-day seminars that focus primarily on teaching teens about substance abuse.

Administrative Resources. One of OSA's family assistance specialists, Laura LaChance, coordinates the Fort Campbell YDDR coalition as 60 percent of her job. She and her supervisor, Ron Struble, director of OSA, are active participants in the Hopkinsville and Clarksville coalitions, but the coalitions are chaired and run by members of community groups in those towns. The coalitions sponsor and/or run their programs using YDDR funds.

Sources

RAND staff conducted telephone interviews with Laura LaChance, family assistance specialist for Fort Campbell's Army Drug and Alcohol Prevention and Counseling office on July 26; Debbie Gaydos, Fort Campbell's volunteer coordinator, on August 18; and Dr. Ron Struble, Chief of the Office of Substance Abuse at Fort Campbell, on August 19. Major Rod Leary, U.S. Army Drug and Alcohol Operations Agency staff, was interviewed on May 24.

Fort Meade Adopt-A-School

Program Description

Fort Meade's Adopt-A-School (AAS) program started in 1993 when Fort Meade was under the command of Colonel Menser, founder and guiding force of the program in its early stages. Fort Meade has recruited 10 commands from different services and of varying sizes (e.g., the First Recruiting Brigade and an

army hospital) and the civilian National Security Agency (NSA), all located at Fort Meade. Each unit or group has adopted one of the nine elementary schools and the middle school or high school in the Fort Meade High School feeder system. The types of activities the military members provide vary according to needs identified by the schools and the capabilities of the units. Most of the units are mentoring and tutoring students at their adopted schools, establishing youth clubs, and also planning and implementing one-time events that bring the military members together with the students, such as outings and in-school activities. The NSA, in a different vein, has provided a range of resources in addition to its personnel's time, including donations of equipment and supplies and repairs of school-owned equipment.

Fort Meade's Army Community Services (ACS) office under director Tom Rogers provides central administration of the Adopt-A-School program. ACS hired a consultant from Interlog, Jean Popakis, to coordinate the program for the units and schools. She works with the school administrators, the unit commanders, the volunteer coordinators within the units, and the volunteers themselves and handles budget requests and other administrative matters, as well as general problem solving.

Observations About the Program

Target Population. Fort Meade's Adopt-A-School program is intended to serve at-risk youth in the Fort Meade High School feeder system, which includes nine elementary, one middle, and one high school. The high school and middle school are located on post, as are four of the elementary schools. Five of the elementary schools are in Anne Arundel County, which is close to Fort Meade. A large number of the youth are military family members (95 percent in one on-post school) or have parents employed in civilian government jobs based at Fort Meade.

Most of the units have established or are setting up mentoring programs, making it the most common activity for which volunteers are recruited. At the end of the past school year, there were close to 100 volunteers serving as mentors in the nine schools that had mentoring programs. The units that have focused primarily on mentoring (many of them for the elementary schools) are having the most difficulty sustaining their programs, however. The AAS program may, in effect, be most successful in reaching the general school population rather than the at-risk students.

Activities other than mentoring implemented by the volunteer units are tutoring (the high school has an active program that reached 100 students last year), a

"junior human resource council" in one of the elementary schools, a peer development group for motivating interest in academics, and a "Saturday Scholars" academics program in another of the elementary schools. A number of units have hosted special events for their schools—field trips, career days, fingerprinting the kids, inviting them to the unit. Some of these events involve a larger number of youth requiring less of a personnel commitment than mentoring, and using these types of events has been suggested by the unit coordinators as a more reasonable goal for the units given their difficulties with volunteer recruitment.

Community Reactions. Community reactions to the Fort Meade Adopt-A-School were generally positive, which is not surprising because so many of the students involved are in military families or families of civilians working for Fort Meade tenant organizations. Administrators from two of the schools noted that they thought the volunteers' uniforms have a positive impact on the youth, and they are happy to see the volunteers wearing them, although it is not an emphasis of the program. But while the educators welcomed the military units into their schools and reported no adverse reactions from parents or other community members, one negative note was sounded. Some of the school administrators reported disappointment and frustration because the promised programs were not implemented as a result of what appeared to be disorganization or lack of interest among the volunteer units.

Volunteers. The Adopt-A-School program is dependent on volunteers at several levels: the command, the unit program coordinator, and the "cadre." The motivation for commanders to sign up to adopt a school was in part an interest in giving their unit personnel an opportunity for outreach volunteerism, but also in response to the garrison commander's appeal for command participation in the program. The unit commanders participate in the program administration and activities at various levels and to varying degrees of effectiveness but are themselves dependent on a program coordinator among their staff who handles the day-to-day management. In some cases, the program coordinator volunteered to serve in the role, but others were "volunteered" by their commanding officer. Someone who is selected for the role rather than having stepped into it is less likely to be successful in motivating others to volunteer and in providing the support necessary to plan and implement programs for the school. And it was noted by the Army Community Services office program coordinator that in some cases, the lines of communication have not been good between the commander and the coordinator, compounding the difficulty of sustaining a program solely through volunteer efforts.

The number of volunteers participating from each of the 11 commands ranges between zero in some, in which administrative and other problems have stymied any activity, to 190 from NSA, where there is a large pool of personnel from which to recruit. NSA is the exception, however; the average number of volunteers among the other 10 units is around 12. How many people are available depends, in part, on the size of the unit, but also on the type of unit. In the First Recruiting Brigade, for example, a large percentage of the staff travel for a significant portion of their jobs. Another problem is that many of the units contain a large number of civilians among their staff who may not be given administrative leave for time spent doing volunteer work. While NSA does have a high percentage of civilian employees, it is also able to provide administrative leave for those working in the Adopt-A-School program and therefore has not suffered as some of the other heavily civilian units have.

Drug Education. The drug prevention education that the 12 commands participating in Adopt-A-School provide to students at their schools is primarily through mentoring programs. As mentors, volunteers aim to raise students' self-esteem by providing strong relationships with adults who listen to them and from whom they can learn life skills that will lead them away from drug use. Also each school has been given a budget for ordering anti-drug-use-related materials such as educational videos.

Tutoring and support of academic and hobby clubs are other aspects of the programs that also involve interaction between volunteers and students, potentially as role modeling.

And finally, some programs include donations from the units that upgrade school equipment (particularly computer hardware) and supplies, not directly related to drug education but intended to enhance the students' academic experience.

Administrative Resources. Administrative oversight for the Adopt-A-School program has been given to Tom Rogers, director of Army Community Services, who spends a small percentage of his time on this program among a number of others for which he is responsible. Working full time on the program since November of 1993 and until June of 1994 has been Jean Popakis, a consultant who provided coordination between the schools and units. It was noted that Tom Rogers was critical to the program because, in his position, he has access to command-level staff who have volunteered their time and units. On the other hand, there was also a degree of frustration noted by the ACS staff about their inability to coordinate between the schools and the units in cases of conflict. The garrison commander, who inherited AAS from his predecessor, is available for

high-level oversight. But he has not been as accessible for day-to-day matters as his predecessor was, and the program has suffered. Also, with the large number of programs involved in AAS, there has been insufficient administrative support in areas such as mentor training. Unit coordinators reported a lack of documentation on procedures as well as varying perceptions among them about appropriate guidelines for such issues as contact with the youth outside of school.

Other Resources. Each school assigns a program coordinator for AAS. Other school staff might become involved in AAS activities, as well; the number depends on the extent of the programs implemented. At Fort Meade High School, for example, along with the assistant principal, who has been designated program coordinator and makes the most consistent commitment of time (he estimates 10 percent of his job), there are 6 to 10 counselors and other staff who also spend time through their involvement with the student clubs and role model programs that have come out of AAS. At the other schools, the amount of time devoted by staff to AAS is much less because the programs are less extensive.

Sources

RAND project staff visited Fort Meade May 24–26 and during that time interviewed Army Community Services Director Tom Rogers and Adopt-A-School Program Coordinator Jean Popakis. They met in a group session with representatives (mainly the coordinators) of the 11 units on base that have adopted schools; visited five of the schools, three elementary, one middle, and one high school, and met with school administrators and counselors; and participated in a focus group conducted with nine students at Fort Meade High School. Major Rod Leary, from the U.S. Army Drug and Alcohol Operations Agency staff, was interviewed on May 24.

Drug Education for Youth (DEFY)

Program Description

The DEFY program was developed by the Department of the Navy in 1992 through its Drug-Demand Reduction Task Force (DDRTF). The program began as a two-site pilot at naval installations in Pensacola, FL, and Oakland, CA, in the summer of 1993 with plans for expansion after the second year to 24 additional sites nationwide. Currently, the projected expansion is under way.

DEFY is presented to 9–12-year-old at-risk youth in two phases. Phase I is an eight-day summer day camp held at the sponsoring naval installation and run by service and civilian volunteers. Much emphasis is placed on conducting a thorough, five-day training program for volunteers by the DDRTF. Phase II is a mentoring program, also using service and civilian volunteers, for the youth who attended the summer camp in Phase I. In the Pensacola pilot site, youth came from both military and nonmilitary families. In Oakland, all of the youth in the program attended a school outside of those serving families from the Alameda Naval Air Station. This exclusive focus on the nonmilitary community engendered some resentment from service people.

The Phase I day camp is presented in seven modules that draw heavily from existing youth program curricula, modified for the particular goals of the DEFY program. Five of the modules focus on specific areas for skill building: drug knowledge, self-esteem and peer-leader training, a youth organization fair, physical fitness training, and a challenge course. Two modules focus on field trips and indoctrination and graduation activities.

Phase II is the mentoring component of the program. Camp participants are assigned a mentor from among service and civilian personnel, with whom they might develop a role model relationship that provides reinforcement of what they learned at the camp. Mentors are required to see their protégés a minimum of four hours per month, which includes one hour each of interactive workshops (designed to bolster the lessons learned in Phase I) and special events (such as community service and cultural events).

Observations About the Program

Target Population. DEFY youth are 9–12 year olds, male and female, identified as at risk for drug abuse. Youth selection for the pilot programs varied by site. In Oakland, the national program coordinators approached the mayor's office, which subsequently coordinated with the school district and the Chamber of Commerce in selecting a school. Lockwood Year Round Elementary was chosen because it is in an economically disadvantaged area that is currently targeted for revitalization through a number of federal programs to which DEFY has been added. DEFY students were all African American, Hispanic American, or Asian American, reflecting the diversity of their neighborhood. Very few of the students self-reported having initiated drug use prior to entering the program.

The parents of 200 students attended a general meeting about DEFY, at which they were encouraged to fill out an application form provided by the DDRTF. Sixty-five students applied, many of them through the encouragement of the

school principal and staff who made phone calls to their parents. The school was told that the program wanted to serve students at risk for drug use who were not yet involved. The principal did not want it to appear as either a reward or punishment and encouraged a range of students to apply, both those with leadership potential and those particularly in need of a role model.

The Pensacola selection process was different. Youth from military families were selected on a "first come, first served" basis, while the civilian youth were nominated by community agencies and selected for a variety of reasons.

Community Reactions. The Oakland Chamber of Commerce, headed by a retired naval member, has been enthusiastic about the DEFY program and supported it. The mayor's office for the city of Oakland welcomed it as well, and feels that it is appropriate that Naval Air Station (NAS) Alameda along with the many other military installations located in Oakland involve themselves in their communities. The first event for the Phase I youth was a trip to the installation when President Clinton arrived to sign an agreement to turn over naval installation land to the city of Oakland, a visit which generated much excitement among the school administration and the students. There is clearly interest on the part of both the military and the city to maintain good relations. The city and schools were pleased to find that parents in Lockwood showed great interest in having their children in DEFY, as demonstrated by the large turnout of parents at a general meeting about the program.

Volunteers. The DEFY program has been implemented as a "top-down" initiative, originating in the Navy's DDRTF and brought to installations through both the interest and willingness of the local command and what are perceived to be the needs of the communities where they are located. Perhaps as a result, program coordination at Oakland is the responsibility of staff who either have been assigned to carry it out along with their other duties (e.g., the program director) or have volunteered but are able to spend a significant part of their time on the program even though it is not part of their regular military duties (e.g., the camp director). DEFY's budget does not cover any of the program positions.

While having funded positions for at least a minimal level of administrative support is desirable, it is not clear whether it helps for recruiting and retaining volunteers. Volunteers may be better motivated by other volunteers. The mentors who participated in the RAND focus group were enthusiastic and dedicated and were all assigned to a unit supervised by a program volunteer administrator. When RAND talked to protégés, however (not ones matched with the focus group mentors), they found that a good part of the youth were not

satisfied because their mentors did not see them even enough to fulfill the program requirement.

Drug Education. DEFY's Phase I program, an eight-day camp, provides a specific curriculum for teaching youth about drugs. The first module in the curriculum offers facts about drug use through a series of lectures. Two of the other modules (one on self-esteem and peer-leader training, and the other involving physical fitness training) bring the negative aspects of alcohol, tobacco, and other drug use into the exercises. The students involved in RAND's focus group reported learning about drugs as a prominent feature of their camp experience.

For Phase II, the mentoring component of the program, the mentor develops a relationship with his or her mentee that potentially involves discussions about drug use, the effects of drugs, how to resist them, and so forth. The Navy's evaluation of DEFY reported that some of the Oakland mentors were under the impression that drug use was a topic that they were specifically not supposed to discuss with their protégés, although this was not the case in Pensacola. Neither the mentors nor the protégés in the RAND focus group indicated that drugs were a common topic of discussion.

Administrative Resources. Implementation of DEFY at NAS Alameda was managed in a relatively brief period of a couple of months, because the Navy's DDRTF handled much of the public relations and negotiations with community agencies and brought a highly packaged program ready for use to the installation. The DDRTF conducted an effective training of a group that included those who would ultimately carry out the program and even provided some of the staff who conducted the day camp. This level of support has enabled the local program staff to set Phase II into motion with the expenditure of many fewer resources than would have been necessary without it. Nonetheless, the program has required a significant amount of time from Commander Lorin Andersen, acting executive officer when the program began and currently director of Family Services, the office where the program will continue to reside. He is currently shifting responsibility for running DEFY over to two program coordinators: Petty Officer Phillip Schneider, who devotes 50 percent of his job as a DARE officer to the DEFY program, and assistant supply officer LT Christi Jones, who estimates that she spends at least an hour a day of her own time on program administration.

Sources

RAND staff visited the Alameda Naval Air Station and city of Oakland on June 20–21. They interviewed DEFY program coordinator Commander Lorin Andersen, director of Family Services; mentor coordinator Petty Officer Phillip Schneider; and camp director Lieutenant Christi Jones. They interviewed Commander Thomas Lee, executive officer of NAS Alameda. Also on site, they conducted a focus group with seven military members serving as mentors in the DEFY program. They conducted a focus group with seven student protégés at Lockwood Elementary school and interviewed a Lockwood support teacher, who coordinates the program for the school, and Dr. Joseph Jenkins, Lockwood's principal. They visited the Oakland mayor's office and met with two policy analysts, one responsible for the area of drugs and crime and the other for education policy.

Navy Kids

Program Description

Navy Kids was founded in 1988 by then Vice Admiral Jeremy Boorda (currently Chief of Naval Operations [CNO]) who, along with a number of other high-level Navy personnel, gave it the support it needed to become a sustained program. The idea was to use naval command staff to tutor students in Washington, D.C., schools, providing academic assistance and role models for inner-city youth. Students are transported from their schools by buses supplied by the program to a naval command unit where volunteers spend an hour of their workday each week with a tutee assigned to him or her. Contributing to the program design with Vice Admiral Boorda were a former superintendent of the D.C. school district, Dr. Andrew Jenkins; Rear Admiral Walter Davis; and Rear Admiral (Ret.) Pete Cressy.

Navy Kids was originally intended to provide tutoring to 3rd graders but evolved over the years to allow the schools to determine the grade levels of participants. Each elementary school is matched to a naval command that provides the volunteer tutors and coordination required to bring the tutors and tutees together once a week at the naval facility for an hour of school work plus fun and games. The schools are responsible for selecting students, generally allowing the teachers to make recommendations. Students are selected based on academic need as well as emotional need for strong adult guidance. The types of units participating vary from two naval commands at the Pentagon to the National Naval Medical Center, with some commands providing over 100

volunteer tutors and others significantly fewer. Both civilian and military personnel participate, civilian more heavily. There are currently around 600 tutors at 10 naval commands working with 400 school children from 13 Washington, D.C., schools.

Observations About the Program

Target Population. The target population for the Navy Kids program is at-risk youth in elementary schools in Washington, D.C. Selection of the schools for participation is the responsibility of the D.C. public schools Parent Involvement and Community Support office, drawing from a pool of elementary schools self-identified as willing and able to take part. It has not been unusual for school administrators to go out of their way to secure a spot in the program, because the overall reputation of the program is favorable.

The schools use their own selection criteria for identifying students appropriate for the tutoring program. These include consideration of a student's academic needs along with the degree to which he or she would benefit by a relationship with a positive role model. Some schools are using the tutoring program to enhance teaching in a particular academic area, such as reading, and therefore look for students who are weak in that subject. As the tutoring program has gained recognition among the children as a fun and rewarding activity, more of the students and their parents are asking for them to be included so that there is an element of self-selection in some of the schools. A result of the growing popularity of the program is that there are more children who would like tutors than there are tutors available.

Community Reactions. The Navy Kids program has high visibility and acceptance in Washington, D.C., which is not surprising for the nation's capital—heavily populated by military and civilian government personnel. At one school where RAND conducted a focus group with students in Navy Kids, a high percentage of them had military members or civilian government workers in their families. At another school where the students were not as familiar with the military, the kids professed interest in the Navy ships and other equipment that the program gave them an opportunity to visit. The chance to spend time at the Navy Yard and other installations appears to draw the students. And it has been noted by the schools that they have received requests from parents who want their children in the program.

Volunteers. Navy Kids sites are procured by the program's director, Commander James Black. In some cases, he has had to persuade the commanding officer and in others the interest originated within the command

because of the high visibility of Navy Kids. Likewise, some site coordinators are "volunteered" by their superiors, whereas others stepped up to the position after having served as tutors. The considerable amount of work involved requires that the coordinator is either highly motivated by personal interest to be in the position or has a high degree of support and sufficient hours of leave provided by the command for doing the work.

Tutors are recruited by the site coordinators, and most who volunteer are accepted after submitting biographical information. They are made to understand that their commitment is for the entire school year and must be taken seriously. The weekly time commitment, however, is minimized as much as possible in this program. Students are brought to the command for one hour each week with occasional special activities. Multiple tutors are encouraged to "buddy up" with one tutee, or a substitute is provided for one day, so that travel schedules will not interfere with there being a tutor available each week. The Navy does not consider the frequency of travel and transfers among their staff to be an impediment to the program. Most tutors can fulfill a year's commitment to the program, sufficient for the tutor-tutee relationship. A tutoring program can use buddies and substitutes more easily than a mentoring program can.

Tutors receive an hour of orientation from Commander Black at the beginning of the school year, which serves as more of a welcome and introduction to the program than tutor training. Tutoring guidelines are enforced to some degree by the individual commands. Sites are encouraged to make available an open area, such as a cafeteria, where tutors can work individually with the students but in one place. In commands where this is not possible, the site coordinator may institute an informal policy of randomly checking on tutors and tutees to ensure that activities are limited to helping with homework assignments and play such as using a computer or investigating naval equipment.

Drug Education. Navy Kids has not provided a drug education curriculum. The director and coordinators explained that the antidrug message was implied through role modeling by professional, drug-free naval personnel. Navy Kids also seeks to provide an antidrug message through special programs and by distributing various materials. Nevertheless, students did not identify Navy Kids as a drug program or volunteer that they had learned about the dangers of drugs through Navy Kids when talking about it in the focus group sessions. Navy Kids plans to add a drug education curriculum in FY 95.

Administrative Resources. The director of Navy Kids is Commander James Black, a Navy reservist who works directly with the volunteer units and the schools. His is a full-time position that requires much more than 40 hours a

week. It might not be possible to find another as dedicated and enthusiastic as he is to run the program were he unavailable.

Each naval command has a site coordinator with overall responsibility for the program for his or her site. Each site coordinator is required to have at least two deputies who help coordinate with the schools on bringing the students in, matching them with tutors, finding replacement tutors, attending site coordinator meetings, etc. Coordination rests mainly in the hands of these site coordinators, rather than with the tutors or school personnel. One site coordinator reported that she spends upwards of 20 hours a week on the program.

The school has its own point of contact with overall responsibility for the logistics of getting students on the bus and letting the naval unit know who is coming. As noted above, however, the schools tend to provide less support than the naval commands.

Sources

RAND staff visited the Navy Kids program in Washington, D.C., May 25–26 and interviewed Commander James Black, program director; the site coordinators at two commands participating in Navy Kids; the deputy site coordinator at one of the commands; Rear Admiral Walter Davis; and Bob Gill and John Martin, director and operations officers, respectively, of the Navy D.C. Transportation Department. They conducted focus groups with students at two Navy Kids elementary schools, interviewing the principal at one school and the school coordinator at the other, and conducted a focus group session with volunteer tutors and tutees at the Naval Sea Systems Command. They also interviewed Margaret Singleton-McKnight, director, Parent Involvement and Community Support office for the Washington, D.C., public schools.

Young Marines

Program Description

Young Marines of the Marine Corps League dates back to 1958, when it was founded in Connecticut as a youth program dedicated to the promotion of self-discipline, self-esteem, and self-confidence in its members. The program has changed little over the years and continues to emphasize the virtues of order, structure, and discipline that are characteristic of the military. Young Marines have two types of uniforms: camouflage utilities with heavy boots, and physical

training outfits. They advance in rank through successful completion of tests of their knowledge of military procedures and history and win ribbons based on their mastery of various skills such as leadership, first aid, community service, academic achievement, CPR, etc.

Young Marines currently accepts into its membership boys and girls, 8–18 years old. Units meet weekly, usually in military facilities such as armories and naval annexes although some are based at nonmilitary government facilities, such as public schools. They meet in the evening, for two to three hours of military-style inspections, drills, education, and physical training led by a unit commanding officer, who is either an active-duty, reserve, or former Marine (except possibly during transitions when a Marine is not available), and his or her staff, aiming to have at least one adult for every 10 youth. Other activities include camping, hiking, field trips, and educational classes on topics that include drug prevention. An emphasis is placed on academic achievement as well, and youth are required to bring their report cards to their meeting for inspection. The program looks for a high level of participation by parents, who do much of the fund-raising.

There are currently 55 units around the country in 22 states.

Observations About the Program

Target Population. The Young Marines program is open to all youth, aged 8–18, provided that a unit has the capacity to take them. Several of the units noted that they were at full capacity and limited by the number of volunteer staff they were able to recruit, not the number of youth interested in joining. Many of the units are in urban, economically disadvantaged areas, but some are in suburban and residential rural areas. The program does not collect fees as do comparable programs such as Boy/Girl Scouts but relies on fund-raising by the youth and their parents, which may make Young Marines more attractive to lower-income families. The program does not advertise for members; the youth tend to learn about it through word of mouth, from family members, neighbors, and schoolmates.

At the Camp Pendleton summer encampment, RAND staff observed that a high percentage of the Young Marines from Southern California area units were family members of Marines. This was less true for Washington, D.C., units where some of the youth reported having family members retired from various branches of the military.

Although the program is open to youth through the age of 18, most units do not have very many youth who are over 16, unlike the New York National Guard's Corps of Cadets, a similar, uniformed youth program.

Community Reactions. When parents of Young Marines were asked in focus group sessions their feelings about having their children in a military-style, uniformed program, they reported no hesitation about it. They were overwhelmingly in favor of a program that emphasized discipline and generally hoped that their children would remain in it until they turned 18. Many had brought their children to the program in the first place, hoping that it would serve as a preventive measure to keep them from "the street" or in an effort to disengage them from people and activities they were unhappy to see them involved with already. One of the unit C.O.s, on the other hand, noted that although the majority of the largely African American community where his unit is based is very supportive, there are people who object to having their children be part of what they see as the white-run military system.

The youth reported that many of their peers were not as enthusiastic as they were about participating in a program modeled on the military, although many were and some Young Marines came into the program as the result of a friend's urging. There does not appear to be much stigma attached to being part of the program, however; and many youth said that they were proud to wear their uniforms in public.

Volunteers. An important aspect of the Young Marines program is the availability of Marines (active, reserve, retired) to serve as commanding officers of the units and as instructors. The program requires a 1:10 ratio between staff and Young Marines. Such a requirement ensures that the youth receive the attention necessary for providing them not only with instruction and supervision, but role models who can serve to some degree as mentors. The volunteers convey to the youth the ideals of military conduct—discipline, respect, and order. Youth whom RAND talked to through focus group sessions and at their national encampment spoke enthusiastically about the instructors, about their respect for them, and about the value of what they have to teach the youth.

Some Young Marines leaders reported that growth of their units was limited only by the availability of volunteers. It is particularly in suburban and rural areas away from naval installations where active and reserve Marines are based that there are few volunteers to tap.

Drug Education. Young Marines does not currently provide youth with a standardized drug education curriculum. Drug educators such as DARE officers

and Drug Enforcement Administration (DEA) special agents are invited to speak to the youth on various occasions. And individual units are free to develop their own drug education series, as Washington's "Eighth and I" unit instructors are currently doing.

There are plans for implementing a programwide drug education curriculum. A recent addition to the ribbons that the Young Marines earn is one for drug education developed in conjunction with the DEA. Youth must attend a number of classes and also teach what they learn to others to earn the ribbon. This part of the program has not been widely implemented at this time.

Administrative Resources. Jim Parker is the national director of the Young Marines. This position has only been funded since 1993 and was previously held by a volunteer. With the additional administrative support, the program has been revising its manuals and procedures and aiming to provide more standardization of programming across units. Parker is supported by an administrative assistant.

National administration is carried out by a number of regional commanders and their assistants. All national positions are volunteer and are held by unit commanders.

Sources

RAND staff visited the Young Marines national headquarters on May 25–26. During that time, staff conducted interviews with the program's national director, James Parker; two Young Marines unit commanding officers; and a number of their staff. They visited three of the Washington, D.C., units and observed youth meetings and conducted focus groups with Young Marines and their parents (separately) at two of the sites. They interviewed community representative Don Bennet of Champs, a group that supports the Young Marines, and DEA Special Agent Tom Russo, who is a Division Demand Reduction Coordinator.

On July 11, RAND staff visited Camp Pendleton to observe the Young Marines national encampment, where 20 units from around the nation had gathered. They talked with youth, parents, the volunteer staff, unit leaders, and program administrators.

Cannon AFB Community Outreach

Program Description

Cannon AFB's Office of Social Actions is headed by Dr. Charlotte Farkas, a drug and alcohol abuse prevention and treatment specialist. In 1993 she initiated Cannon's participation in the DoD community outreach pilot, with the enthusiastic support of Wing Commander Brigadier General Richard Goddard; this support has continued under current Wing Commander Brigadier General Mike Guth. Already familiar with drug prevention agencies in Clovis and Portales, New Mexico, the base's neighboring towns, Dr. Farkas invited these and other groups to submit proposals for funding programs to prevent drug demand among youth. Cannon received proposals from a number of agencies, submitted their budgets to DoD, and received an initial grant of \$144,250, which was increased in FY 94 to \$160,470.

Cannon's pilot program comprised three major components: training, funding nonmilitary prevention providers, and establishing two community outreach offices. Prominent among the activities funded by the grant is the Beginning Alcohol and Addictions Basic Education Studies (BABES), a drug prevention program in use nationwide to train adults how to teach children self-esteem, decisionmaking, and other skills for resisting drug use.¹ The Office of Social Actions coordinated BABES training for 53 Clovis and Portales area teachers and counselors the first year of the pilot program.

Another emphasis of the Cannon program was sending youth to a 12-week summer recreational camp run by Play Incorporated. Other funding went to outside agencies for establishing a high school support group in Portales for at-risk youth in need of suicide and other counseling, to purchase drug prevention materials (videos, computer programs) and computers for a youth center operated by Youth Opportunities Unlimited (YOU), and to support Curry and Roosevelt Counties' DARE programs by providing money for DARE supplies, T-shirts, and awards.

Cannon's community outreach officer in Portales and Clovis provided drug prevention materials, BABES training, and referral services.

¹OSAP, 1989, pp. 275-276, provides information about BABES.

Observations About the Program

Target Population. The program director reports that the program has not sought to target a particular population. By working with agencies that provide social services to youth, largely in high-poverty areas, the staff feel that they have been able to reach at-risk youth. Programs are aimed at youth ranging from the kindergarten level to 12th grade. The Air Force evaluators for this program estimate that it reached a minimum of 5,000 youth within Cannon military families and the community at large.

Community Reactions. Cannon traditionally has had good relations with the communities of Clovis and Portales, where many of the military members live. Dr. Farkas's office, moreover, has been working previously on drug awareness and prevention efforts, for example on the War on Drugs Council. Her staff have interacted with local counseling and treatment agencies, making referrals back and forth for military family members, and have always been regarded as part of that community. She does not believe that their community outreach has been regarded as an unusual activity for the base.

There is, however, a feeling by some agencies, such as the police department, which is involved in school-based drug prevention, that they should be the ones implementing the programs; but they appreciate that another avenue of funding is available.

Volunteers. Cannon's community outreach program involves approximately 100 active-duty volunteers. Three staff members in the Social Actions Office, an Office of Special Investigations staff member, and a childcare worker on the base have been trained in BABES, basically to enhance their job skills. The program is currently setting up a volunteer cadre among the members for next year's program, whose activities will be based out of a youth center in Portales, a refurbished armory where a room has been allocated to their outreach program by the city and the county commission.

Drug Education. Cannon's outreach effort is largely focused on drug education programming for youth. For example, it is using the BABES program to train teachers, counselors, and other childcare workers to teach youth of all ages about the hazards of drug use. It is purchasing materials for the police department's drug resistance education program, and YOU's teen center is using the grant for computer materials that it has found to be very popular and effective for teaching teens about the adverse effects of drugs.

Administrative Resources. As founder of Cannon's pilot outreach program, Dr. Farkas administers it out of her Office of Social Actions. No position was funded

for the program. Rather, the six members, including Dr. Farkas and a drug-demand reduction coordinator, Michelle Temple, who staff the office have added administration of the program to their regular duties.

Sources

RAND staff conducted telephone interviews with Dr. Charlotte Farkas, Chief of Social Actions at Cannon AFB, on July 7; and Tina Padrotti, Executive Director of YOU, on August 8.

Shaw AFB Drug Free Youth (DeFY)

Program Description

Shaw Air Force Base instituted its DeFY (Drug Free Youth) program in 1993. (Note: Shaw AFB's DeFY program is completely distinct from the Navy's DEFY program.) It centers on an advisory board that distributes DoD grant money, \$298,000 in FY 93 and \$1,028,019 in FY 94, to youth drug-demand reduction programs in Shaw's community of Sumter County, SC.

The board was chaired by then 363rd Support Group Commander Colonel Ronald Sconyers and is currently chaired by Colonel "Doc" Savage, 20th Support Group Commander. On the DeFY advisory board are the two Sumter County public school districts' superintendents, the city of Sumter chief of police, the county sheriff, the executive director of the Sumter County Commission on Alcohol and Drug Abuse, and a representative from the National Association for the Advancement of Colored People (NAACP).

Sumter area programs, many administered by the agencies represented by the advisory board, were invited to submit proposals for funds from the grant money. The advisory board compiled the submissions and forwarded them to the OSD for final approval. The programs that were approved for 1993 were for drug prevention training for teachers and staff in the two school districts; DARE equipment for the county sheriff and funds for a DARE summer camp; an outdoor adventure lab; a student assistance program in the two school districts; a community youth outreach program providing a health resource center, a peer prevention center, and an alternative teen activity center; Sumter Dream Week to increase community awareness of drug abuse among youth; Teen Institute for encouraging teens to live drug-free lives; a media campaign to advertise the prevention programs; another teen center; a mentor/role model program; and a Girl Scouts program.

Observations About the Program

Target Population. Spreading its efforts across many fronts, the DeFY program hopes to have a significant deterrent effect on drug use in its community in all domains of young life. The advisory board sought to offer funding to almost all agencies involved in youth drug prevention programs in Sumter—the schools, community youth groups, law enforcement, university outreach, and the local drug and alcohol prevention and treatment commission—thereby strengthening the existing programs.

Note that Shaw's DeFY program is of a scale that it might be expected to affect the entire community, not just youth in the program. DeFY spent slightly more than one million dollars in FY 94 on drug prevention in a county with roughly 20,000 students, or about \$50 per student countywide.

Community Reactions. According to many of Sumter's civic leaders and community organization representatives, Shaw AFB has always had good relations with Sumter. Many military members live off base, in town and in Sumter County. Active and retired military members sit on the Sumter Chamber of Commerce and other community leadership councils, and military retirees stay in Sumter in high numbers.

The wing commander at Shaw is traditionally involved in community affairs, perhaps no other so much as Colonel Ron Sconyers, who was in that position as well as chairman of the DeFY advisory board when it was formed in 1993. As a highly visible, respected, and influential community leader, Colonel Sconyers lent credibility to the DeFY advisory board among Sumter's government and business leaders. The board continues under its current chairman, Colonel Savage. There was a report of dissent, however, by Sumter's minority community, which objected that there was not sufficient minority representation on the board. DeFY responded to the criticism by inviting the NAACP to participate.

Volunteers. The DeFY program was not designed to promote the use of military members as volunteers for drug-demand reduction among youth, although some of the programs do, in fact, include military volunteers. Dream Week, for example, an event that has been held in Sumter annually since 1989, has always used uniformed military members as role models for youth. Other programs run by the Sumter Commission on Drug and Alcohol Abuse have sought Air Force volunteers to serve as mentors—for example, often through the Social Actions office. And Air Force members have volunteered on their own—for example,

starting programs in collaboration with Sumter community agencies without base coordination.

Drug Education. Most of the DeFY-funded programs do not directly provide drug education for youth. Two that do are the city of Sumter police department and the county sheriff's DARE programs. They are using money from DeFY to replace funds no longer available to pay for their DARE officers. Other DeFY-funded programs are for training school staff on drug prevention, for mentoring programs, for student assistance, and for youth self-esteem and skill-building programs that do not generally provide specifically a drug education curriculum.

Administrative Resources. DeFY program administration is the responsibility of the Social Actions Office under the direction of its chief, Samuel Bonham. As DeFY coordinator, he monitors program activities, requests their budgets, sets up monthly board meetings, and attends program functions. This responsibility came on top of the work he did in his existing position, administration of the base's drug and alcohol programs and human relations affairs. Deciding that DeFY required a full-time coordinator, he has hired one for FY 94.

DeFY administration is also the responsibility of the advisory board chairman, currently 20th Support Commander Colonel Savage. What is critical about this position is not funding or availability of time, but having an enthusiastic individual who is dedicated to being involved in community affairs.

Sources

RAND staff visited Shaw AFB and Sumter, SC, June 7-8. During the visit they conducted interviews with Mr. Samuel Bonham, Shaw AFB Chief of Social Actions and DeFY program coordinator; Mission Support Group Commander and DeFY advisory board chairman, Col "Doc" Savage; and Wing Commander, Brig Gen John Hall. Presentations were made by advisory board members, their representatives, and program coordinators to RAND staff on the programs funded for FY 94. RAND then conducted interviews with the Girl Scouts program representatives; Sumter County Commission on Drug and Alcohol Abuse staff; the city of Sumter chief of police; the Sumter County sheriff and his DARE officers; representatives of the two Sumter area school districts; and Clemson Extension Services staff. On the evening of June 7th, RAND was given a ride-along with the Sumter chief of police and his staff to observe "Saturation Night" activity, an evening of special patrol for enforcement of drug and alcohol laws, and met with Sumter's mayor, fire chief, and city manager. On the 8th, RAND staff participated in a demonstration of the outdoor adventure lab (the "ropes course"), which was jointly sponsored by the Sumter Alcohol and Drug

Commission, Clemson Extension Services, Union Camp (a local manufacturer), and DeFY.

Kansas National Guard Parent Network

Program Description

The Kansas National Guard's Kansas Parent Network is a program that originated in 1992 out of its DDR office. The intent of the program is to take advantage of National Guardspeople and resources for training parents throughout Kansas, both in the Guard and not, on parenting skills including drug prevention among youth. Already in place at the time the National Guard became involved was the state's Kansas Family Initiative, which included a plan for drug prevention training for parents. The National Guard's program supports that effort.

The Kansas Family Initiative is sponsored by the governor's office, the State Board of Education, and the State Alcohol and Drug Office within the Division of Social and Rehabilitative Services (SRS). There are 12 Regional Prevention Centers funded through SRS and set up to coordinate family training sessions throughout the state. They are using a training curriculum developed by Dr. J. David Hawkins and Richard F. Catalano at the University of Washington from research on reduction of risk factors and increase of protective factors to prevent drug use among youth. With an administrative structure and the training curriculum already in place, the National Guard's role is to provide parents from their Guardspeople to be trained and in turn train others from their communities. The National Guard is also forming, out of the training sessions, family support groups that will continue to meet and give one another support in carrying out what they have learned from training.

Observations About the Program

Target Population. The National Guard's goal through its Kansas Parent Network is to reach a large percentage of youth in Kansas, starting with the families of its personnel and reaching out into the wider community—as those trained train others and as parent support groups spawn additional community prevention efforts.

Community Reactions. The National Guard has had a difficult time gaining acceptance by the prevention community in Kansas. The 12 Regional Prevention Centers are contracted to the state and are administered from community

treatment, counseling, and prevention facilities throughout Kansas. They are responsible for coordinating parent training for the Kansas Family Initiative. Each center has developed, over the years, its own local network of drug prevention agencies with which it works. The National Guard is new on the scene, and some of the agencies have found that the Guard has a style of planning and implementation that is not always compatible with their own. The centers run autonomously, unlike the National Guard's statewide system, and experiences have varied around the state, some centers working more cooperatively with the Guard than others.

Volunteers. The Kansas National Guard has on its rolls 8,700 ready, statewide, weekender Army and Air National Guardspeople. It has systems in place for mobilizing personnel, both formal and informal, as was demonstrated during Desert Storm when the family support groups were used for information sharing. The Kansas Parent Network is intended to take advantage of these mechanisms for bringing volunteers into the program.

The adjutant general was the first volunteer to receive parent training. His approach to recruiting additional volunteers among his staff has been to be encouraging rather than directive. The program is also enlisting support from the commanders of the 16 major commands responsible for 95 units across the state. As the commanders receive training, they will become trainers themselves, or encourage their staff to support the program. At the same time, the program director, Terri Ploger, is working to promote grassroots interest within the Guard units that will hopefully work upwards.

Drug Education. The program does not directly involve drug education for youth. The Kansas Family Initiative parent training is intended to reach youth through their parents or significant adult figures. The training consists of 5 to 10 sessions (training is tailored to the needs of the community and parents who are targeted) that cover topics around the areas of family history of high-risk behavior, family management problems, early antisocial behavior of children, and parental use or positive attitudes toward use of drugs.

Administrative Resources. Oversight for the Kansas Parent Network is the responsibility of the National Guard's DDR administrator, Captain Gene Roles. Day-to-day management is handled by the program director, Terri Ploger. She is assisted by two full-time area coordinators and a full-time public affairs coordinator. A nonprofit consulting organization, Mainstream, Inc., receives funding from the National Guard (as well as from the governor's office, the Department of Education, and Social and Rehabilitative Services) to gather additional support for the Parent Network and the Kansas Family Initiative,

develop the training materials and procedures, and prepare the program to run on its own through the initiative of the families.

Sources

RAND staff visited the Kansas Parent Network on September 12 and 13, meeting with program staff; parents; community leaders; National Guard members, including the adjutant general; and various state officials, including the governor, in group settings. They also conducted more-structured telephone interviews with Captain Gene Roles, Kansas National Guard Drug-Demand Reduction administrator, on July 13; Terri Ploger, director, Kansas Parent Network, on July 25; and Herb Callison of Mainstream, Inc., on July 27. In addition, they spoke with several directors of Kansas' Regional Prevention Centers, both in person and by phone.

Illinois National Guard Operation First Choice

Program Description

The Illinois National Guard's Operation First Choice (OFC) is an after-school, armory-based physical fitness and leadership program for at-risk youth ages 7–18 that is based on Tom Collingwood's physical fitness-based program for behavioral change. The program uses National Guard facilities and personnel to teach youth the benefits of physical fitness and healthful habits to keep them from destructive behaviors such as the use of drugs and alcohol, involvement with gangs, and other criminal activity.

OFC began in 1993 through the Illinois National Guard's DDR program. The initial site was Chicago's Northwest Armory, located in the high-crime, inner-city area of Humboldt Park. Expansion of the program to three other armories, located in Chicago, Springfield, and Peoria, is currently under way.

The program is ongoing through the year, operating in four 12-week sessions with a week off in between. Youth meet three times at the armory after school for three hours of physical fitness training, basketball, and other team sports; special presentations on topics including the dangers of alcohol, tobacco, and other drugs, and HIV transmission; and participation in field trips and other occasional special events held in the armory, such as an evening dance.

Observations About the Program

Target Population. Chicago's Northwest Armory is located in the largely African American and Hispanic American neighborhood of Humboldt Park. A 1993 National Institute of Justice study describes this area as one of the two most dangerous communities in Chicago, based on its annual rate of street gang-motivated crimes. The youth who attend the program live in the neighborhood, most only a short walk away. One group is transported each week by a van provided by a youth center on the other side of Humboldt Park.

The program describes its target population as any youth between the ages of 7 and 18. Initially, participants were recruited through a number of social service agencies that recommended at-risk youth. Word of mouth is mainly how they learn about it now. The program has not had much success attracting those over 15, and the average age of members is decreasing as younger siblings have begun to join. The program administrator notes that most of the youth have experimented with drugs and many with gang activity. The program only requires the youth to stay straight while in the program and does not turn anyone away initially. The program feels that it can have the most impact on borderline youth who have not yet become heavily involved in drugs and gangs, but who are at risk for involvement.

Community Reactions. OFC has made special efforts to be a visible presence in the neighborhood in Humboldt Park. It works closely with area agencies that provide social services to youth in recruiting participants for their program, both youth and adult volunteers. One community agency staff member told RAND that there had long been curiosity about the armory and about why it was not available to the community for their use. OFC is the most visible component of a policy change toward recognizing the armory's value as a community asset. In fact, the National Guard's manager of the armory explained to RAND that before the armory was opened for the OFC program, it had been covered with gang graffiti, but that since it had been cleaned up and a local artist and youth group painted a mural on one of its walls, the armory has remained graffiti free.

One of OFC's special events last year was a junior Olympics involving 150 youth and 60 Guardspeople in uniform. There had been fear among the parents about allowing their children to enter the park (because of gang violence there), but the event was highly visible, successful, and made a lot of people in the community see that the National Guard lives in their neighborhood and gets involved in events not related to military action. The program administrator noted that there is generally a better feeling about the National Guard than about the police in

this community. Youth who participated in the RAND focus group did not seem to be as suspicious of the Guardspeople as they are of the police.

Volunteers. OFC recruits its volunteers mainly from the active and reserve Guardspeople based at the Northwest Armory. Some come from other armories, and some are parents and community volunteers. Because OFC is a fitness program, volunteers are generally young and athletic. Most are African American and Hispanic American, matching the youth demographics. The program aims to make its impact largely through its role models, and therefore the volunteers emphasize military bearing, discipline, and order.

Drug Education. OFC does not include a drug education curriculum. Rather, the program uses a fitness training series developed by Dr. Thomas Collingwood with the idea that drug use is one of a constellation of risk factors that are destructive to good health. Others include lack of exercise and also lack of respect, order, and discipline. By reducing these risk factors, drug use will be reduced as well. However, program youth do receive special presentations by law enforcement and health professionals to give them knowledge about drugs and their dangers. The program leaders talk to them about drug use often, especially to let them know that it is not tolerated in the program. The youth who participated in the RAND focus group session were very vocal and supportive of the antidrug message they have received.

Administrative Resources. Captain Johnnie Boatman has been OFC's program administrator at the Northwest Armory since the program began. He is assisted by three staff members, two of them hired this year. He and the third staff member, his noncommissioned officer in charge, devote full time and then some to the program. They are well connected with the other community organizations and spend considerable time helping other programs in return for help from those programs. They make special efforts with some of the OFC youth when they feel that a visit to their home might bring them back to the program or help resolve problems at home.

Sources

RAND staff visited the OFC program at the Northwest Armory in Chicago on May 11–12. They interviewed Captain Johnnie Boatman, program administrator; his assistant Cherie Hunter, Air Force National Guard; Captain Chris Lawson, Illinois National Guard's DDR administrator; Dr. Tom Collingwood of Fitness Technologies; and Victor Gonzalez, staff member of Youth Opportunities Unlimited, a Humboldt Park neighborhood youth center. They observed

program activities and conducted a focus group session with eight youth from the OFC program.

New York State National Guard Corps of Cadets

Program Description

The New York State National Guard's Corps of Cadets was founded in 1991 under the direction of Brigadier General Joseph Galioto, then Chief of Staff for the New York State National Guard, with the help of Colonel James O'Toole, who was then serving as personnel director for the Guard. The Corps of Cadets is a uniformed youth program for 12-17-year-old males and females that emphasizes leadership, discipline, and team building. As well as benefiting the youth, the program provides National Guard volunteers the opportunity to serve as role models and mentors and gain leadership experience themselves.

The first unit was established in an armory in Jamaica, Queens. There are currently nine units, five of them at armories in New York City boroughs and four others in armories around the state, largely in inner-city neighborhoods. Founders of the program hoped that the use of armories as a "safe haven" for youth in the violent, drug-ridden inner cities would be a unique resource the National Guard could bring their communities.

The Corps of Cadets meets weekly after school for three hours under the supervision of National Guard volunteers who lead them in military-style inspections and drills, fitness activities, special instruction including drug education, field trips, and other special activities. They have a summer encampment, monthly field trips, hiking, etc.

Observations About the Program

Target Population. The Corps of Cadets naturally attracts youth who live near the armories where the units meet. The nine units currently established, and the additional sites selected for expansion, were picked because they are largely in inner-city areas identified through New York State drug and alcohol abuse initiatives and social services agency statistics on youth as high-need areas.

The Corps of Cadets is open to males and females aged 12-17 and is designed to appeal to older teens through features such as tie-ins to summer job programs and preparation of a recommendation package for college applicants. The program has been successful in attracting youth over the age of 13, some of whom RAND talked to in a focus group session. The older program participants

described their commitment to the corps as a conscious decision to advance themselves toward a college education and a higher quality of life. Also, the fact that the program does not have younger children (e.g., 8–11-year-olds) may make it more appealing to older youth. The program advertises in armory newspapers and recruits through contacts with local youth agencies at some sites but mainly gets its members through word of mouth. Many of the members are in the families of Guardspeople.

Community Reactions. Community feeling about the Corps of Cadets was explored in a focus group session with a large group of parents whose children belong to the Jamaica, Queens, unit. Also present was a community activist who has given a lot of her time to the Corps of Cadets program since it was launched in her neighborhood as the inaugural unit. While she does not have a child in the corps, the community activist is happy to see a program that instills good values in the youth in her area—the values of order, structure, and discipline that translate to unity, dignity, and pride. She has organized her own “Queens Community Cadet Corps” for adults, which is based at her church. She noted that there have always been military people in her family, suggesting that she is comfortable with the rigidity of military style.

Likewise, many of the parents who were at the session are connected to the Guard, some members themselves, friends of members, or with family in the Guard or other services. They were clearly a very dedicated group of parents, active in fund-raising for the corps and worried that the program was going to suffer if financial support were withdrawn. They believe very much in what the corps is giving their children: not only increased self-esteem and valuable leadership training, but opportunities for summer jobs, recommendations for their college applications, and, they hope, a guarantee that the hard work they have done as parents will not be undone.

The New York National Guard’s Information Officer noted that he has found little public disapproval for the military-sponsored youth program as he has talked about it on radio shows and to other media.

Volunteers. National Guard volunteers are a critical element of the Corps of Cadets program. One of the goals of the program is to provide National Guardspeople with an opportunity to gain leadership skills and practical life skills as well as to increase their own self-esteem by serving as role models to youth. More than just seeing personnel as a resource to be tapped, the founders believed that the corps program would be a benefit to the volunteers.

Although it is not formally recognized on performance evaluations, volunteer and National Guard administrators said credit is given on the reviews for

volunteering as cadre. But turnover of cadre in some units is high, and program administrators admit that recruiting and retaining cadre can be difficult. General Galimoto, founder of the program, noted that he would like to see the Guard be able to give cadre some compensation for their work, as did a commanding officer from one of the Corps of Cadets units.

Drug Education. The Corps of Cadets program does not provide a standard drug education curriculum although the antidrug message has always been a central theme of what it instills in the youth. Youth who participated in the RAND focus group did not identify the corps as a drug program, but most said that the volunteers talked about drugs to them often. One youth described it as "the scare approach," and another noted that their C.O. brought the subject up every week. Some of the units bring in speakers on occasion, including DARE officers, to do presentations for the cadets, but mainly the program uses role modeling to present an antidrug message.

Administrative Resources. Outside of the start-up work performed by the program's founders, the Corps of Cadets has been directed by a full-time staff member, Captain David Slocum. He is assisted by three staff members, one of whom was recently hired. He estimates that the program will require a staff of five, once the additional sites are running, to administer the program.

Sources

RAND staff visited the New York State Corps of Cadets program on June 9-10. They conducted interviews with Captain David Slocum, program administrator, and two of his staff members. They interviewed the officer in charge for the Schenectady unit, and a cadre member. They visited the New York headquarters of the National Guard and interviewed one of the program founders, Colonel James O'Toole, currently deputy adjutant general; Major General Michael Hall, the adjutant general; and the New York National Guard's information officer for his perspective on public opinion about the program. They also interviewed the Schenectady job training coordinator whose agency is working with the Corps of Cadets program.

Downstate, they visited the Jamaica, Queens, unit and interviewed the officer in charge of the unit and one of her cadre members. They conducted two focus group sessions with Corps of Cadets members, six youth in each; and a focus group session with parents from that unit.

On July 15, RAND staff interviewed Dr. Joseph Galioto, founder of the Corps of Cadets program, who is currently serving as special assistant to the commanding general, D.C. National Guard.

Oregon National Guard Mentors Program

Program Description

The Oregon National Guard's Mentors Program began in 1990 from the initiative of two reserve Guardspeople who became mentors at an elementary school through outreach that they had become involved in as part of their full-time jobs. They began to recruit more Guardspeople to mentor students at that school and others. In 1992 there were 26 mentors whom they were coordinating when the National Guard gave them administrative support through its DDR program. There are currently 534 volunteers, including Guard and non-Guard members, many of them recruited from universities, athletic organizations, businesses, and government agencies.

Students are brought into the program at the elementary level, and followed to middle school in some cases. Currently there are 38 schools participating.

The program runs through a "tri-support-level" system of management. The National Guard is one level of support, the schools another, and at the third level are the activities coordinators, mentors, and nonmentors who coordinate special events for mentors and their protégés at the school level.

A recent component added to the program is parent training. The Oregon National Guard is cosponsoring the Department of Human Resources use of a curriculum based on the risk factor (including drug use) reduction model. The National Guard provides the facilities (armories, air bases, etc.) and gathers parents to be trained. It recruits from its mentors, including both Guard members and non-Guard members.

Observations About the Program

Target Population. Schools invited to participate in the Mentors Program are Chapter 1 schools, where students qualify for the federal free lunch program. The schools select youth for mentoring but are asked to look for "middle of the road" students—those who seem to be emotionally troubled, perhaps looking for attention, and who could benefit from a positive relationship with an adult. They are responsible as well for matching the students to a mentor based on racial and ethnic background in some cases.

Community Reactions. The program reports that the community, particularly the schools, have been very welcoming. A few parents questioned the idea of having military members mentoring their children but were satisfied once they sat down and talked to them. The program has evolved into less of a National Guard program than a communitywide effort, with many of the volunteers being non-Guardspeople and much of the administration in the hands of the schools and activities coordinators, who may come from any source.

Volunteers. Although volunteers were initially recruited only within the National Guard, 168 of the 534 currently participating are Guardspeople. A large part of the National Guard program administrator's work is the recruitment of mentors. He makes presentations to universities, high schools, businesses, etc. The largest category of mentors is college students. The program has made arrangements with several universities and colleges to give course credit to mentors. The National Guard monitors them (as they do all mentors) and certifies that they fulfilled the requirements for a grade. They have instituted a new feature of the program recently to accept high school students as mentors. Sophomores are matched with 5th graders, with whom they will continue a mentoring relationship through the difficult transition from 6th to 7th grade.

Those who apply as mentors are subject to a criminal record check. They receive training and extensive documentation that covers procedures to follow at the schools and with the students; reporting to the program; issues such as confidentiality, child abuse, administrative forms that they must use; etc.

Drug Education. The Mentors Program does not involve any standardized drug education curriculum. Although the program was brought under the direction of the DDR administrator, it was not initially identified as a drug program.

Administrative Resources. Martin Plotner, DDR administrator for the Oregon National Guard, has overall responsibility for the Mentors Program, spending full time currently. His two assistants divide the state geographically to work with the schools so that they can keep track of attendance by the mentors and perform ongoing evaluation of the program. A large part of their time is also spent answering questions from mentors, but they are understaffed to perform that task and have begun to look for help. For example, at one elementary school where they have a lot of college mentors from a particular school, they have arranged to have the college counselors available to the mentors.

Each school assigns a contact person who is responsible for the program, a vice principal or a child development specialist, and a backup person—such as the attendance secretary. However, many of the schools can devote only minimal

resources to the program, and the National Guard staff supplements those resources.

Each school has an activities coordinator in charge of programwide events, such as Dream Week and several other events that are being scheduled regularly throughout the year to keep the enthusiasm and momentum of the program going.

Sources

RAND staff conducted telephone interviews with Martin Plotner, DDR administrator for the Oregon National Guard and Mentors Program administrator, on July 7, and with Jeff Lady, the Oregon National Guard's Outreach Program coordinator, on July 20.

Additional Key Informants

On June 5, interviewed Al Robbert, RAND researcher currently studying military community outreach.

On May 23, visited William Midzeleski, U.S. Department of Education, to talk about drug prevention programs in the public schools.

On May 23, met with Captain N. W. Weisburg, Chief of Naval Operations staff, for an overview of the Department of the Navy's Drug-Demand Reduction programs.

On May 23, met with Major Freeland, Army Drug and Alcohol Prevention Unit.

Interviewed Patty Kasold and Linda Smith, Personnel Support, Families, and Education for the Undersecretary of Defense for Personnel and Readiness, on August 5.

On July 25, interviewed Ron Sortor, RAND researcher, on readiness.

Interviewed Colonel Shank, California National Guard, by telephone on August 10. Visited Delevan Science Center, site of California National Guard's student training program, cosponsored with Los Angeles Unified School District, on August 12.

3. The Programs' Relationship to Military Strengths, Military Weaknesses, and the Literature

This section discusses the extent to which the pilot outreach programs (1) drew on military comparative advantages in the area of drug prevention, (2) suffered from comparative disadvantages of the military, and (3) were in accord with the general recommendations of the drug prevention literature.

Use of Military Comparative Advantages

This section discusses the extent to which the pilot outreach programs tapped the military's comparative advantages in the area of preventing drug use among youth. Interviewees both within and outside the military were asked to describe what they perceived to be the military's comparative advantage(s) in this area. Their answers fell into six broad areas: organizational characteristics, organizational image, personnel, skills, physical resources, and ability to organize and execute programs. The relevance of each of these categories of advantages varied by program.

Many of the pilot programs combined distinct components. For example, Fort Campbell both conducted an adventure camp and pursued coalition building. However, most of the programs' components fall into one of only eight categories. Hence, it is more convenient to consider how each of the six advantages affected the eight types of components than how they affected the 12 pilot programs themselves.

Table 3.1 summarizes the results. It has a column for each type of program component and a row for each category of advantage. The entries indicate whether the program greatly ("+++"), substantially ("++"), somewhat ("+"), or to no great extent (left blank) drew on that comparative advantage.

These gradations represent the subjective judgments of the authors, not precise measurements. It is perfectly possible that another observer might score the program components somewhat differently, e.g., changing some "+" entries to "++", and vice versa. Thus, two columns, corresponding to different program components, that differ only in a few rows and by a few gradations should not be construed as being meaningfully different. For example, the columns

Table 3.1
Comparative Advantages Tapped by Various Types of Programs

	Uniformed Programs	Physical Fitness Programs	Adventure Camps	Mentoring/ Tutoring	Parent and Community Training	Coalition Building	Funding Civilian Programs
Organizational characteristics	+++	+++	++	++			
Organizational image	+++	++	++	++	+	++	+
Personnel	++	++	++	+++	++		
Skills	+++	+++	+++	+	++		
Physical resources	++	++	+++				
Organizational ability	+	+	+	+	+	++	++

+ program makes some use of comparative advantage.

++ program makes substantial use of comparative advantage.

+++ program makes great use of comparative advantage.

corresponding to adventure camp, physical fitness programs, and uniformed programs differ by only a few elements; for all intents and purposes, they are the same.

Fortunately, finer resolution is not necessary because the program components cluster into two groups: those that draw heavily on military comparative advantages (mentoring/tutoring, adventure camp, physical fitness programs, and uniformed programs) and those that do not (coalition building, funding civilian programs, and parent and community training). The eighth component, "providing various resources" is excluded from the table because it is a broad category that encompasses a range of activities, some of which draw on military comparative advantages, while some do not.

The following paragraphs explain the entries in Table 3.1.

Organizational Characteristics

The military excels in, and is distinguished from other prevention providers by, such fundamental characteristics as its discipline, structure, and emphasis on physical fitness. The two words that best summarize the uniformed programs are "discipline" and "structure," earning them a "+++" on this dimension. Adventure camps and the Operation First Choice physical fitness program are not as formal. For example, the youth did not earn and receive ranks. However, improving fitness is fundamentally about discipline; one of OFC's attractions for the youth was that it provided a safe, structured environment, and physical fitness is itself an organizational characteristic of the military, so fitness programs were also judged to draw greatly on the military's organizational characteristics.

Mentoring draws heavily on the tradition of self-discipline, but not on group discipline. Hence it is rated with a "++" but not a "+++."

The other three program components do not involve youth directly, so the youth are neither immersed in a structured environment nor taught self-discipline directly from personal interactions with military personnel.

Organizational Image

The military's image can be a comparative advantage in several respects. All outreach programs benefit at least somewhat from the military's reputation for being drug free. It gives the military credibility with both parents and other organizations and a natural position of leadership in coordinating coalition efforts.

Surveys suggest that the military is held in a positive light by many youth (Johnston, 1992; Bachman, 1983). This image may help attract youth to the programs and get them to approach the programs with a positive attitude. Hence, programs in which youth interact directly with military personnel (mentoring/tutoring, adventure camps, and physical fitness programs) take more substantial advantage of the military's organizational image than do most programs that do not directly involve the youth.

The uniformed programs are judged to draw greatly on this comparative advantage because we observed them reaching youth who were hostile toward other prevention providers such as schools, police, and traditional youth organizations, but who expressed respect for the military.

Personnel

Military personnel are generally good role models for youth, so programs that allow youth to interact directly with service people draw substantially on strengths of the military's personnel. This is most true for mentoring and tutoring.

Parent and community training programs also tap this strength to the extent that military personnel are used either as trainers or receive training that enables them to work more effectively with youth.

Skills

Adventure camps draw on military skills ranging from rappelling and ropes courses, to knowledge skills taught at the camp (e.g., first aid and CPR), to simply organizing and running an encampment. Physical fitness programs draw directly on military personnel's knowledge of training and fitness. Uniformed programs draw on these as well as troop-handling skills.

Mentoring and tutoring benefit from military language skills (for bilingual mentoring), and tutors can take advantage of their technical and computer skills and the ability to foster unit identity.

Training programs can draw on the military's extensive experience with designing and implementing training programs.

Physical Resources

Camp- and armory-based programs substantially benefit from the use of physical spaces provided by the military. The adventure camp programs are rated as greatly benefiting from military physical resources because they use not just space or buildings but also more specialized resources, such as the rappelling tower at La Salida and the COBRA simulator at Fort Campbell.

Organizational Ability

All programs benefit to some extent from the military's ability to plan and execute programs. For parent and community training and coalition building, this organizational ability is perhaps the principal contribution. This ability can also make a substantial contribution to the organization and coordination of nonmilitary programs that receive funding from an outreach program.

Effect of Military Comparative Disadvantages

Military comparative disadvantages in preventing drug use among youth were elicited from interviewees in the same way that the advantages were. The responses fell into the four broad categories discussed below. The first two seemed to affect all programs equally; the last two would tend to have a greater impact on some programs than on others, as noted.

Community Outreach Not a Traditional Mission

The military has developed many specialized skills pertaining to its mission of national defense that are not relevant to community outreach. As a result, the military can simply be more expensive than other agencies.

Also, particularly for the active and reserve components, community outreach will always be a much smaller fraction of overall budgets and activities than national defense. This secondary status has a variety of adverse consequences. The most problematic for the pilot programs was that programs typically did not receive funds early in the fiscal year, creating a "feast or famine" funding situation, particularly for programs that did not receive supplemental funds from other sources.

Organizational Rigidity

That community outreach is such a small fraction of the military's activities can also contribute to organizational rigidity; revising military procedures and regulations to facilitate community outreach would be overemphasizing a comparatively small mission. Most program administrators noted at least one instance in which military rules and procedures had prevented or delayed them from doing something or required them to work around those rules. Some illustrative examples are given below.

Often the rigidity pertained to the inability to pay for small items that had not been budgeted. For example, the New York National Guard Corps of Cadets wanted to offer snacks to the youth at its meetings. It had not budgeted for refreshments, however, so it could not purchase them with outreach funding. (In this instance the New York Guard had supplemental funds from the lieutenant governor's office that could be used for that purpose.) The Illinois Guard encountered similar problems and traced them to apparent inconsistencies between Army modified structure code (AMSCO) Accounting Classifications and fiscal law set down by the General Accounting Office (GAO).

Another general problem was a reluctance on the part of people not familiar with the programs to recognize that expenses that did not explicitly and directly pertain to drugs could be a legitimate part of a drug prevention program. For example, fitness programs can, if designed properly, reduce drug use, so purchasing sports equipment can be a legitimate expense, but such purchases can raise questions from auditors with a narrow view of what constitutes drug prevention.

One Adopt-A-School coordinator at Fort Meade noted that DRMO regulations made it more difficult to give military surplus equipment to a school adopted through the pilot outreach program than it is to give the same equipment to the Boy Scouts or other officially recognized youth programs. OFC encountered a similar discrepancy between the pilot outreach programs and other programs (such as Challenge) with respect to transporting youth.

OFC has also not been able to provide federal tort claim insurance to Guard volunteers even though the program takes place inside an armory, except by putting them individually on orders without pay, which generates a prohibitive amount of paperwork. Apparently there exists a precedent for blanket coverage within family support services, but it does not extend to OFC volunteers.

As another example, the literature stresses that cooperative, community-based prevention efforts are the most likely to succeed. Yet there are restrictions on

military personnel soliciting even small amounts of funding to support the outreach program from companies with whom the military does business.

Lack of Experience Working with Youth

Most members of the military do not work regularly with children in a professional capacity. Thus, military units often do not have direct access to youth, so they need help from other organizations identifying and recruiting youth for the programs. The pilot programs were able to establish such partnerships when needed, so this does not make military youth outreach programs impossible, but it does mean that the military loses some control over the selection of youth into the programs.

More generally, youth are different from adults. The military has extensive experience training, motivating, and working with adults and young adults, but the way one interacts with youth can be different from the way one interacts with adults. For example, youth may be less patient than adults with instruction delivered in a formal lecture setting.

Obviously this comparative disadvantage impinges on outreach programs that work directly with youth (uniformed, physical fitness, adventure camp, and mentoring/tutoring programs) much more than on programs that work indirectly through other people and organizations.

Turnover

Active-duty personnel move regularly. This is a disadvantage for running community outreach programs because continuity is valuable in several respects.

Some programs (mentoring/tutoring, uniformed programs, physical fitness programs) seek to establish an ongoing role model relationship between youth and military personnel. Obviously turnover among volunteers could be a particular problem for those programs.

Turnover is an issue for all types of programs, however, because so much depends upon good communication and coordination between the program administrators and schools, other community groups, and other members of the sponsoring military unit. Also, there is a considerable amount of "on-the-job training" for program administrators. Hence when a program administrator or a key volunteer moves, communication can be disrupted and skill and experience lost.

Similar comments apply to commanding officers. Support from commanding officers is essential to program success. If a program gets started under an enthusiastic commanding officer who is then replaced by someone who is less enthusiastic, the program will likely suffer.

Pilot Programs' Relationship to Recommendations in the Literature

It was not possible to directly evaluate the impact of the pilot programs on drug use, but it is possible to note the extent to which the programs collectively and individually were or were not consistent with the recommendations in the literature concerning what constitutes an effective drug prevention program.

Overall the pilot programs are in accord with the literature in two important respects. First, the literature strongly supports collaborative, multifaceted, "systems" approaches to prevention (e.g., OSAP, 1991b). Since the outreach programs supplemented rather than replaced the other prevention programs to which the youth were exposed, they increased the number of different sources from which the youth heard a drug prevention message.

Second, the literature reports that "interactive" programs that actively involve the youth in the program are more effective than "noninteractive" programs in which the youth are passive recipients of the drug prevention message (Tobler, 1986). The pilot outreach programs as a whole were clearly interactive.

More-specific comments can be made by considering each of the eight types of program components.

There is abundant support in the literature for the belief that mentoring and tutoring are of general benefit to youth. It is quite plausible, though less well established, that they can reduce drug use.

We are aware of no sound, outcome-based evaluations of the efficacy of adventure camps at reducing youth drug use. However, it is worth noting that most camp programs are of limited duration, and the literature favors sustained interventions (e.g., Ellickson, Bell, and McGuigan, 1993). This suggests that DEFY, which includes mentoring in the year following the camp, would be more effective than La Salida, which does not provide for such follow-up support. However, there is no reason why the sustained follow-up must come from the military; schools or other organizations could, and indeed may already, play that role.

There exists a literature suggesting that fitness interventions in general (Butcher et al., 1988) and OFC in particular (Collingwood et al., 1991, 1992) can promote antidrug messages. Note, however, that the literature gives mixed reviews to purely "alternative" programs (Kumpfer, 1990) that give youth something to do but lack the emphasis on health, goal-setting, etc., which is how OFC operates.

There is no literature evaluating the effect of uniformed programs on drug use. They are intensive, sustained programs that involve multiple activities (weekly meetings, weekend events, summer encampment), which are all considered to be important attributes of an effective drug prevention program. On the other hand, these programs are voluntary, so they may include primarily those youth who would not have used drugs even if they had not joined the program, and youth who are at risk for drug use because they lack self-control may be exactly those youth who would not stick with a uniformed program even if they joined it.

The literature supports the idea that cooperative drug prevention programs that enlist support from various community organizations are the most effective. Hence, coalition-building programs are supported by the literature. Forming a coalition is not enough, however; the program has to actually implement a cooperative prevention program to have an effect.

The extent to which funding other prevention providers is consistent with the literature's recommendations depends entirely on which programs and activities are funded. We did not try to evaluate the funded organizations' programs. It is worth noting, however, that at least at Shaw AFB there was no mechanism or procedure for trying to assess the efficacy of the different local prevention organizations' programs; Shaw AFB simply collected their budget requests and forwarded them all to the OSD.

The literature does support the idea that parents play a key role in determining whether youth use drugs (CSAP, 1993). However, whether parent training is actually effective depends on the specific curriculum, how it is delivered, etc.

The literature does not directly speak to the impact on youth drug use of providing physical resources to schools, as did Fort Meade's Adopt-A-School program. There is reason to be skeptical that this had much impact on drug use, however, given the generally low correlation between income and drug use (GAO, 1993c) and the fact that "affective" programs, which do not directly discuss drugs, are perceived to be ineffective (Ellickson and Bell, 1990; Ellickson, Bell, and Harrison, unpublished; Tobler, 1993).

4. Costs and Cost-Effectiveness

This section analyzes the costs and cost-effectiveness of the pilot outreach programs. First, each program's cost per youth served is calculated. Next, characteristics of a typical career of drug use (derived from a dynamic model of drug demand) are used in conjunction with estimates of the economic costs of drug abuse to determine the cost-effectiveness of the pilot programs.

Costs of the Pilot Programs

Methodology

The pilot programs differed in size and scale as well as in the type of intervention provided. Accordingly, costs should be measured on a per-youth basis rather than by the absolute size of program budgets. Programs also relied heavily on volunteer commitments and other in-kind contributions that cannot be monetized easily. Program costs here are measured by budgeted dollars per youth with volunteer hours and other donated resources considered separately.

Resources Used by the Pilot Programs

Budgeted Funds. All programs evaluated in this report used DoD funds allocated specifically for pilot community outreach. Programs were allocated funds based on detailed budget requests submitted to DoD. Budgeted funds totaled \$1.6 million in FY 93 and \$5.34 million in FY 94.

Other Funds. Some pilot programs received additional funds from non-DoD sources. For example, the Illinois National Guard received additional funds from the Governor of Illinois, the National Guard Bureau, and the DoD's Division of Substance Abuse Services for the Operation First Choice Program. Likewise, individual Young Marines units receive additional funds from community organizations and from local chapters of the Marine Corps League. These types of budget additions are included in program budgets for which data are available.

Volunteer Hours. The majority of the pilot programs relied heavily on volunteer time commitments. Dollar values are not assigned to these volunteer hours because the majority of volunteers contributed time above and beyond their

regular military duty. It can be assumed that if programs were entirely voluntary, volunteers must have derived benefits from participation that exceeded the value of their time to them. Some programs relied on salaried employees and included the costs of these services in their budgets. Many volunteer programs also used retired military, reservists, and civilian-service volunteers in addition to members of the Active Force and National Guard. Since volunteer hours were generally not committed at the expense of paid service and did not "cost" anything, volunteer hours are considered independently, and the dollar-equivalent value of volunteer time is not calculated.

Other Resources. Many pilot programs used military bases and other facilities such as armories to conduct the pilot outreach programs. Some programs also allocated military vehicles to transport youth to and from on-base programs. These "in-kind transfers" varied by location and type of program. These resources are accounted for separately in comparisons of program costs. By omission, we assume that programs used military capabilities in all cases in which required assets were not included for purchase with program budgets. For example, the budget for DEFY does not specifically include transportation services, and most programs did not budget for paid outside facilities. We do not monetize the value of in-kind transfers since we have no basis for costing such assets though they are included in the discussion comparing program costs below.

Calculating "Cost per Youth Served"

Program size was highly variable. For this reason, each program's *cost per youth served* is considered rather than the overall cost. "Cost per youth" is calculated in terms of both dollars and volunteer hours. It is expected that there may be a trade-off between dollars and hours since many programs used both volunteer and salaried staff. Some programs are also inherently more labor intensive (e.g., mentoring) than others (e.g., funding prevention programs that are administered by other organizations, such as Cannon AFB's Summer Sports Camp).

Caveats

The data presented below must be interpreted in light of a number of complicating factors. Most important, reported program costs are not uniformly defined; different programs include different components. For example, Cannon's Summer Sports Camp budget includes instructors' salaries, whereas La

Salida's instructors are volunteers. On the other hand, La Salida does include salary for a program coordinator in its budget.

Costs for the new pilot programs are expected to be higher as a result of large outlays required for start-up. In most cases, costs are difficult to interpret, even for well established programs, because of high levels of program expansion. The expansion of Young Marines (YM) from 32 to 55 sites between FY 93 and FY 94 more than doubled the YM operating budget and increased program enrollment by 120 percent (from 1,000 to 2,200 youth). This resulted in a slight increase in the cost of YM, from \$200 to nearly \$229 per youth. Substantial start-up costs are expected during this period of expansion at new sites. This is further evidenced when comparing YM to the other uniformed program under evaluation. The New York National Guard Corps of Cadets costs significantly more per youth than YM, but it is a newly established program that has yet to benefit from past investments in program structure or economies of scale.

A program's marginal cost per additional youth could conceivably be calculated by examining programs that expanded or that conducted more than one iteration during FY 93 and FY 94. However, returns-to-scale calculations are misleading because of the pilot nature of nearly all programs. Many programs incurred substantial start-up costs and do not appear to have operated as efficiently as established programs. The FY 93 Alameda and Pensacola DEFY pilot programs were extremely costly (\$3,500/youth) because funding included developmental costs. The national expansion program is budgeted to operate on a much lower allocation per youth (\$585/youth in FY 94 and \$400/youth in FY 95). It is therefore not appropriate to evaluate these pilot programs for returns-to-scale potential.

In summary, costs of the pilot programs are difficult to compare for the following reasons:

- The programs vary in the services they offer even within program type.
- It is difficult to measure the cost of in-kind transfers that benefit the programs (e.g., facilities).
- Most programs are new and thus incur high start-up costs.
- Most pilot programs are relatively small and cannot be evaluated as to their usage of economies of scale.

Given these constraints, when discussing the "cost" of a pilot program in the sub-sections below, we refer specifically to *the dollar amount budgeted by DoD for the intervention*, unless otherwise noted.

Results: Comparing Program Costs

Table 4.1 presents the overall results of these calculations for 15 individual community outreach pilot programs. Programs are organized according to the type of intervention provided: mentoring/tutoring, uniformed programs, physical fitness programs, adventure camps, DEFY (camp with mentoring follow-up), parent and community training, and other programs. We do not present data on dollars or volunteer hours per youth for programs that impacted entire communities or for which we were unable to ascertain the exact number of youth served.

Discussion

Several conclusions emerge from inspection of Table 4.1. First, most programs cost between about \$100 and \$600 per youth per iteration or year. Programs whose costs fell outside this range generally encountered unusual or special circumstances. Mentoring and tutoring programs appear to be the least expensive and most volunteer-hour intensive. This is due to the inherent labor intensity of mentoring activities. Mentoring programs require budget allocations mainly for training, administration, and occasional group activities and meetings. This means that mentoring programs can reduce cost per youth through program expansion since the marginal cost of additional mentors is small. The Fort Sam Houston Community Mentors program was budgeted at the same level as the Oregon Mentors program even though the Oregon program served nearly twice as many youth, thus reducing its per-youth cost by one-half.

Some new programs, such as DEFY in FY 93, seem quite expensive per youth. These costs are largely driven by the initial investment required to design and institute the small-scale, highly structured programs in Pensacola and Alameda. The FY 94 DEFY expansion operated at a much lower cost per youth.

Program expenses appear to increase dramatically when budgets are used to pay salaries, e.g., for outside staff to operate programs. For example, Cannon AFB's Summer Sports Camp was conducted entirely by an outside agency; the budget pays for transportation, facilities, counselors' salaries, and administration, resulting in the highest cost per youth of any camp program. La Salida's budget includes a paid program coordinator, which nearly doubles the cost per youth for the program. Programs that use military and civilian-duty volunteers and military facilities (such as armories) appear to be less expensive.

In addition, programs' self-evaluations of cost per youth generally include only direct costs and do not include overhead costs of preparing and administering

Table 4.1
Comparing Costs of DoD Community Outreach Pilot Programs

Type of Program	Program Name	Year	Total Budget	Youth Served	Cost Per Youth Served	Volunteer Hours	Vol. Hours per Youth
Mentoring/tutoring	Navy Kids	FY 93	\$166,000	750	\$221.33	24,000	32
		FY 94	\$338,000				
	Fort Sam Houston ^a	FY 93	\$65,953	85	\$231.41	14,400	51
Uniformed	Oregon Mentors ^b	FY 93	\$65,000	507	\$128.21	5,080	10
	Young Marines ^{c,d}	FY 93	\$200,000	1,000	\$200.00		
		FY 94	\$503,000	2,200	\$228.63	68,500	31
Physical fitness	NY NG Corps of Cadets ^e	FY 93	\$251,618	421	\$597.67	3,445	8
	Cannon AFB ^f	FY 94	\$39,300	40	\$982.50		
	First Choice ^g	93-94	\$68,000	267	\$254.68	1,862	7
Adventure camps		FY 94	\$640,000	1,071	\$597.57	3,420	
	Cannon AFB Summer Sports Camp ^h	FY 94	\$34,280	64	\$535.63		
	Shaw AFB DARE Camp ⁱ	FY 93	\$60,000	200	\$300.00		
Parent and community training		FY 94	\$69,984	400	\$174.96		
	Be Your Best ^j	FY 94	\$20,000	300	\$66.67		
	La Salida ^k	FY 93		428		10,520	25
		FY 94	\$92,322	720	\$128.23		
	Kansas Parent Network ^l	FY 93	\$250,000	682	\$366.57	8,580	13
		FY 94	\$500,000	1,231	\$406.17		

Table 4.1—continued

Type of Program	Program Name	Year	Total Budget	Youth Served	Cost Per Youth Served	Volunteer Hours	Vol. Hours per Youth
Mentoring + camp	Alameda DEFY ^m	93-94	\$210,410	60	\$3,506.83	1,280	21
	Pensacola DEFY	93-94	\$114,012	32	\$3,562.88	2,200	69
	DEFY, national	FY 94	\$900,000	1,538	\$585.18		

^aFort Sam Houston estimates the cost of mentoring at \$133.25 per youth. This may be the marginal cost of mentoring an additional youth.

^bVolunteer hours reported *do not* include parenting classes, community mobilization hours, or hours for volunteers within other supporting coalitions and organizations.

^cYoung Marines programs budget doubled between FY 93 and FY 94 to expand operation from 40 (FY 93) to 75 (FY 94) sites.

^dProposed expansion to 75 sites in FY 94 pushed forward to FY 95.

^eProgram operating at only 7 sites (cost per youth will likely come down as program expands).

^fBudget included funding for program supervisor, counselors, and other staff. FY 94 funding was exhausted by December 1993.

^gProposed (not actual) program expansion for FY 94.

^hBudget includes counselor salaries, transportation, and all other camp-related expenses.

ⁱDARE camp, 6 days.

^jGirl Scout day camp at local schools. Budget includes \$2,400 for personnel coordination for 12 weeks.

^kBudget includes \$44,327 for program coordinator's salary.

^lProgram expects that approximately 2.6 youth are reached for every parent trained.

^mThe FY 93 programs have high start-up costs. The larger FY 94 national program cost less per youth.

programs. For example, La Salida reports the *essential costs* of its program at \$26 per youth. But this figure includes only five meals and a T-shirt and hat, even though La Salida supplies youth with other materials and uses budgeted funds to pay the salary of a program coordinator. The Fort Sam Houston Community Mentors Program reports *required expenses* (\$133/youth), which are only slightly more than half the total budgeted cost/youth.¹

Pilot programs appear to have operated at very different levels of cost per youth. Most of these differences are related to program implementation and intensity but are also related to the accounting used to measure costs. It is expected that the newer programs will come to operate more efficiently over time.

Cost-Effectiveness of the Pilot Programs

A Model for Measuring the Potential Effects of Prevention

The analyses above provide measures of program cost per youth based on budgeted dollars and youth served. To assess the relative utility of such programs, it is also necessary to develop a methodology for measuring the benefits of the programs.

The pilot programs were designed to reduce the demand for drugs among youth at risk. We use estimates of the cost of drug use to society to help gauge the savings resulting from drug use prevented by the outreach programs.

While ideally one would measure the reduction in drug use resulting from program participation directly, this is generally not possible. Pilot programs did not employ the basic aspects of experimental design, such as random assignment to control groups, necessary for making causal inferences about the programs. Indeed, since youth are exposed to a variety of drug prevention messages through schools, the media, peers, and others, evaluation of the effects of prevention programs *requires* a randomly assigned, controlled experiment to measure the specific impact of the pilot programs (Snow and Tebes, 1991). Measurement of program effects would also require a multiyear follow-up period to assess the durability of prevention effects over time (Hawkins et al., 1991). And effects on drug use would necessarily be based on self-report data whose reliability can be affected by program participation (Forman and Linney,

¹However, programs are required to submit budget requests well in advance of the onset of fiscal year program operation. Programs, thus, must base their requests on anticipated rather than actual youth participation. If fewer youth than expected enroll, the program's cost per youth will be inflated. For example, the Illinois National Guard FY 94 budget was based on enrollment of 1,200 youth in Operation First Choice, though fewer youth subsequently participated in the program.

1991). The small size of many pilot programs also makes the identification of significant program effects difficult given the low baseline rates of drug use and, particularly, drug-use initiation in the age groups represented.

Some programs did attempt to directly measure effects of the pilots. The Department of the Navy's evaluations of both DEFY programs were perhaps the strongest because they included control groups. However, even these evaluations were severely limited in terms of impact on drug use (even though they offered useful information on other dimensions) by the difficulties mentioned above. The evaluations did not involve random assignment. Indeed, the selection process for both treatment and control groups was not even clearly specified and adhered to. Control group members were found to significantly differ from experimental DEFY participants, sample sizes were extremely small (approximately 35 youth in Pensacola and 45 in Alameda), and overall levels of reported drug use were too low to allow meaningful conclusions from the survey data (only two to three youth at each site reported having ever experimented with illegal drugs). In general, time and cost constraints make conducting large-scale controlled evaluations of the pilot programs untenable. Such evaluations cost in the area of \$1 million/year over multiple years. Since there were 12 pilot programs and an even greater number of distinct interventions, full outcome evaluations would have cost substantially more than the programs themselves. For these reasons, we employ an alternative approach to understanding program effectiveness.

While the actual effects of the pilot programs are unmeasurable as a controlled experiment, it is possible to work backwards to determine how effective a program would *have to be* to achieve cost-effectiveness. This requires the calculation of the percentage reduction in drug consumption required such that the economic savings from prevented drug use are equal to or exceed the cost of the programs. To do this, one must estimate both the amount and the value of reduced consumption required to achieve a specific cost reduction.

To understand program effectiveness, one must also consider both the short- and long-term goals of prevention, as well as the relationship between the two. In the short term, prevention programs seek to reduce initiation into drug use, while the long-term goal of prevention is that individuals maintain nonuse. It is thus desirable to develop a framework that predicts the long-term effects of reduced drug consumption.

The approach taken here is to estimate the characteristics of an average career of drug use based on a dynamic model of the demand for cocaine developed by Rydell and Everingham (1994) that is discussed in detail in Appendix B. The

model divides individuals into three groups based on drug use: nonusers, light users, and heavy users. It then predicts the change in drug consumption over a 20-year period that could be expected from a variety of prevention interventions based on observed rates of transition between stages of drug use.² While useful, the model has a number of limitations, which are detailed in Appendix B. The net effect of these limitations is that the thresholds reported below are approximate. They are accurate to within an order of magnitude but could be off by a factor of two or four.

A dollar value is assigned to the reduction in drug use, using measures of the societal cost of drug use. Rice et al. (1990) estimated the economic cost of drug abuse at over \$46 billion in 1985. This measure is adjusted to 1992 dollars and apportioned into the costs of cocaine use and costs of marijuana use based on their relative shares in illicit drug markets. The derivation of economic cost estimates is included in Appendix B. The total social cost of each drug is divided by total consumption so that reduced consumption due to prevention programs can be translated into reduced social cost per kilogram of substance not consumed.³ Based on estimates of national consumption, each kilogram of cocaine consumed in the United States in 1992 resulted in a social cost of \$92,797, while a kilogram of marijuana consumed resulted in a social cost of \$4,675.⁴ The social savings that result from prevented drug use are then compared with program costs to determine the threshold level of prevention necessary for program costs to be exceeded by the social costs avoided. A cost-effective program is one for which the direct and indirect program benefits exceed the program costs.

To illustrate, consider a hypothetical drug prevention program with 100 participants that costs \$100 per youth (\$10,000 total program budget) and that prevents 1 percent of all youth in the program from initiating cocaine use in the year of the intervention. Using the Everingham and Rydell model, we estimate

²These rates are derived from rates of initiation from nonuse to light use and progression from light use to heavy use observed in the household, homeless, and incarcerated populations. It is a significant extrapolation to apply them to a cohort of youth, but they are the best available, and reestimating these parameters and revalidating the model were beyond the scope of this project.

³Costs can also be apportioned on a per-user or per-heavy-user basis. The rationale behind, and results of, using these alternate apportionment rules are included in Appendix B.

⁴Presumably these prevention programs may reduce use of other illicit drugs. The models do not exist at present for estimating these benefits, though they are likely to be smaller than those associated with marijuana (the most widely used illicit drug) and cocaine (the drug with the largest black market, measured in dollar value). This is another reason why the cost-effectiveness thresholds estimated here are conservative.

that such a program would result in 0.20 fewer kilograms of cocaine consumed over 20 years (discounted at 4 percent per year).⁵

Combining these results with social cost measures indicates that the hypothetical program described above would avoid \$18,559 in social costs by avoiding 0.20 kilograms of cocaine consumption. Thus, this program would appear to be cost-effective because the societal cost avoided (i.e., the benefits) exceeds the program's \$10,000 budget (the limited precision of these calculations precludes drawing stronger inferences from these numbers).

One can also work backward from knowledge of typical patterns of drug consumption, conservative estimates of the social costs associated with substance abuse, and the costs of pilot programs to determine how effective the programs *would have to be*, in terms of reduced initiation, in order for the projected reduction in social cost to just exceed the program cost. Since a 1 percent reduction in drug initiation led to savings estimated at 1.86 times the program cost, the "break-even" effectiveness for this hypothetical program is 0.54 percent ($1/1.86$). A program that costs \$100/youth and whose only effect is preventing cocaine initiation must prevent at least 0.54 percent of the youth from initiating in order for program costs to just be equaled by the savings in social cost.

While the Everingham/Rydell model calculates the effects of interventions on cocaine and marijuana consumption independently, actual prevention programs are likely to affect the use of all drugs. To be cost-effective, a program would need only for the sum of social savings to exceed program costs. To illustrate, consider a 100-youth program with the same costs as above that prevented 1 percent of youth from initiating marijuana, but had no effect on cocaine use. Such a program would avoid \$3,368 in economic costs because of prevented marijuana initiations and thus would have to prevent 3.0 percent ($1.0 \text{ percent} \times \$10,000/\$3,368$) of the youth from initiating marijuana use in the year of the intervention to operate just cost-effectively. Recall, the same program would also operate cost-effectively if it prevented 0.54 percent of cocaine initiations. Since the model is linear, any weighted combination of these two program effects would result in a cost-effective program; e.g., a program that prevented both 1.5 percent of the youth from initiating marijuana use and 0.27 percent of the youth from initiating cocaine use would be cost-effective by this criterion since the sum

⁵ The use of a 20-year time horizon for calculating program effects allows the model to capture the effects of an entire career of drug use rather than a single year of consumption. Most users do not maintain drug use for long periods of time, indicating that prevention effects are usually only meaningful in the short term. However, some heavy users consume large quantities of drugs for long periods of time. A longer-term horizon is thus required so as not to underestimate the benefits of preventing initiation of the long-term heavy user.

of the benefits of reduced marijuana and cocaine use would exceed program costs.

Similar arguments also apply across types of impact—whether delayed or prevented initiation. Suppose the same 100-youth, \$10,000 program is only able to delay initiations until the fifth year after the program. Such a program must delay 2.4 percent of cocaine initiations to operate cost-effectively. It is also possible for programs to be cost-effective by combining prevented and delayed initiations. For example, cost-effectiveness would be achieved by a program that prevents 1.5 percent of the youth from initiating marijuana use and also delays 1.2 percent of the youth from initiating cocaine use for five years.

How Cost-Effective Were the Pilot Programs?

Table 4.2 summarizes the break-even thresholds for cost-effectiveness of each program. The larger the break-even percentage, the more effective the program must be at reducing or delaying marijuana and cocaine initiations for program costs to equal measurable economic benefits of prevention.

To understand how to read the table, consider the first line, which applies to Navy Kids. It says that a program that costs as much per youth as Navy Kids would have to prevent 1.21 percent of the youth in the program from initiating cocaine use today (scenario 1), or prevent 1.58 percent from initiating in the fifth year after the intervention (scenario 2), or delay initiation for four years for 5.29 percent of youth (scenario 3) to meet this definition of cost-effectiveness. The comparable numbers for effects on marijuana are 6.54 percent, 8.21 percent, and 32.26 percent, respectively. Again, combinations of effects can make a program cost-effective. For example, a program that cost as much as Navy Kids and prevented 0.30 percent ($0.30 \text{ percent} = 0.25 \times 1.21 \text{ percent}$) of the youth from initiating cocaine today and 0.40 percent ($0.40 \text{ percent} = 0.25 \times 1.58 \text{ percent}$) from initiating cocaine use in five years and 2.65 percent ($2.65 \text{ percent} = 0.5 \times 5.29 \text{ percent}$) from initiating marijuana use today would also just meet this criterion for cost-effectiveness (because $0.25 + 0.25 + 0.50 = 1.0$).

To operate cost-effectively, programs that impact marijuana use only must effect larger reductions in initiations than programs that impact cocaine, since cocaine is associated with higher social costs than marijuana. The break-even effectiveness for marijuana is larger than that for cocaine by a factor of about six. In addition, programs that merely delay initiations must affect a larger fraction of youth than programs that fully prevent initiation to achieve cost-effectiveness. The break-even rate for four-year delay programs is larger than that for full prevention by a factor of about five. Also, break-even rates are directly

Table 4.2
Break-Even Cost Thresholds: Percentage of Youth Who Must Have Their Behavior Changed
Under Various Scenarios to Achieve Cost-Effectiveness

Program	Effectiveness Scenario (%) (defined at bottom of table)								
	Cocaine						Marijuana		
	1	2	3	1	2	3	1	2	3
Mentoring/tutoring									
Navy Kids	1.21	1.58	5.29	6.54	8.21	32.26			
Fort Sam Houston Mentoring Program	1.27	1.65	5.54	6.84	8.58	33.73			
Oregon Mentors	0.70	0.90	3.07	3.79	4.75	18.69			
Uniformed									
YM FY 95	0.65	0.84	2.81	3.48	4.36	17.15			
YM FY 94	1.25	1.63	5.47	6.79	8.52	33.47			
NY NG Corps of Cadets FY 93	2.88	3.52	15.96	17.04	20.88	92.73			
Physical fitness									
Canon AFB Sports Program	5.39	6.99	23.50	29.05	36.44	143.23			
OFC 93-94	1.40	1.81	6.09	7.53	9.45	36.03			
OFC FY 94	3.28	4.25	14.29	17.67	22.16	87.11			
Adventure camps									
Cannon AFB Summer Sports Camp	2.94	3.81	12.81	15.84	19.87	78.08			
Shaw AFB DARE Camp FY 93	1.65	2.14	7.18	8.87	11.13	43.73			

Table 4.2—continued

Program	Effectiveness Scenario (%) (defined at bottom of table)								
	Cocaine						Marijuana		
	1	2	3	1	2	3	1	2	3
Shaw AFB DARE Camp FY 94	0.96	1.25	4.18	5.17	6.49	25.50			
Be Your Best	0.37	0.47	1.59	1.97	2.47	9.72			
La Salida FY 93	0.70	0.91	3.07	3.79	4.76	18.69			
Camps with mentoring follow-up (DEFY)									
Alameda DEFY	19.23	24.96	83.89	103.68	130.06	511.19			
Pensacola DEFY	19.54	25.36	85.20	105.34	132.14	519.41			
DEFY national	3.21	4.16	14.00	17.38	21.80	85.67			
Other programs									
Kansas Parent Network	0.77	1.00	3.37	4.17	5.23	20.56			

Scenario 1: Program prevents drug initiations that would have occurred in the year of the intervention.

Scenario 2: Program prevents initiations that would have occurred in the fifth year after the intervention.

Scenario 3: Program delays initiations that would have occurred in the year of the program until four years after the program.

proportional to cost per youth, so the DEFY pilot programs would have to have had more than 15 times the influence of mentoring programs to be as cost-effective, based on the average cost of these programs per youth.

It would be useful to compare the break-even thresholds for programs calculated here with estimates of the actual effectiveness of prevention programs from prior studies. As discussed previously, the literature provides scant evidence of the potential effectiveness of prevention programs for youth. A prevention program that targets 8–12 year olds, for example, may not show results of decreased drug use until many years after the program. Conversely, measurable effects may be only temporary (Ellickson, Bell, and Harrison, unpublished). Some evaluations have found that prevention programs do not result in any statistically measurable reduction in drug use (Ennet et al., 1994). While there are numerous prevention programs currently being conducted, the vast majority of these have never been evaluated for program effects (Goodstadt, 1990; Springer, 1990; GAO 1993a, 1993b; Moskowitz, 1993; among others).

It is also important to note that not everyone in a prevention program is at risk of starting drug use, and not all of those at risk will be prevented from starting by the program. For example, if 10 percent of the people in a prevention program would have started using cocaine without the program, and if the program prevents 10 percent of those people from initiating cocaine use, then only one person in 100 (1 percent) in the prevention program is actually prevented from starting cocaine.

With this in mind, it appears unlikely that prevention programs will achieve more than a 5 percent effect rate. In a group of 100 youth, 20 percent of whom would have initiated cocaine,⁶ this would translate to preventing one-fourth of the future users from initiating, i.e., five prevented initiations. This degree of effectiveness is ambitious, and we consider it to be an upper bound on the potential effectiveness of the pilot programs.

A number of broad conclusions emerge from the break-even comparisons in Table 4.2. First, it is important to target youth who are at risk for hard drug use. Even though marijuana is the illegal drug most widely used, the social costs of marijuana use are much lower than those for cocaine or heroin. Since outreach programs are expensive, programs that affect only marijuana use and do not target youth at risk for hard drug use are unlikely to be cost-effective.

⁶Monitoring the Future, an annual survey of high school seniors, finds that in 1992, 6.1 percent of all high school seniors reported ever trying cocaine.

Next, programs that only delay drug initiation require extremely large percentages of delayed user initiations to achieve cost-effectiveness. Delayed initiations still result in eventual drug use with high social costs accumulated over time. Thus, costs can be recovered through delays only if extremely large numbers of initiations are delayed for long periods of time.⁷

Camp programs are relatively inexpensive because of their short duration. This results in lower required thresholds of prevention and makes camp programs appear cost-effective. However, since the duration of program exposure is brief, it is expected that these programs will not affect behavior to the degree of programs that include longer-term follow-up, and thus will achieve lower rates of prevented initiations.

Mentoring programs appear to be cost-effective, likely aided by their heavy reliance on volunteer hours and the fact that most mentors provide their own transportation and use personal funds to facilitate mentoring activities. This heavy reliance on personal time and resource contributions results in programs that are able to function on small operating/administration budgets.

It appears that uniformed programs may be cost-effective, but that cannot be concluded with confidence since there are no reliable outcome evaluations of comparable programs. The uniformed programs are not very expensive considering their extended and intensive intervention, so common sense would suggest that they are cost-effective. The literature cannot reinforce this, however, simply because there are no civilian programs that are truly comparable to Young Marines or the New York National Guard Corps of Cadets.

Last, the FY 93 DEFY pilot programs were very expensive per youth and thus appear to be cost-ineffective. This was the result of high costs associated with development and implementation of the highly structured DEFY program. Also, DEFY provides an intensive program to a small number of at-risk youth with weekly mentoring, monthly group activities, and camp activities. The scope of DEFY activities was much larger than that of any other pilot program. The DEFY national expansion will benefit from investments in program structure, training, and implementation at the two pilot sites and was thus budgeted to operate at a much lower per-youth level.

Note: Some programs in Table 4.2 appear to require a greater-than-100-percent reduction in user initiations to achieve cost-effectiveness. While this is unlikely, greater-than-100-percent effects are not impossible. Prevention effects may

⁷For technical reasons described in Appendix B, the benefits of delayed initiations are subject to greater estimation error than the benefits of prevented initiations.

conceivably extend beyond the youth directly served by the program. Initiation into drug abuse is often compared with an epidemic; initiation of one youth prompts the initiation of another.⁸ Thus, preventing one initiation directly may result in the indirect prevention of several more initiations. Youth may share prevention knowledge with friends, and those who do not initiate drug use are not likely to encourage their peers to use drugs, a major impetus in the spread of drug use among youth.

Even given the limitations inherent in the data used here, cost-effectiveness comparisons suggest that many pilot programs are already operating cost-effectively.

Other Benefits of Pilot Programs to Youth

The cost-effectiveness discussion above considered only the benefits of reduced drug use, but the programs seek to provide many benefits to the participants other than reduced drug use, both directly (e.g., first aid instruction) and indirectly (e.g., greater self-esteem leading to a variety of positive outcomes such as reduced gang participation and teenage pregnancy). Indeed, although these other benefits were not measured (except in some cases by the services' own evaluation) and comparing such vastly different kinds of benefits in a formal sense is impossible, subjectively it seems likely that since there are so many other aspects of the outreach programs, these other benefits may well exceed, in total, the benefits associated with reduced drug use.

It is not a mistake for drug prevention programs to provide benefits other than drug prevention. Indeed, it would be a mistake to design a program whose only benefit was drug prevention, for at least two reasons. First, the literature on drug prevention shows that the most effective way to reduce drug use is to embed an antidrug message in activities, such as a physical fitness program. Second, once the investment has been made to create a program, identify staff, gather the youth, etc., the marginal cost of creating these additional benefits can be very small. For example, once youth are in a drug prevention camp, with marginal additional effort they can be given a class on CPR.

On the other hand, it is not the case that every program that is good for the youth will also reduce drug use. So-called "affective programs," which seek to improve self-esteem, self-attitude, and awareness but which do not address drug use directly, have been shown to be ineffective at reducing drug use.

⁸This perspective is common and dates back at least to Hughes and Crawford (1972).

Thus: (1) the programs should have some focus on drug use reduction and an explicit recognition that one of the program's principal goals is drug prevention, but (2) not all of the activities in a program need be explicitly focused on drugs, (3) it is natural to provide benefits other than reductions in drug use, and (4) those other benefits may well be greater than the benefits of reduced drug use.

5. Effects on the Military

This section describes the impact of the current pilot programs and seeks to establish bounds on how large the community outreach program could become, to help understand the programs' future effects.

Effects on the Military of the Current Programs

This subsection discusses the impact of the existing community outreach drug prevention programs for youth.

Adverse Impacts on Readiness

The military's first mission is defense. Hence, a relevant question is what impact the outreach programs have on readiness. Adverse impact on readiness occurs to the extent that dollars, time, and other resources are allocated to this program instead of traditional military activities. Possible positive effects on readiness are considered in the following sub-subsection.

Dollars. The money spent on the outreach programs could have been spent purchasing military equipment, paying for training, hiring more personnel, etc. Not using these funds for such traditional defense purposes has a direct adverse impact on readiness.

Section 1045 of the authorizing legislation states that "funds available to the Department of Defense for drug interdiction and counterdrug activities may be used for carrying out the pilot outreach program." If a dollar that is constrained to be spent on drug interdiction and counterdrug activities contributes less to readiness than a dollar that is not so constrained, then the nature of the funding provided by Section 1045 may mitigate some of the opportunity cost in terms of readiness of spending dollars on community outreach.

Time. Most volunteers participated for an hour a week (e.g., mentoring) and/or a significant block of time just once or a few times per year (e.g., La Salida). In most cases this need not affect duty performance. However, some programs granted civilian employees release time for participating. This reduces time on task and, hence, could have an adverse impact on readiness unless the positive impact on morale of volunteering increases productivity enough in the

remaining work time to more than compensate; such a compensating increase in morale seems plausible in many cases based on the enthusiasm of the volunteers we interviewed.

Some volunteers put in much more than one or a few hours per week. For example, commanding officers of Young Marines units, many of whom are active-duty marines, volunteer 10–25 hours per week. A commitment of this scope clearly has the potential to adversely affect readiness, although the individuals facing this situation that were interviewed asserted that their job performance was unaffected.

Program administrators also devote more than a few hours per week to the programs. When program administrators' job descriptions include administering the program, their salary is on budget and the impact on readiness is included under "dollars" above. When program administrators' job descriptions do not include administering the program, they are essentially volunteers. If they can run the outreach program in their spare time and still devote full-time effort to the duties covered in their job description, there is no adverse impact on those other duties; otherwise there is.

National Guard time devoted to the pilot outreach programs generally has no adverse impact on readiness. When Guardsmembers were employed full time by the outreach programs, their salary was on budget and they still maintained their weekend and summer training commitments. If a National Guardsmember who had a civilian day job volunteered too many hours, it would be the civilian job that suffers; the weekend and summer training would generally not be affected. The only way that time National Guardsmembers commit to the community outreach program could have an adverse impact would be instances in which Guardsmembers had full-time Guard jobs outside the community outreach program, they volunteered substantial numbers of hours, and their volunteering interfered with their day job for the National Guard. We observed no such instance.

Other Resources. There were various informal, in-kind contributions made to the pilot programs—e.g., electricity for lights and gasoline used to transport the youth at Camp Bullis. These are best thought of in the same way as dollars spent on the program.

In terms of nonmarket physical assets, e.g., access to an armory or base, conventional military functions were always given priority over a community outreach activity. For example, armory-based youth programs operate when the armory is not being used by the Guard. Camp Bullis was used for La Salida on weekends when it was not needed for training exercises. Since the wear and tear

on these facilities by the pilot programs is minimal, the use of these physical assets had essentially no impact on readiness.

Positive Impacts on Readiness

Several outreach programs had modest, positive effects on readiness in the form of training, improved morale, and/or enhancing the National Guard's ability to perform its duties.

Training. There were instances in which the outreach programs afforded some training benefits. For example, several people claimed that young noncommissioned officers learn troop-handling skills by working with the New York National Guard Corps of Cadets (NYNGCC) and the Young Marines. La Salida was used to give young captains a chance to practice planning and running an operation. Occasionally program volunteers can practice or review military-relevant skills, such as a medic teaching first aid classes.

Morale. We repeatedly heard testimony about the benefits to morale for the individuals who worked with these programs, both from program administrators and from the volunteers themselves. Many people enjoy the break from the routine, want a chance to "give something back to the community," or to "make a difference."

We only rarely saw evidence of entire units getting a morale boost from being associated with a community outreach program. That is, there seemed to be little impact on the morale of military people who were not themselves active in the program.

Preparation for National Guard Missions. The National Guard's missions include various actions taken in the community, including riot control. Community outreach can make the National Guard more effective because it builds (1) respect in the community for the Guard and (2) understanding of the community on the part of the Guard. Site visits to Guard pilot programs suggested that the outreach programs did have a positive impact on Guard-community relations, as is elaborated below.

Community Relations

Based on interviews with community leaders, youth, and parents, as well as members of the military, the pilot programs seemed to have a positive impact on base-community relations. The extent of the impact varies by site, depending on efforts devoted to publicity as well as program characteristics. Although the

impact was clearly positive and sometimes dramatic (e.g., Humboldt Armory in Chicago), there was also untapped potential in this regard (e.g., information about Young Marines was spread primarily by word of mouth). The impact was described to us as being greater among the leadership (e.g., the schools, the mayor's office, etc.) than among the people in the street. In many cases (e.g., Shaw AFB) base-community relations were already reported to be excellent, so the pilot program merely reinforced existing good will.

Some programs are inherently more visible than others. Programs that put youth in uniform (Young Marines and NYNGCC) are highly visible. Adventure camp programs draw attention to themselves (e.g., the mayor of San Antonio has praised La Salida in several speeches and President Clinton visited DEFY), as can Adopt-A-School. Mentoring receives less attention from the public at large, except for parents and teachers directly involved.

We used the LEXUS/NEXUS computer reference program to search for all newspaper articles written about the pilot programs, counted and read those articles, and followed up with phone conversations with some of the reporters. In general, newspaper coverage looks most favorably on programs that focus on youth from low-income neighborhoods. It is most extensive in small towns with few competing news stories; however, such communities may already have a high level of awareness of the military and its other outreach activities.

Outreach programs may generally have a favorable effect on community relations, but there are three plausible scenarios for a negative impact. First, if a program is initiated, high expectations are created, and the program is summarily canceled, that can create disappointment and resentment. This is most likely to occur because of a change in base command. This happened to a degree at an individual base but would also be a concern if the entire community outreach program moved beyond the pilot stage and then were eliminated.

The second plausible scenario is a highly publicized incident in which a youth was hurt in some way. One youth died while participating in one of the programs, so this scenario is not implausible. (In this case the parents did not blame the DoD or the program in any way or seek to publicize the incident.) Sexual abuse of a youth, e.g., by a mentor, is a similar concern. Most of the programs are conscious of these risks and take varying degrees of precautions, but it is impossible to guarantee that such events will not happen. If the programs are scaled up, it is likely that some such incidents will arise—not because they are any more likely to happen in a military program than in a nonmilitary program, but because there is always a small risk per youth.

Third, there could be an instance in which a youth in one of the pilot programs acts in a way that embarrasses the military. An example would be a member of the Young Marines or NYNGCC committing crimes while in uniform. It is not even necessary that the action be widespread, frequent, or extreme for it to attract adverse media attention.

Possible Interaction with Other Programs

Many bases have other volunteer programs, some of which relate to drug prevention. The drug-demand reduction programs for youth could interact with these existing volunteer programs, either positively or negatively. For example, if all of the drug-demand reduction volunteers are drawn from people who would have volunteered for other programs but now do not, then the net benefit of the new outreach programs in terms of community relations will be small. On the other hand, some volunteer coordinators claimed that the drug prevention programs drew new people into volunteering, increasing the pool of volunteers for other programs. It is not possible to assess the relative magnitude of these competing effects.

There is also potential for interaction with other community relations and public affairs efforts. Given its scope, this study cannot guarantee that this interaction would not be problematic, but no such instances were apparent among the pilot programs. Nevertheless, coordination with these offices is desirable.

Potential for Expansion

The pilot programs were so small (less than 0.0002 percent of the total defense budget) that the absolute magnitude of the effects just described are small. It is important, however, to ask by how much the programs might be expanded to gain an understanding of the potential magnitude of impact in the future.

Community outreach programs require at least four inputs: youth at risk, volunteer staff, facilities, and funds. This subsection enumerates the availability of these resources to analyze which inputs might eventually place constraints on program expansion.

Some resources are more scarce than others. In cases where certain resources are difficult to obtain, programs may substitute other assets. For example, a program with low levels of funding may rely entirely on volunteer staff, whereas a well-funded program may allocate funds toward hiring a salaried program coordinator.

High-Risk Youth

Public Law 99-570 of October 27, 1986, defines a "high-risk youth" as an individual under the age of 21 who

- has used drugs or
- is the child of a substance abuser or
- is the victim of abuse or
- has dropped out of school or
- has become pregnant or
- is economically disadvantaged or
- has committed a violent or delinquent act or
- has experienced mental health problems or
- has attempted suicide or
- is disabled by injuries.

A youth fitting any of the descriptions above would ostensibly benefit from participation in DoD pilot programs. Ideally, programs would expand to provide outreach to all such high-risk youth, but how large would programs have to be to serve all youth at risk?

In 1991, there were 2,355,000 high school dropouts, 533,000 births to women less than 20 years of age, 16,783,000 youth below the poverty level, and 2,641,860 youth aged 12–17 who had used marijuana (U.S. Bureau of the Census, 1993). These figures provide some indication of the size of the population of high-risk youth. However, a single individual may contribute to the counts in more than one category, so one cannot simply add these numbers to approximate the total number of youth who are at risk. The size of the current drug-using youth population is more than 2.6 million (according to the 1992 National Household Survey on Drug Abuse [NHSDA]) and can be considered an absolute lower bound on the number of youth who are in immediate need of prevention.

To get a tighter lower bound, we used the 1991 NHSDA conducted by the National Institute on Drug Abuse to estimate the number of youth aged 12–20 whose survey responses place them in at least one of the categories enumerated by Public Law 99-570. These included youth who responded that in the last 12 months they had

- been arrested or
- were on judicial probation or parole or

- stolen something from a store or individual or
- damaged property or
- stolen a car or
- used force to get money or
- broken into a house or
- gotten into a physical fight or
- hurt someone badly enough to need a physician or
- used a weapon to get money/possessions or
- driven under the influence or
- sold drugs or
- gotten into other trouble with the police or
- had a family member on welfare in the past month or
- not ever graduated high school and were over 18 or
- *ever* been treated for psychological problems or
- *ever* used an illicit drug.

Based on the 1991 NHSDA, it is estimated that there are at least 18.7 million youth in the United States who are at risk per the congressional definition.

The total number of youth who have been served by the pilot programs to date is difficult to determine. Some outreach programs included community events, such as Red Ribbon Week, that could conceivably reach all the youth in an area but actively involve an unknown number at a level not comparable to that of youth who eventually enroll in a program. Excluding these and based on the program sizes presented in Table 4.1, it is reasonable to assume that current DoD outreach programs serve directly *at least* 10,000 youth, but not more than 20,000 and probably close to 10,000.

To provide outreach to 18.7 million youth who meet the definition of "at risk," pilot programs would have to be expanded by a factor of 1,000 or so. Furthermore, most programs cannot limit participation to youth who meet the definition of being at risk, suggesting that more youth than those considered at risk would have to receive outreach to ensure complete coverage of the at-risk population. In short, the number of youth at risk will not constrain program expansion.

Personnel and Volunteerism

Most pilot programs were not hampered by a lack of volunteers, but program expansion may eventually be constrained by volunteer availability. The Fort Sam Houston Community Mentors Program is one program that has already faced such constraints. In FY 93, 400 youth were targeted for one-on-one mentoring but only 265 mentors were recruited. Conversely, some small programs may currently exhibit an excess supply—more interested volunteers than available positions—due to the small-scale nature of most pilot programs. Volunteers interviewed at the Alameda NAS DEFY program were aware of other NAS personnel who were interested in joining the mentor program when it was expanded.

The number of potential volunteers can be estimated by multiplying the total number of eligible individuals by the observed rate of participation in pilot programs. These two factors, supply of eligible individuals and the volunteer rate, are estimated below.

Volunteer Supply and Eligibility. Outreach programs require background checks on all volunteers who work with youth. Current programs draw volunteer staff from

- active military—officers and enlisted
- retired and reserve military and National Guard
- retired military
- civilian military employees
- members of the community.

Active Military Volunteers. Most programs based at active military sites rely heavily on volunteers from the active force. Volunteers are drawn from both the enlisted and officer ranks. As of April 1994, there were over 1.6 million members of the active force. Of these, slightly more than 350,000 are serving overseas and 62,000 are posted on ships afloat. The remaining nearly 1 million enlisted and 200,000 officers serving within the United States constitute the uniformed population available for community volunteer efforts (Defense Manpower Data Center [DMDC], 1994).

However, participation in volunteer programs is difficult for some members of the U.S. active force. Units that must be available for rapid deployment might have difficulty participating in volunteer programs. For example, the 82nd Airborne maintains an 18-hour alert. Programs with long-term time

commitments may also find fewer active servicepeople to be available for volunteer programs. This is particularly relevant to Navy programs since sailors are required to deploy to sea on a regular basis. The DEFY program conducted at NAS Alameda has already had difficulty with mentors who have had to give up protégé relationships before program completion. Fort Campbell has experienced difficulty in recruiting volunteers since most soldiers at the base are there on maneuvers and thus are unavailable for participation in regular programs.

Reserve Volunteers. Many programs invite members of the reserve forces to participate in pilot outreach programs. These individuals are also members of the communities in which programs are established and may serve as useful assets in program implementation. As of April 1994, there were 1.3 million non-Guard reservists in the United States (DMDC, 1994).

National Guard Volunteers. Members of the National Guard provide a unique type of community volunteer. Most Guardspeople live and work in the communities they serve and have a vested interest in reducing high-risk behavior there. Also, the mission of the National Guard includes community service, making volunteerism within the Guard a particularly appropriate activity.

As of April 1994, there were over 400,000 Army National Guard and 110,000 Air National Guard members (DMDC, 1994).

Civilian-Service Volunteers. While programs currently draw volunteers from both the military and civilian-service employee populations, most programs place heavier reliance on military volunteers. Civilian-service employees generally encounter limitations on the administrative leave time they are allowed. Also, civilian employees are only obligated to work for a fixed time, generally 40 hours/week, while members of the active military are more likely to consider participation in military-sponsored volunteer efforts as part of their more general mission of service to the nation. This would suggest that civilian-service volunteers might be more "costly" than active military volunteers since civilian volunteer participation is more likely to come at the expense of paid tasks. Still, many programs include sizable numbers of civilian volunteers. More than one-half of the Navy Kids volunteers were civilian, though this varied substantially by site.

As of April 1994, there were over 800,000 civilian-service employees of the active force (DMDC, 1994).

Community Volunteers. Some programs allowed members of the community to volunteer. The Oregon Mentors Program drew volunteers from a variety of

civilian sources, including college students and military family members who were not civilian-service employees. Community volunteers provide a virtually limitless volunteer base.

Thus, there are about 4 million individuals affiliated with the military who are eligible to volunteer and an undetermined number of members of the general public.

Rates of Volunteerism. As mentioned previously, it is difficult to assess rates of volunteerism in small-scale pilot programs, but Table 5.1 presents the available data on program volunteers and gives some indication of typical rates of volunteerism in the pilot programs.

It is sometimes difficult to accurately measure the overall population from which the pilot program volunteers were drawn. Programs that operated at base facilities ostensibly drew volunteers from the entire base population. However, it is difficult to measure the size of the pool of potential volunteers for programs that operated from command posts and other nonbase facilities (e.g., Navy Kids). In these cases, the number of eligible volunteers is assumed to be the total number of active, reserve, and civilian-service employees at the location. Since command posts and other office facilities may draw outreach volunteers from other nearby sites, the number of on-post employees is a lower bound on the size of the volunteer pool. Thus, rates of volunteerism calculated here are upper bounds.

Volunteer rates in the pilot programs varied widely but never exceeded 4 percent, even for programs with modest volunteer time requirements. For example, Navy Kids requires tutoring for one hour/week, and youth are bused to meetings to eliminate the need for mentors to spend additional time traveling. Nonetheless, the program still draws only about 1 percent of those working at Navy Kids locations for pilot outreach volunteer programs.

From Table 5.1, total volunteer participation in pilot programs was about 2,000–2,500. Multiplying the 4 million eligible military members and civilian-service employees by the upper bound volunteerism rate of 4 percent gives a maximum number of volunteers of 160,000. Thus, constraints on the number of volunteers would prevent the pilot programs from expanding by more than a factor of 65 to 80. Since the personnel are spread across all bases and not every base is likely to sponsor an outreach program, and since observed rates of volunteerism are more typically around 1–1.5 percent, a more realistic estimate of the potential number of volunteers might be about 50,000 and thus, the maximum capacity for expansion closer to 20- to 25-fold.

Table 5.1
Rates of Volunteerism

	Number of Volunteers	Base Population	Rate	Hours Required
Fort Sam Houston Mentors	~265 FY 93	11,055 AD ^a 1,103 NG ^b 13,915 RES ^c	1.0%	1 hr/week
Navy Kids				1 hr/week, 24 weeks
BUMED	27			
BUPERS	103	2,500	4.0%	
NNNMC	28	3,363	0.8%	
NAVAIR	64			
NAVSEA	155			
OJAG	33			
PENTAGON	93	23,000	0.4%	
SPAWAR	57	900	6.3%	
US MEMORIAL	4			
WNY	20			
Total at commands with known population = 281		29,763	0.9%	
Oregon Mentors	507 total			1 hr/week
(some non-NG)				
of which:	68 Air NG	OR Air NG 2,077	3.3%	
	49 Army NG	OR Army NG 7,662	0.6%	
		Total 9,739		
Young Marines	300 adult leaders			5-6 hrs/week, year-round
NY NG Cadets		Army Air		5-6 hrs/week
Jamaica	9	482	1.9%	
Buffalo	5	1,162	0.4%	
Peekskill	5	446	1.1%	
Brooklyn	4	1,103	0.4%	
Schenectady	9	239 1,054	0.7%	
Newburgh	12	296	4.0%	
Bronx	8	525	1.5%	
Overall	52	5,307	1.0%	
DEFY	127		0.5%	
Alameda		12,000 AD 2,000 RES		
Pensacola		10,368 AD		
Cannon AFB	~75 FY 93	5,080 AD	1.5%	
Shaw AFB	~100 FY 93	5,798 AD	1.7%	

^aAD is active duty.

^bNG is National Guard.

^cRES is reserves.

Availability of Sites

Pilot programs rely on support from a nearby military installation to administer the program. Thus, the number and distribution of military facilities may constrain program expansion. Table 5.2 presents data on the total number of military installations in the United States.

Air Force outreach programs currently operate at two AFBs. There are 80–85 Air Force installations in the United States, so the number of Air Force programs could expand by no more than about 40-fold, assuming that all bases could host programs. Some, such as Shemya AFB in the Aleutian Islands in Alaska, may not be appropriate sites for community programs. Similarly, Army programs exist at 3 of the Army's 64 sites, suggesting that the number of Army programs could expand by no more than about 20-fold.

Young Marines already enrolls 2,200 youth at 55 sites, of which 47 percent are Marine Corps facilities, 18 percent are other military facilities, and 35 percent are civilian facilities. If the program was expanded to all 16 continental U.S. base/stations and 195 reserve training centers and kept the same ratio of Marine Corps to other sites, that would be an increase by a factor of eight. Together, Navy Kids and DEFY (including 1994 expansion sites) operate out of 36 locations, of which 60 percent are Navy facilities and the other 40 percent are other military facilities. The Navy, Marines, and Coast Guard run about 115 installations in total, suggesting that the number of other Navy and Marines programs could expand by four- to sixfold. Thus, availability of facilities will prevent the number of active-service programs from expanding by more than a factor of 25 or so.

Table 5.2
Military Installations in the United States

Service	Type of Facility	Number
Army	Bases	47
	Other	17
Navy, Marines and Coast Guard	Bases	3
	Other	112
Air Force	Bases	80
	Other	5
National Guard	Units	6,859
	Installations	3,200–3,300

SOURCE: *Guide to Military Installations in the U.S., 1992.*

National Guard outreach programs were piloted in 4 of the 54 states and U.S. territories and at 103 of the approximately 3,250 Guard installations nationwide.¹ The Guard programs could thus expand by a factor of 13 to 30, depending on whether one counts states or installations as the programs' administrative unit.

The National Guard has the broader unit distribution. Multiple National Guard units are dispersed throughout communities in every state, while four states (Iowa, Minnesota, Oregon, and West Virginia) do not include *any* active-service installations. Also, most major military installations are not located in central cities. New York City has one active installation (Naval Station New York on Staten Island), and Houston, the nation's fourth-largest city, has none. In contrast, all large cities have at least some affiliated National Guard units and the 10 largest cities averaged over 16 each. Table 5.3 shows the distribution of military facilities within the 10 most populous U.S. cities.

Funding Limitations

The pilot community outreach programs have operated at a level of about \$5–6 million per year. (FY 93 funding was lower since it covered only part of the year.)

Table 5.3
Number of Military Installations/Units in the 10 Most Populous U.S. Cities

City	Army Installations	Navy Installations	Air Force Installations	National Guard Units
New York, NY		1		44
Los Angeles, CA		2	4	3
Chicago, IL	1	2		25
Houston, TX				12
Philadelphia, PA		2		18
San Francisco, CA	1	3	1	19
Detroit, MI			1	8
Dallas, TX		1		10
Phoenix, AZ			2	9
San Antonio, TX	1		3	17
TOTAL	3	11	11	165

SOURCES: U.S. Bureau of the Census, 1993; *Guide to Military Installations in the U.S.*, 1992.

¹ Assumes that Oregon Mentors and Kansas Parent Network operate statewide.

Total DoD expenditures on counterdrug activities were \$1,140.7 million in FY 93 (ONDCP, 1994), \$814 million in FY 94, and are expected to total \$854.2 million in FY 95. Overall, DoD demand-reduction programs received \$88.9 million in FY 94. Hence, pilot outreach programs received 6 percent of the overall demand-reduction budget, or less than one percent (0.66 percent) of the total counterdrug budget.

Rechanneling the entire demand-reduction budget into community outreach would allow the pilot outreach programs to expand by a factor of 15, while rechanneling all counterdrug funds would allow expansion by a factor of about 150. Clearly this is neither feasible nor desirable—the 1994 National Drug Control Strategy places increased importance on demand-reduction programs but still stresses the maintenance of domestic and international enforcement efforts.

Some programs augmented DoD demand-reduction funds with other moneys. For example, the Illinois National Guard received additional funds from the lieutenant governor, the National Guard Bureau, and DoD's Division of Substance Abuse Services (DSAS) to assist with operation of Illinois OFC. The New York National Guard received \$10,000 from the lieutenant governor and approximately \$100,000 in forfeited assets for operation of the Corps of Cadets. Local Young Marines units receive additional funds from the Marine Corps League and receive moneys and materials from other local sources. For example, the Capitol Hill unit received \$1,000 last year from CHAMPS, a local business partnership. Supplemental funds obviously increase expansion potential.

Summary

Even using a lower-bound estimate of the number of youth at risk, the supply of youth would in no case constrain program expansion. Merely providing all youth who had already used marijuana with the least-costly outreach program (\$128/youth for mentoring) would require \$3.3 billion, nearly four times the total DoD allocation for all drug control activities in FY 94.

The supply of potential volunteers may place constraints on program expansion, particularly if the expansion stressed volunteer-intensive programs. The upper-bound estimate of military affiliates volunteering for community outreach at 4 percent corresponds to approximately 160,000 potential volunteers. In one-on-one programs, such as mentoring, each volunteer would serve at most one youth, so only 160,000 youth would receive outreach, a roughly 15-fold expansion. A mentoring program of this size would cost between \$26 million and \$46 million,

based on the minimum (\$128) and maximum (\$231) costs per youth associated with pilot mentoring programs, or about 5–8 times current funding levels.

The pilot programs currently use about 2,000–2,500 volunteers. Hence, if the outreach programs were expanded using the current mix of volunteer-intensive and less-intensive programs, the volunteer supply would constrain program expansion to no more than a factor of 75 or so, and probably more like a factor of 25.

Similarly, availability of sites could be a constraining factor. Maintaining one program per site and at the same average size, the outreach programs could expand by a factor of at most 20. To give a sense of the impact of such an expansion on budgets, note that if the entire demand-reduction budget were redirected to community outreach program expansion at the 250 traditional service military sites, each site would receive, on average, nearly \$340,000, based on a total of \$84.9 million available for FY 94 demand reduction. Current per-site funding averages slightly more than this. Dividing this total over the 250 sites and 54 National Guard units would leave \$280,000 per program on average.

These calculations are not in any way meant to firmly establish either a potential for, or an upper bound on, capacity for expansion. Rather, they are simply meant to give a sense of perspective. Overall they suggest that the outreach programs could not be expanded by more than a factor 20 or so without changing their fundamental character, although even a 20-fold expansion may not be possible. This suggests that military-run outreach programs will inevitably reach far fewer youth than do organizations such as the Girl Scouts (3.5 million members nationally), Boy Scouts (3.4 million), or the Boys and Girls Clubs of America (1.8 million).

6. Discussion of Attributes

This section provides an extended discussion of the attributes described at the end of Section 1.

Rely on Volunteers

The pilot outreach programs were of diverse nature, and they by no means exhaust the range of possibilities.¹ Among these diverse programs, those for which the military's dominant contribution is volunteer time (or paid personnel time for the National Guard) are generally the most likely to meet the objectives of tapping military comparative advantage, reaching out to the community, and having no or minimal impact on readiness.

To explain this, consider the following categorization of the kinds of contributions the military could make: volunteer time, paid personnel time, financial support, transfer of nonpecuniary resources, and cooperative use of physical assets.

Many of the comparative advantages the military can bring to drug prevention among youth derive from the talents of military personnel; both paid and volunteer time can draw on these, ranging from technical skills (such as are employed by adventure camps) to simple one-on-one contact time between a youth and a military role model. However, paying people to conduct community outreach programs has a direct adverse impact on readiness; dollars spent on those salaries cannot be spent on training, procurement, or other traditional military expenditures. Or, in terms of time, paid time spent on community outreach is not being spent on other military activities.

Transferring dollars directly to other organizations that provide drug prevention programs creates a similar drain on DoD resources. Furthermore, it takes minimal advantage of the military's special skills. Dollars provided through the DoD budget are no different than dollars provided through other organizations. Unless the military is uniquely able to determine which prevention agencies are

¹See, for example, the FY 93 National Guard Drug Demand Reduction Support Plans for other models.

unusually effective or deserving, funding other agencies to provide prevention services taps no military comparative advantage.

Similar arguments can be made against transferring nonpecuniary assets. The only exception would be instances in which the assets are of no value to the military (for example, transferring surplus equipment to a school that has been adopted by a military unit). But such transfers typically only indirectly support drug prevention and are likely to be a supplement to, not the core of, an effective community outreach program.

The military can also contribute physical assets that are directly used by a drug prevention program but that are not transferred or given away. For example, an armory might be a useful meeting place for an outreach program. As long as there is no impact on readiness, such contributions can be completely consistent with the objectives above.

Saying that the principal military contribution to the outreach programs should be volunteer time does not imply that these programs should never employ paid personnel or have a budget. Rather, it suggests that dollars spent and paid personnel employed should be used to facilitate and enhance the impact of volunteer time, not to constitute the core of the program.

The National Guard differs from the active and reserve with respect to this attribute because of its dual mission. Paid active and reserve personnel working on community outreach are not contributing to the principal military mission. Paid National Guardsmembers working on community outreach do contribute directly to one of the two principal missions of the National Guard.

Individual Programs Should Be of Modest Size

The optimal size of any program, community outreach or otherwise, is determined by trading off competing factors. In general, the larger the program, the greater the benefits, but also the greater the costs. While a certain size is necessary to justify fixed costs such as administrative time, there are at least two factors that suggest that community outreach drug prevention programs should be of modest size.

First, following from the first point above, the programs should center on volunteers. There is inevitably a spectrum in terms of willingness and enthusiasm for volunteering. The smaller the program, the more selective the group of volunteers.

Second, one of the benefits to the military of conducting community outreach programs is improved community relations. The community relations benefit may depend as much on the existence of a program as on its size. For example, of the pilot programs, La Salida seemed to receive the greatest attention from high-level local community leaders (being mentioned in several of the mayor of San Antonio's speeches), even though it is an intervention of modest scale (confined to one weekend). Also, there appeared to be little relationship between the size or scope of a program and the amount of newspaper coverage it received.

Programs Should Be "Invented" Locally

There are many reasons why programs should be developed locally rather than standardized across the country.

First, local needs vary, and prevention programs should be responsive to the needs of the community (OSAP, 1991b). Youth at some pilot outreach programs reported participating in a wide variety of extracurricular activities; in other areas there seemed to be fewer such opportunities and, hence, greater need for alternatives programs such as Task Force Teen or Operation First Choice. Similarly, since schools are locally funded and administered, their quality can vary considerably across communities (e.g., Choy et al., 1993). Youth in communities with lower-quality schools may be in greater need of tutoring programs such as Navy Kids.

Second, the literature on drug prevention firmly supports the notion that prevention programs should be conducted "with" not "to" the community (OSAP, 1991b) and that prevention should take the "thousand flowers" approach of coordinating many different prevention components and programs that are adapted to local needs (Kumpfer et al., 1986). Standardized, national programs leave less opportunity for engaging the community in a truly collaborative partnership. Also, since the resources communities can bring to a collaborative relationship vary by site, standardized programs may not take the fullest possible advantage of local resources.

Outreach programs should strive to create collaborative relationships with local community groups not just because it will make the prevention programs more effective, but also because the military needs the assistance of other organizations. The military has significant assets for conducting drug prevention, but alone it does not have all the resources and talents necessary to deliver prevention programs efficiently. For example, in many cases the military has limited ability to identify and attract youth; simply advertising a program

and taking all applicants is not enough because it is important to target interventions on the youth for whom they will have the most benefit. Similarly, one of the mentor program coordinators stressed the need for a professional contact at the school who can deal with special problems that the youth have. In other cases the military's limitation is not lack of ability but procedural prohibitions or other organizational rigidity. For example, there are restrictions on military personnel soliciting donations from private companies. Affiliated community groups could, however, enlist this support, which can be an important part of a comprehensive, communitywide prevention effort.

Another reason to allow programs to be invented locally rather than designed and imposed from above is that it creates "pride in ownership" at the local level. This principle extends beyond drug prevention and community outreach; indeed, belief in the benefits of low-level participation in planning dates back at least to the work of McGregor (1960) and is a central tenet of the "total quality management" movement (Creech, 1994).

When there are clearly right and wrong ways of executing a program, central oversight and control that ensures that the accepted procedures are implemented are essential. There is, however, no such "silver bullet" design formula that ensures that a prevention program will succeed (Bukoski, 1991; Hawkins, Catalano, and Miller, 1992). On the other hand, there is evidence that an enthusiastic, motivated staff is essential to effective drug interventions, and the premise that motivation and commitment increase with autonomy and participation in design and planning is well supported in the organizational behavior literature by field studies (e.g., Hackman and Oldham, 1980), laboratory studies (e.g., Locke and Latham, 1990), and the few studies that have achieved controlled experimental designs with random assignment in the field (e.g., Krackhardt et al., 1981). Hence, for community outreach drug prevention programs, the best balance between local autonomy and central control may lie closer to local autonomy than in other domains.

One aspect of a collaborative relationship with non-DoD partners can be funding. Not all of the financial support for a community outreach program need come through the OSD. Indeed, OSAP (1991b, p. 25) recommends that "a broad financial base be established so that programs are not dependent on any single source of funding." Since the government fiscal year is poorly timed relative to the school year and OSD funding will inevitably not be available from the first day of the fiscal year, such complementary funding can help mitigate the consequences of the "feast or famine" funding that hurt the pilot programs. Also, nonmilitary funding can sometimes be used more flexibly. For example, in FY 94 the NYNGCC did not budget explicitly for refreshments for youth at

meetings. Hence, it could not use OSD funds for that purpose but could use funds it obtained from the lieutenant governor's office. Finally, some program leaders expressed concern that the military funding would eventually be cut; having multiple funding sources would improve the chances of programs surviving such a funding transition.

Central Leadership Is Needed

Programs that are designed locally and involve collaborative relationships with community agencies still need central leadership. At the site level, base- and unit command-level support is crucial. This support does not have to involve much of the commanders' time, but a simple enthusiastic endorsement can elicit cooperation with the program administrator from various people under the commander.

The presence of such command support (e.g., at Fort Sam Houston, Shaw Air Force Base, and with Navy Kids) was cited as a key ingredient in program success. Conversely, its absence (e.g., after a change in command) was noteworthy at other sites. (See Section 2.)

There are also important roles for national leadership. First, although programs should not be designed and imposed from above, model programs could be provided that can be adapted to local circumstances. This would avoid unnecessarily "reinventing the wheel" and ease the burden on local sites; many program administrators interviewed on site visits observed that there are substantial start-up costs associated with creating a new program. Through the pilot outreach program, replicable models, such as DEFY, already exist. Indeed, at least La Salida and NYNGCC have already been replicated at Fort Sill and in both New Jersey and Delaware, respectively.

A complementary role would be promoting information sharing between sites. New ventures typically involve "learning by doing." By running community outreach programs, the program administrators acquire practical experience that is difficult to codify into a manual but would be useful to others conducting community outreach programs. Several of the program administrators interviewed suggested that a newsletter or periodic conferences would be useful.

Much of the practical information needed to conduct military outreach programs will be developed by, and be resident in, the program administrators, but there is also more general information about drug prevention that central leadership could provide, either directly or by referral to sources such as the Center for

Substance Abuse Prevention with its National Clearinghouse for Alcohol and Drug Information and Prevention Online services.

In addition to providing information, some degree of oversight is necessary. In particular, it is important to ensure that training and other precautions are taken to minimize the risk of harm to the youth. Military volunteers are generally well-intentioned, talented individuals, but they are not necessarily experienced or professionally trained in working with youth or, in the case of program administrators, in supervising others working with youth. Hence, adequate training is essential. Of course, no amount of training or other precautions can completely eliminate the risk that a youth will be hurt in some way, but it can reduce the risk of such injury and also can reduce the risk of negligence.

Target Programs

DoD-funded community outreach programs cannot hope to provide drug prevention programs to more than a small fraction of all youth (see Section 5), and the benefits of providing drug prevention are greater for some youth than for others. (Indeed, most youth will not use illicit drugs even in the absence of a DoD prevention program.) Since only a fraction of youth can be served and it matters which youth are served, targeting the outreach programs can enhance their effectiveness.²

One aspect of targeting pertains to the extent to which the youth are "at risk" for using drugs. Imagine delineating all youth according to their risk of using drugs; of course this is not literally possible, but the mental image is a useful vehicle for discussion.

It is not uncommon to hear prevention providers speak of targeting the "middle third."³ The top third is perceived to include youth who will not use drugs even if they do not receive prevention education; the bottom third includes youth who will use drugs regardless of what prevention interventions they receive. The "middle third" are perceived to be "on the fence" and, thus, can potentially benefit from prevention programs.

Inasmuch as the DoD would like to change the behavior of as many youth as possible, targeting youth who are on the fence is reasonable, although the

²Note that there is a general consensus in the literature that drug prevention programs need to be targeted. For example, Battjes and Bell (1985) assert that "[i]dentifying effective prevention approaches also requires the ability to target programs—to identify which types of individuals are effectively reached with a specific approach."

³Personal correspondence with prevention professionals within and outside the community outreach program.

proportions are not literally one-third, one-third, and one-third. More than one-third of youth will not abuse drugs. In 1992, only 40.7 percent of high school seniors surveyed reported ever having used any illicit drug (Johnston et al., 1993, p. 21). Although underreporting is possible, if not likely (Harrell, 1985), and although excluded populations such as dropouts have higher rates of use than do those in school, it is also true that many youth who try an illicit drug never experience significant problems.

Similarly, it is unlikely that fully one-third of youth are too set in their drug-using patterns to be influenced by a well-run prevention program. By way of comparison, less than 15 percent of high school seniors reported any illicit drug use within the last 30 days (Johnston et al., 1993, p. 21).

Thus, although it makes sense to target youth who are at intermediate levels of risk, they are not necessarily literally a "middle third." Also, it is important to note that giving drug prevention instruction to youth who are not "on the fence" can be of some value. It is possible, for example, that youth who would not otherwise have used drugs will be willing to be more visible peer role models of a drug-free lifestyle if they participate in a prevention program. (One of the adopted schools at Fort Meade sought to follow this approach.) Also, not all drug use is comparably harmful; it may be that some youth who would use drugs with or without being exposed to a prevention program will use them less frequently or less harmfully as a result of the program. (Indeed, promoting responsible use is one of the strategies advocated under the umbrella of "harm reduction"; see, e.g., Heather et al., 1993, and Cohen, 1993, in particular.)

Since even the "most at-risk" youth might, in some cases, derive some benefit from a drug prevention program, equity considerations might suggest extending the outreach programs' target to include all youth who are beyond a certain threshold of risk. There are several reasons why this may not be advisable.

First, OSAP's guiding principle about community prevention is "that no *one* system, agency, or organization can prevent AOD [alcohol and other drug] problems in communities" (emphasis in original, OSAP, 1991b, p. 3). Other agencies with greater expertise with youth in general and problem youth in particular are likely to have a comparative advantage over the military in working with the most troubled youth.

Second, the presence of some youth can disrupt the prevention program for others. For example, ongoing programs such as Operation First Choice, Young Marines, and the New York National Guard Corps of Cadets exclude youth who continue to use drugs; such policies are reasonable given the environment the programs seek to create.

Third, there may be an adverse impact on the volunteers of trying to work with the most troubled youth without the benefit of formal, professional training. For example, a mentor we spoke with described her experience as exhausting and more than she had bargained for because of the wide range of very serious problems her protégé faced. The youth may well have benefited from the program, but such situations create the possibility of an adverse impact on readiness. The assistant director of one of the mentoring programs affirmed a preference for working with youth who are not so at risk or so troubled that they cannot be helped.

For practical and logistical reasons, many programs recruit at-risk youth not by identifying the select youth who are at risk, but rather by identifying small geographic areas with high concentrations of youth at risk and taking all youth from those areas. For example, the Oregon mentoring program chose to work with schools in which a large percentage of all youth received Chapter 1 support.

This strategy may be more than practical; it may actually be better for the youth because it reduces the risk of "labeling," i.e., of creating deviant behavior in youth by having them know they were assigned to a group of individuals at risk for exhibiting such behavior. Some of the schools associated with the pilot programs were quite savvy in this regard. Merritt Elementary School selected youth to participate in Navy Kids from two pools: youth identified as at risk and the general population of youth. This allowed the school to overrepresent youth at risk but include enough students from the general population to keep the students from getting labeled as having special needs.

Thus, there is a question of which geographic areas should be targeted. The first point to make in this regard is that there are no communities that do not need prevention programs. Drug abuse is not as concentrated geographically as some media reports suggest.⁴

In particular, substance abuse problems are not confined to the inner city, and rural areas often have substantial problems with drug abuse.⁵

However, although there is no community that does not need drug prevention, some communities have larger concentrations of at-risk youth than others, so approaches such as the Oregon National Guard's can be useful. Also, some

⁴There is a large literature on media distortions of drug-related phenomena. Some examples include Shoemaker (1989), Reinerman and Levine (1989), and Wong and Alexander (1991).

⁵U.S. Department of Health and Human Services, 1993, observes that metropolitan status is generally not a statistically significant predictor of drug use. Similarly, the GAO (1993c, p. 4) analyzed data from the National Longitudinal Survey of Youth and concluded that "we found no statistically significant differences based on either poverty or urban/rural residence."

communities have greater resources than others, so the unmet need may vary across communities more than the raw need.

One reasonable strategy might be to target economically disadvantaged youth who cannot pay for or otherwise obtain access to comparable programs. For example, the YM and the NYNGCC both focus on youth who do not have widespread access to traditional alternative activities such as the YMCA/YWCA or Scouting.

Youth can also be targeted by age. Often rates of initiation into drug use are highest during the junior high school, so the last year of elementary school and the junior high school years may be particularly valuable times to intervene (Ellickson and Bell, 1990). This decision should, however, reflect local needs and resources.

Program Length

All other things equal, longer, sustained prevention programs are more beneficial to youth. The literature consistently reports a need for follow-up programs and "boosters" (e.g., Ellickson, Bell, and McGuigan, 1993). This does not mean, however, that the outreach programs should be restricted to long programs, for several reasons.

First, as Section 5 pointed out, there are constrained resources, so extending program length may mean that fewer youth are served. Giving 100 youth six years of mentoring is clearly better than giving 100 youth one year of mentoring, but the choice between giving 100 kids six years of mentoring and 600 youth one year of mentoring is not so clear. The literature does not make such comparisons; indeed, with rare exceptions (e.g., Mitchell et al., 1984), it does not take a cost-effectiveness perspective at all. If such evaluations were done, however, it would not be surprising if they found that diminishing returns set in at some point, so that the benefit of the sixth year of mentoring is smaller, on average, than the benefit of the first. Diminishing returns might be even more significant in structured programs (such as adventure camps) that are less able to adapt to a youth's changing needs than is mentoring.

Second, the military should not be viewed as the only provider of drug prevention both because the literature advises against single provider prevention approaches (OSAP, 1991b) and because the military simply cannot fill that role; the schools have been and will likely continue to be the lead agency for prevention services. (See Appendix A.) Hence, a short military-sponsored drug prevention program might be one part of an ongoing, multiprovider, integrated

program. Indeed, "a concurrence has existed in the literature for some time that to be effective, school-based prevention should be part of a larger community-wide effort" (Benard, 1990, p. 129). The military outreach programs can be part of that larger effort.

Third, even if a sustained intervention would have a greater impact, it may not always be feasible for the military to provide such sustained interventions or it might raise the possibility of having an adverse impact on readiness. For example, a naval unit that is at sea for six months each year might simply not be able to mentor youth over an extended period, although they could conduct a camp or outdoor adventure program of shorter duration. Similarly, there may be constraints on facilities. Presumably a week-long camp would have a greater effect on participating youth than a weekend camp, but if the facility is used for military purposes during the week, then a weekend camp may be all that is feasible.

In general, sustained prevention efforts are better than short interventions, but short interventions still have a role in community outreach efforts.

Appendix

A. Guide to the Literature

There is a large literature available in the area of drug prevention. While much of this literature is useful for general reference, a larger fraction is not very useful for a range of reasons. This appendix identifies a few good references on prevention in general and on the types of interventions encompassed by the pilot outreach programs.

General References

The multiple determinants of drug use have led to multifaceted approaches to drug prevention. Therefore, most drug prevention programs are now designed to serve a particular target group. These target groups can be defined by such factors as age, gender, area of residence, and level of drug use. Nevertheless, there are several components that should be a part of all drug prevention programs: They should be community oriented, have family and community involvement, draw on volunteerism, and be geared toward those who are to be affected by the program. Some general references on prevention that make these and other useful points are

1. Office for Substance Abuse Prevention. *Preventing Adolescent Drug Use: From Theory to Practice*, Washington, D.C.: Department of Health and Human Services, DHHS Publication No. (ADM) 91-1725, 1991. The history of drug prevention has been short and controversial since its inception in the 1960s. However, this monograph, drawing from the expertise of both practitioners and prevention researchers, provides lessons based on effectiveness and past successes on how to run drug prevention programs.
2. Office for Substance Abuse Prevention. *The Future by Design: A Community Framework for Preventing Alcohol and Other Drug Problems Through a Systems Approach*, Washington, D.C.: Department of Health and Human Services, DHHS Publication No. (ADM) 91-1760, 1991. Prevention research and demonstration studies continue to find data that indicate that the most promising approach to preventing alcohol and other drug problems is coordinated prevention efforts that offer multiple strategies, provide multiple points of access, and coordinate and expand citizen participation in community activity. This book outlines what OSAP considers to be the most effective measures in merging theory with practice.

3. Office for Substance Abuse Prevention. *Prevention Plus II: Tools for Creating and Sustaining Drug-Free Communities*, Washington, D.C.: Department of Health and Human Services, DHHS Publication No. (ADM) 89-1649, 1989. Integrating prevention messages and activities throughout the community is a promising approach, an approach known as the "systems approach." This volume, *Prevention Plus II*, seeks to help communities adopt a comprehensive systems approach to prevention.
4. Office for Substance Abuse Prevention. *Prevention Plus III: Assessing Alcohol and Other Drug Prevention Programs at the School and Community Level*, Washington, D.C.: Department of Health and Human Services, DHHS Publication No. (ADM) 91-1817, 1991. This book makes available up-to-date tools and techniques for alcohol and other drug prevention planning and implementation. It is meant to serve as a resource to school and community leaders to enable them to assess the soundness and effectiveness of their prevention efforts.

Specific literature that explicitly addresses efficacy for the prevention of illicit drug use is available on several types of pilot outreach drug prevention programs. Useful references from this literature are identified and summarized below. Although the pilot programs rarely included classroom education, examples from that literature are also given because it is much more developed, particularly with regard to outcome assessments.

Classroom Prevention Programs

Classroom-oriented prevention programs have served as the primary provider of the antidrug message for American youth in the past, and this is not likely to change in the near future. Consequently, the best literature on drug prevention is in the area of classroom programs. Although many experts have called for supplementing classroom programs with other support programs from parent groups, community groups, and other institutions, there are few who believe broad-based classroom programs should be replaced as the core of the prevention message. The general consensus from the literature supports the idea of improving existing broad-based classroom programs with outside support coming from the aforementioned societal institutions. These ideas are supported in the literature by

1. U.S. Department of Education. *Success Stories from Drug-Free Schools: A Guide for Educators, Parents, and Policymakers*, ED/OESE92-47R, 1992. The Department of Education identifies successful school-based drug prevention

programs and the seven key characteristics of successful drug prevention programs.

2. Bruvold, William H. "Issues in Alcohol Education Evaluation and Research," *Contemporary Drug Problems*, Spring 1988. This paper presents research recommendations for evaluation and meta-analysis of school-based alcohol and tobacco intervention programs.
3. Coggans, N., D. Shewan, and Associates. "The Impact of School-Based Drug Education," *British Journal of Addiction* 86, pp. 1099-1109, 1991. This research report is an outcome evaluation of drug education on a representative sample of 1,197 youth who responded that drug education simply raised their levels of drug-related knowledge but did not change their drug-related behavior or attitudes.

Physical Fitness-Based Prevention Programs

Fitness interventions have been described as being effective in deterring youth drug use. The idea of using physical fitness programs as drug prevention programs grew out of the use of programs for emotionally disturbed and delinquent youth. There are several studies that indicate that the use of physical fitness programs could garner extremely positive results. These studies are

1. Butcher, Ann H., Gail C. Frank, and Associates. "Heart Smart: A School Health Program Meeting the 1990 Objectives," *Health Education Quarterly*, Vol. 5(1): 17-34 (Spring 1988). The evaluated program, which emphasizes promoting health/preventing disease, has as an additional emphasis on antidrug messages and a physical fitness component.
2. Gary, V., and D. Guthrie. "The Effect of Jogging on Physical Fitness and Self-Concept in Hospitalized Alcoholics," *Quarterly Journal Studies of Alcohol*, Vol. 29, pp. 292-303, 1982. This article discusses the benefits of physical fitness (jogging) on the recovery of alcoholics and moderate alcohol users.
3. Murphy, T., R. Pagano, and G. Marlatt. "Lifestyle Modification with Heavy Alcohol Drinkers: Effects of Aerobic Exercise and Meditation," *Addictive Behavior*, Vol. 11, pp. 175-186, 1986. This evaluation documents the decreased use of alcohol among heavy and moderate drinkers as aerobic exercise increased.
4. Collingwood, Thomas R., Roger Reynolds, et al. "Enlisting Physical Education for the War on Drugs," *Journal of Physical Education and Recreation*, pp. 25-28, February 1992. Many agencies and organizations have developed strategies to fight the war on drugs, but little attention has been paid to

physical activity. This article explores how physical activity can be used by youth to develop an alternative lifestyle to counteract substance abuse.

5. Collingwood, Thomas R., Roger Reynolds, et al. "Physical Fitness Effects on Substance Abuse Risk Factors and Use Patterns," *Journal for Drug Education*, Vol. 21(1), pp. 73–84, 1991. This article offers findings from an outcome evaluation of Collingwood's physical fitness drug prevention program. According to the authors, these findings are suggestive of the usefulness of physical training as a supplemental intervention for adolescent substance abusers.

Mentoring Programs

Mentoring programs have evolved as a result of societal needs for youth to have a nurturing one-to-one relationship that will have a positive effect on a child's development. Mentoring programs vary in their specific goals, but there is an organized process that exists for developing programs that are considered to be effective. The differences in the programs exist because of the particular community or group the program is attempting to serve. When creating a mentoring program, specific attention should be given to the planning stages and the implementation stages. The planning stage has five steps: a needs assessment, the setting of goals and objectives, the creation of a strategic plan, developing a recruitment and screening strategy, and developing orientation and training. The three implementation steps are matching mentors and protégés, a process for monitoring the program, and conducting formative and outcome evaluations. If these stages are followed explicitly, the mentoring program will generally function better than one that omits these stages. For more information on how to implement these stages, the following items may be used:

1. U.S. Department of Education. *One on One: A Guide for Establishing Mentor Programs*, Washington, D.C.: U.S. Department of Education, 1990. This book was written as a "how to" guide on developing and implementing mentor programs in the community.
2. Hamilton, S. and M. Hamilton. *Linking Up: Final Report on a Mentoring Program for Youth*, Cornell University, Department of Human Development and Family Studies. Ithaca, NY, 1990. This evaluation assess "Linking Up," a demonstration program investigating the process and consequences of mentoring.

3. The Enterprise Foundation and The United Way of America. *Partnerships for Success: A Mentoring Program Manual*, Alexandria, VA, 1990. This publication is a guidebook for those who plan to implement a mentor program.
4. The Abell Foundation. *Mentoring Manual: A Guide to Program Development and Implementation*, Baltimore, MD: The Abell Foundation, Inc., 1990. This publication is directed to those who are responsible for creating and implementing mentoring programs for young people from disadvantaged environments.
5. Weinberger, S. *The Mentor Handbook*, Norwalk, CT: Educational Resource Network, 1990. This handbook was created to serve as a guide for individuals engaged in one-to-one relationships in mentor programs.

Parent Training Programs

Parenting training is considered one aspect of a comprehensive approach to the prevention of drug use by youth. However, it is important to note that parents are only one component of the youth's environment. Parents must receive support from their community and society at large. This is necessary because healthy environments encourage healthy choices and make them easier to sustain. This idea is supported in the literature by the following material:

1. Center for Substance Abuse Prevention. *Parent Training Is Prevention: Preventing Alcohol and Other Drug Problems Among Youth in the Family*, U.S. Department of Health and Human Service, DHHS Publication No. (SMA) 93-2022, 1993. The purpose of this instruction guide is to help communities identify and implement programs designed specifically for parents.
2. Moskowitz, Joel M. "Evaluating the Effects of Parent Groups on the Correlates of Adolescent Substance Abuse," *Journal of Psychoactive Drugs*, Vol. 17, No. 3, Jul-Sep 1985. This study investigates two sites where parent groups apparently had great success in positively influencing adolescent substance abuse and its correlates.
3. Coombs, Robert H., Felipe O. Santana, and Fawzy I. Fawzy. "Parent Training to Prevent Adolescent Drug Use: An Educational Model," *Journal of Drug Issues*, pp. 393-402, Spring 1984. The authors of this report submit that drug use is a learned behavior and occurs initially among typical youth from a variety of family circumstances, rather than being confined to a particular subset of the youth population.

Youth in Uniforms

The idea of putting youth in uniforms has existed for many years. However, in the past, youth-in-uniforms programs have existed primarily to teach leadership, encourage citizenship, improve morals, teach basic living skills, and to help youth become overall better individuals. Of all the youth-in-uniforms programs that have existed in the United States, none have ever had a clear drug nexus.

Boy Scouts and Girl Scouts of America are two separate youth-in-uniforms organizations and are the largest of their kind. However, combined they only reach approximately seven million youth, which is less than 10 percent of the youth population. In addition, these two programs spend minimal time on drug prevention. Girl Scouts spend approximately two weeks on a "Take Care of Yourself" badge. Only one of the components of this badge concentrates on drug use and prevention, which means these groups spend less than one week on a definitive antidrug message. The Boy Scouts have a similar nationally sponsored program that lasts about the same amount of time.

While youth-in-uniforms programs such as Boy Scouts and Girl Scouts of America do not have a clear drug message, they have been shown to have an impact on youth along other dimensions, suggesting that the experience can change youth behavior. These organizations have helped to teach acceptance of individuals, encourage scholarship and citizenship, teach life skills, and build character. While the literature on youth in uniforms is minimal, the following materials support these ideas and offer information on how a similar program should be run:

1. Macleod, David I. *Building Character in the American Boy: The Boy Scouts, Y.M.C.A., and Their Forerunners, 1870–1920*, The University of Wisconsin Press, 1983.
2. Rosenthal, Michael. *The Character Factory: Baden-Powell and the Origins of the Boy Scout Movement*, Pantheon Books: New York, 1986.
3. Charles, Jeffrey, A. *Service Clubs in American Society*, University of Illinois Press: Urbana and Chicago, 1993.

B. Derivation of Parameters Used in the Cost-Effectiveness Analysis

The cost-effectiveness analysis in Section 4 used several parameters that required considerable analysis to obtain. This appendix describes the models and data sources used to derive these parameters.

Effect on Drug Consumption of Preventing or Delaying an Initiation

The cost-effectiveness analysis requires a description of how much cocaine and marijuana a youth who is prevented from initiating would have used in the absence of the prevention intervention. These parameters are obtained from a dynamic model of the demand for cocaine, which is documented in Everingham and Rydell (1994) and Rydell and Everingham (1994) (hereafter referred to as the Everingham/Rydell model).¹ The model has been expanded to include marijuana as part of RAND's Drug Policy Game (Kahan, et al., 1992 and 1993). The model simulates various drug control policies through their impact on flow rates between different categories of drug use and predicts the change in drug consumption that could be expected over an extended period under a variety of intervention scenarios.

The Everingham/Rydell model of drug demand is a discrete-time Markov model that divides users into two groups: "heavy" users who use the drug at least weekly and "light" users who use the drug at least once a year but not weekly. It tracks flows of users between these two states and the nonusing state. New users start as light users, and many quit without ever progressing to heavy use. Those who do become heavy users may ultimately regress to light use, or quit and become nonusers. Using this framework, prevention programs, such as those implemented by the pilot programs, can be seen as influencing initiation rates for new users.

Figure B.1 illustrates the model schematically. The flow rate parameters in the diagram are those for cocaine. For example, the "(0.150) Light" flow says that 15

¹The model necessarily makes a number of assumptions that limit its generalizability; these are discussed fully in Everingham and Rydell, 1994, and Rydell and Everingham, 1994, but the assumptions are not inconsistent with the model's use in this context.

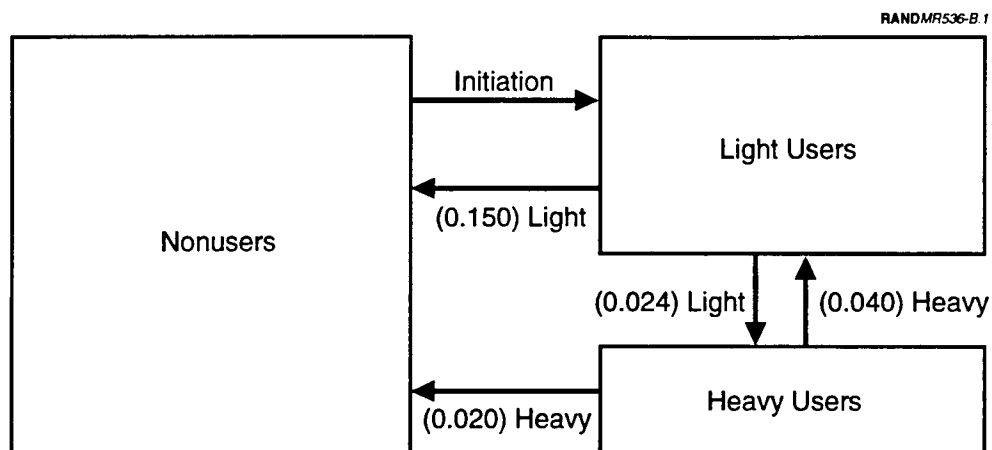


Figure B.1—Dynamic Model of Drug Consumption

percent of light cocaine users quit light cocaine use and become nonusers each year. These flow rates are estimated from data on the prevalence of cocaine use from the National Household Survey on Drug Abuse (NHSDA) conducted by the National Institute on Drug Abuse during various year between 1972 and 1992, supplemented with information on prevalence among the incarcerated and homeless populations.

Table B.1 compares the estimated flow rates for marijuana and cocaine, and also shows the annual consumption rates for each drug per light and heavy user. Relative consumption rates for light and heavy users are based on the NHSDA. Total consumption rates are determined by estimates of total national consumption.

There is an important caveat associated with applying this model to study prevention. It was validated for, and the parameters estimated by studying the entire population of, cocaine users, whereas prevention programs are administered to cohorts of individuals (1) who are younger than the average cocaine user and (2) whose propensity to initiate, escalate, and maintain drug use may vary over time and with age. It may be that the parameter values estimated and, indeed, the entire Markovian structure are more sensible for aggregate populations whose age structure is relatively stable over time than they are for cohorts of individuals with similar birth years, whose average age advances by one year as each year passes.

As an example of the insensitivity to age structure, note that the model assumes that delaying an initiation from age 15 until age 18 achieves the same consumption reduction, on average, as does delaying an initiation from age 18 to age 21. Since use typically tapers off as individuals mature, the delay from age

Table B.1
Parameters in Dynamic Model of Drug Demand

Item	Cocaine	Marijuana
Annual flow rates		
Light quits	0.15	0.13
Light progression to heavy	0.02	0.08
Heavy regression to light	0.04	0.07
Heavy quits	0.02	0.07
Consumption rates		
Light consumption rate (grams/year)	16.60	62.89 ²
Heavy consumption rate (grams/year)	135.61	246.73

18 to 21 might accomplish more. On the other hand, the younger the age of initiation, the greater the risk for heavy, compulsive use, so the delay from age 15 to 18 might be more important. Thus, a variety of arguments can be constructed for how the age structure might affect the benefits of prevention, but these are not incorporated into the model.

There are two reasons why this is a reason for caution but not for abandoning the modeling. First, the model is only used to estimate summary descriptors of a typical career of use (average quantity consumed, average number of years of use, etc.), and independent estimates confirm that the model's results are reasonable. Second, the objective here is merely to get a rough sense of the relative order of magnitude of the benefits and costs, i.e., whether the drug use reduction benefits are of similar magnitude to the prevention programs' costs, 10 times as great, or only one-tenth as great.

The number of light (L) and heavy (H) users of marijuana or cocaine is calculated with the following system of difference equations:

$$L(y) = L(y-1) + I(y) - aL(y-1) - bL(y-1) + fH(y-1)$$

$$H(y) = H(y-1) + bl(y-1) - fH(y-1) - gH(y-1)$$

where

L = number of light users of a drug

H = number of heavy users of a drug

y = calendar year

²Marijuana consumption rates for light and heavy users in Everingham and Rydell (1994) have been scaled to correspond to revised estimates of total marijuana consumption per Childress (1994).

I = annual initiation rate for new users (changes each year)

a = annual rate at which light users quit

b = annual rate at which light users progress to heavy use

f = annual rate at which heavy users regress to light use

g = annual rate at which heavy users quit.

Total consumption is the sum of consumption by light and heavy users:

$$C = C_L L + C_H H$$

where

C = total consumption of the drug in the United States during the year

C_L = annual consumption of the drug per light user

C_H = annual consumption of the drug per heavy user.

These equations are used to calculate the effect of a change in the new user population on the number of heavy and light users each year and the quantities they would subsequently consume based on average light and heavy consumption rates. The results of this analysis are tallied for a 20-year period and discounted at a rate of 4 percent per year to produce the net present value of the number of light and heavy users and their associated consumption.³ The model applies directly to the analysis of prevention programs as such programs impact the quantity " I " by reducing the number of new drug users.

The change in users and consumption that would be expected to result from the pilot programs is thus calculated while varying assumptions of the effectiveness of each program. Many studies find that prevention program effects do not persist after program cessation (Ennet et al., 1994; Bell et al., 1993; Ringwalt et al., 1991; among others). Thus, prevention programs may in some cases merely delay rather than prevent initiation. Also, the average age for initiation into marijuana and cocaine may be older than the age of the youth in pilot outreach programs. Thus, programs that prevent initiations may in reality prevent an initiation four to five years into the future. Here we consider three types of potential program effects:

³See Emmett B. Keeler and Shan Cretin, "Discounting of Life-Saving and Other Non-Monetary Effects," *Management Science*, Vol. 29, No. 3, March 1983, for an explanation of why discounting is necessary.

1. *Preventing* initiations that would have occurred in the base year.
2. *Preventing* initiations into drug use in the fifth year after the intervention (assumes that initiation would have occurred five years from baseline if the program had not operated).
3. *Delaying* initiations for four years after the intervention (assumes that prevention effects are entirely dissipated by the fifth year after baseline).

The model estimates how the overall number of users of cocaine and marijuana would change over a 20-year projection horizon if a pilot program exhibited each of the effects above. Since the model is linear, we operationalize the three scenarios above with an effectiveness rate of 1 percent prevented or delayed initiations. The focus on 1 percent effectiveness in a linear model is in no way a restrictive assumption and simply makes it easy to scale the results of any program. For example, a program that changes the behavior of 2 percent of youth would produce exactly double the results of a 1 percent program.

The Economic Cost of Drug Abuse

A second set of parameter estimates is required by the cost-effectiveness analysis: the monetary value of reduced drug use. These parameters are obtained by estimating the total economic cost of drug use and apportioning this cost over the quantity of drugs consumed.

Estimates of the total cost of drug abuse to society are necessarily rough and somewhat subjective but have been attempted in some studies. Measurement of this cost makes it possible to quantify the benefit of drug control programs. In conjunction with information on the number of users and numbers of kilograms consumed of specific drugs, this cost can be used to calculate the economic cost per drug user and per kilogram of a substance consumed.

Rice et al. (1990) conducted an in-depth analysis of the economic costs of alcohol and drug abuse and mental illness upon which we base our estimates of total cost. This study attempted to measure readily quantifiable direct and indirect costs associated with drug abuse including the costs of abuse-related illness, crime, and lost productivity. Rice et al. classify costs into eight categories:

- Property destruction—property damaged or destroyed by drug and alcohol related crime (U.S. Department of Justice, 1987)
- Victims of crime—income lost from work missed by victims of crime
- Criminal justice—the cost of offenses related to drug and alcohol abuse and associated police protection, legal and judicial services, and correctional costs

- Short hospital stay—annual per-day cost for alcohol and drug related disorders calculated from hospital discharge records in all nonfederal community hospitals (American Hospital Association, 1987)
- Morbidity—the value of goods and services not produced because of alcohol and drug abuse (calculated based on drug abuse prevalence and estimated average lost income per impaired individual)
- Mortality—forgone lifetime earnings (based on gender and age) for those who die of alcohol and drug-related disorders
- Incarceration—income lost due to incarceration
- Crime career—lost productivity (income) from addicts who engage in crime as a career.

The costs included in the Rice study are surely not exhaustive. Indeed, only quantifiable costs are included, and costs are limited to those relating to crime and lost productivity. Excluded costs include crime-avoidance costs (e.g., locks on doors, curfews, avoiding crime-ridden areas at night, etc.), pain and suffering of victims of crime, the emotional cost of drug use to family and friends, etc. Thus, the Rice et al. estimate can be considered a lower bound on the overall cost of drug abuse to society. This does not make cost-effectiveness calculations impossible; the use of a lower-bound economic cost estimate simply results in upper-bound cost-effectiveness measures.

Rice et al. (1990) estimate these costs for 1985, while the programs evaluated here are current. The Rice report proposes factors with which to adjust 1985 to 1988 costs using national data on actual changes in component costs. Following Rydell and Everingham's (1994) adjustment of the Rice (1990) estimates, we adjust 1988 costs to 1992 values using the consumer price index, producing an estimate of the 1992 total costs of drug abuse. Costs are apportioned to marijuana and cocaine by cost category; crime costs due to cocaine (marijuana) are estimated by cocaine's (marijuana's) proportion of user expenditure on all drugs (Rhodes and McDonald, 1991), and productivity loss due to cocaine (marijuana) is estimated by cocaine's (marijuana's) proportion of all drug abuse treatments. These adjustments and the resulting 1992 costs of marijuana and cocaine abuse are detailed in Table B.2.

Measurement of the reduction in societal cost that would result from fewer drug users requires estimation of the *marginal* cost per user, i.e., the amount by which cost would increase as a result of an additional initiation into use. The data to estimate marginal cost are not available. Marginal cost is thus assumed to be

Table B.2
Estimates of Annual Crime and Lost-Productivity Costs Due to Marijuana and Cocaine Use

Type of Cost	1985 Cost of Drug Abuse (\$ millions)	Adjustment Factor 1985 to 1988	Adjustment Factor 1988 to 1992	Proportion Cocaine	Proportion Marijuana	1992 Cost of Cocaine Abuse (\$ millions)	1992 Cost of Marijuana Abuse (\$ millions)
Crime Due to Drug Abuse							
Property destruction	729	1.320	1.185	0.433	0.220	514	261
Victims of crime	842	1.320	1.185	0.433	0.220	570	290
Criminal justice	9,508	1.279	1.185	0.433	0.220	6,240	3,170
Subtotal	11,109					7,324	3,721
Productivity Lost Due to Drug Abuse							
Short hospital stay	1,242	1.305	1.185	0.373	0.154	716	296
Morbidity	5,979	1.203	1.185	0.373	0.154	3,179	1,313
Mortality	9,605	1.188	1.185	0.373	0.154	5,044	2,082
Incarceration	4,434	1.320	1.185	0.373	0.154	2,587	1,068
Crime career	13,976	1.320	1.185	0.373	0.154	8,154	3,367
Subtotal	35,236					19,680	8,126

SOURCE: Rydell and Everingham (1994).

equal to average cost; i.e., costs are linear, so that if use is reduced by 1 percent, the corresponding costs will also fall by 1 percent. This requires that total cost be apportioned relative to levels of drug use.

There are several ways of making this apportionment. Here, we consider three and report the results of each to ensure that our conclusions are not sensitive to the particular apportionment method used. The simplest method to apportion costs is to assume that all users impose equal costs on society and to compute the average cost per user. This is consistent with the traditional use-reduction goals of prevention programs.

Others would argue that the costs of drug abuse are due primarily to heavy use,⁴ so costs are also apportioned under the assumption that all costs are due to heavy drug users. Cost per heavy user assumes implicitly that light use of drugs imposes no cost on society.

Both estimates of the number of marijuana users are based on the NHSDA. Because the subpopulations excluded from the NHSDA include a substantial fraction of all heavy cocaine users, the cocaine population estimates are taken from Everingham and Rydell (1994), who augment the NHSDA with estimates for the homeless and incarcerated.

Cost per user and cost per heavy user also function to bound the extreme positions of the two arguments above. In using cost per user, one places equal weight on light and heavy drug use. The use of cost per heavy user places full weight on heavy use and implicitly assumes zero weight on light use. Intermediate weighting schemes would give cost-effectiveness thresholds intermediate to those computed by these two cost apportionment methods.

One such intermediate approach assumes that the cost of drug abuse is related not to the number of users, but to the quantity of drugs consumed. This is particularly sensible with respect to the costs associated with black market violence and property crime committed to finance drug purchases. In this case, costs might be approximately proportional to the dollar value of the illicit drug market. At any given price, this is also proportional to the quantity of a drug that is consumed. The size of the cocaine market is based on total U.S. cocaine consumption in Rydell and Everingham (1994), who estimate that 291 metric tons of cocaine were consumed in the United States in 1992. Similarly, Childress (1994) estimates the quantity of marijuana consumed at 2,534 metric tons.

⁴United States Senate, 1990.

The parameters relating to these alternative cost apportionment rules are detailed in Table B.3. Note that if the number of users has been underestimated (e.g., because of underreporting in the NHSDA), then the societal cost per user estimates would be biased upward, making it easier for prevention programs to appear to be cost-effective.

Multiplying the predicted reduction in users, heavy users, and kilograms by their associated unit costs in Table B.3 provides the estimated social savings due to the program.

The results of the program-effectiveness model are combined with these measures of economic costs to calculate the expected savings from reduced initiation as a result of prevention programs. Savings are then compared with the actual budgeted program costs to determine whether the program operated cost-effectively. The "break-even" effectiveness for the programs—how effective a program would have to be such that program benefits just exceed program costs—is also calculated.

For example, consider the hypothetical program introduced in Section 4 with 100 participants that cost \$100 per youth (\$10,000 total program budget) and that prevents 1 percent of all youth in the program from initiating cocaine use in the year of the intervention. The Everingham/Rydell model estimates that such a program would result in 5.62 fewer years of light cocaine use, 0.87 fewer years of heavy (weekly) cocaine use, and 0.20 fewer kilograms consumed over 20 years (discounted at 4 percent per year).

Multiplying the predicted reduction in users, heavy users, and kilograms by their associated unit costs in Table B.3 provides the estimated social savings due to the program. If costs are measured per user, the program avoids \$20,749 in costs. If

Table B.3
1992 Costs of Marijuana and Cocaine Use

	Marijuana	Cocaine
Total cost	\$11.8 billion	\$27.0 billion
Total number of users	21.0 million	7.3 million
Cost/year per user	\$564	\$3,692
Number of heavy users	6.6 million	1.7 million
Cost/year per heavy user	\$1,795	\$15,709
Number of kilograms	2,534,000	291,000
Cost per kilogram	\$4,675	\$92,797

costs are apportioned only to heavy users, the program avoids \$13,667 (allocating cost to heavy users results in lower savings since the direct effect of prevention is to reduce the number of light users—the number of heavy users is only affected indirectly through the flow from light to heavy use). Apportioning cost based on kilograms consumed results in savings of \$18,559. Thus, according to any of the cost apportionment rules, this program is cost-effective because the societal costs avoided (i.e., the benefits) exceed the program's \$10,000 budget.⁵

The break-even effectiveness for this hypothetical program can also be calculated; i.e., how effective would the program have to be for savings to just exceed costs? We can work backwards to determine what percentage of initiations would have to be prevented in the year of the program for that program to be cost-effective. Just as the costs avoided vary by the cost allocation definition we employ (per user, per heavy user, or per kilogram), so will the break-even threshold: If costs are per user, the program must prevent 0.48 percent of cocaine initiations in the year of the program in order for program costs to just equal the savings in social cost. If costs are per heavy user, the effectiveness rate must be 0.73 percent; for per kilogram costs, the rate must be at least 0.54 percent. Table B.4 summarizes the break-even thresholds for the pilot programs based on each of the three cost apportionment rules. In general, the break-even thresholds do not vary enormously by cost apportionment method, and the per-kilogram-consumed method's values are intermediate to the thresholds produced by the other methods.

⁵Recall that the estimates of costs avoided depend on numerous assumptions and could be off by a factor of roughly 2 to 4. So, one cannot say with certainty that the avoided costs exceed the program costs in this example.

Table B.4
Break-Even Cost-Effectiveness of the Pilot Programs

Program	Cost Rule	Effectiveness Scenario (%) (defined at bottom of table)												
		Cocaine			Marijuana									
		1	2	3	1	2	3	1	2	3				
Mentoring/Tutoring Programs														
Navy Kids	Per user	1.07	1.30	5.91	6.31	7.73	34.38							
	Per heavy user	1.63	2.24	5.94	6.88	8.88	30.52							
	Per kilo	1.21	1.58	5.29	6.54	8.21	32.26							
Fort Sam Houston Mentoring Program	Per user	1.12	1.36	6.16	6.60	8.08	35.97							
	Per heavy user	1.70	2.33	6.17	6.60	9.28	31.95							
	Per kilo	1.27	1.65	5.54	6.84	8.58	33.73							
Oregon Mentors	Per user	0.62	0.75	3.43	3.66	4.48	19.90							
	Per heavy user	0.94	1.30	3.45	3.98	5.14	17.66							
	Per kilo	0.70	0.91	3.07	3.79	4.75	18.69							
Uniformed programs														
YM FY 93	Per user	0.57	0.69	3.14	3.36	4.11	18.26							
	Per heavy user	0.86	1.19	3.16	3.66	4.72	16.22							
	Per kilo	0.65	0.84	2.81	3.48	4.36	17.15							
YM FY 94	Per user	1.10	1.34	6.10	6.52	7.99	35.49							
	Per heavy user	1.68	2.31	6.15	7.11	9.18	31.52							
	Per kilo	1.25	1.63	5.47	6.79	8.52	33.47							
NY NG Corps of Cadets FY 93	Per user	2.88	3.52	15.96	17.04	20.88	92.73							
	Per heavy user	4.39	6.04	16.02	18.57	24.00	82.46							
	Per kilo	3.28	4.25	49.89	17.67	22.17	87.12							

Table B.4—continued

Program	Cost Rule	Effectiveness Scenario (%) (defined at bottom of table)								
		Cocaine			Marijuana			1	2	3
		1	2	3	1	2	3			
Physical fitness programs										
Cannon AFB sports program										
	per user	4.73	5.79	25.97	27.98	34.32	151.44			
	per heavy user	7.15	10.01	27.80	30.41	39.10	136.84			
	per kilo	5.39	6.99	23.50	29.05	36.44	143.23			
Operation First Choice 93-94										
	per user	1.23	1.50	6.80	7.27	8.90	39.52			
	per heavy user	1.87	2.58	6.87	7.91	10.21	35.08			
	per kilo	1.40	1.81	6.09	7.53	9.45	36.03			
Operation First Choice FY 94										
	per user	2.88	3.51	15.95	17.04	20.88	92.76			
	per heavy user	4.39	6.04	16.04	18.58	23.98	82.34			
	per kilo	3.28	4.25	14.29	17.67	22.16	87.11			
Adventure camps										
Cannon AFB Summer Sports Camp										
	per user	2.58	3.15	14.29	15.27	18.70	83.24			
	per heavy user	3.97	5.46	14.55	21.46	73.45	16.61			
	per kilo	2.94	3.81	12.81	15.84	19.87	78.08			
Shaw AFB DARE Camp FY 93										
	per user	1.45	1.76	8.01	8.56	10.48	46.65			
	per heavy user	2.21	3.03	8.13	9.34	12.02	41.27			
	per kilo	1.65	2.14	7.18	8.87	11.13	43.73			
Shaw AFB DARE Camp FY 4										
	per user	0.84	1.03	4.67	4.99	6.11	27.15			
	per heavy user	1.28	1.77	4.69	5.44	7.02	24.07			
	per kilo	0.96	1.25	4.18	5.17	6.49	25.50			
Be Your Best										
	per user	0.32	0.39	1.78	1.90	2.33	10.34			
	per heavy user	0.49	0.67	1.79	2.07	2.68	9.21			
	per kilo	0.37	0.47	1.59	1.97	2.47	9.72			

Table B.4—continued

Program	Cost Rule	Effectiveness Scenario (%) (defined at bottom of table)								
		Cocaine			Marijuana					
		1	2	3	1	2	3	1	2	3
La Salida FY 93	per user	0.62	0.75	3.42	3.66	4.48				19.91
	per heavy user	0.94	1.29	3.44	3.99	5.15				17.67
	per kilo	0.70	0.91	3.07	3.79	4.76				18.69
Camps with mentoring follow-up (DEFY)										
Alameda DEFY	per user	16.91	20.65	93.44	99.99	122.69				540.54
	per heavy user	25.76	35.25	95.67	108.54	141.23				488.42
	per kilo	19.23	24.96	83.89	103.68	130.06				511.19
Pensacola DEFY										
	per user	17.16	21.01	96.51	101.56	124.75				546.21
	per heavy user	25.92	36.29	90.72	111.43	144.36				488.59
	per kilo	19.54	25.36	85.20	105.34	132.14				519.41
DEFY national										
	per user	2.82	3.44	15.62	16.69	20.45				90.85
	per heavy user	4.30	5.91	15.70	18.19	23.48				80.61
	per kilo	3.21	4.16	14.00	17.38	21.80				85.67
Other Programs										
Kansas Parent Network										
	per user	0.68	0.83	3.76	4.02	4.93				21.89
	per heavy user	1.04	1.42	3.79	4.38	5.66				19.42
	per kilo	0.77	1.00	3.37	4.17	5.23				20.56

Scenario 1: Program prevents 1% of drug initiations that would have occurred in the year of the intervention.

Scenario 2: Program prevents 1% of initiations that would have occurred in the 5th year after the intervention.

Scenario 3: Program delays 1% of initiations that would have occurred in the year of the program until 4 years after the program.

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