Notes From the Field

Submissions to Notes from the Field (500 to 1000 words, preferably without references, tables, or figures) should be sent to Hugh H. Tilson, MD, Editor, AJPH Notes From the Field, Senior Medical Advisor for Health Affairs, Glaxo Wellcome Inc, 5 Moore Dr, Research Triangle Park, NC 27709. This column presents information on newsworthy public health programs and project experiences at the community level. Further information should be sought from the author(s) listed at the end of each article.

Hawaii's Statewide Syringe Exchange Program

The most recent estimate of new HIV infections in the United States indicates that approximately half occur among injection drug users.[1] Syringe exchange programs have been a primary component of HIV prevention in Western Europe, Australia, and Canada. Research has shown that syringe exchange can be an effective means of reducing HIV transmission, although not all individual programs are effective.[2–4]

To date, implementation of syringe exchange programs in the United States can best be described as fragmentary; there are about 100 exchanges currently operating.[5] In addition, not all programs that have been implemented have been effective.[3] If syringe exchange programs are to be used successfully to address the national problem of continuing HIV transmission among injection drug users, it will be necessary to expand the current number of programs and to learn from programs that are operating effectively.

We report on the development of Hawaii's syringe exchange program. Hawaii was the first state to implement a statewide program. The first exchange began in 1990, and the statewide system began in 1993. Current risk behavior and HIV infection data suggest that this system of programs has been quite effective.

The Governor's Committee on AIDS, a semiautonomous policy group in Hawaii, called a meeting of interested organizations and individuals in August 1989 to explore strategies for establishing a syringe exchange program. Interested individuals formed the Sterile Needle Exchange Coalition, which soon had 22 sponsor organizations, including AIDS service organizations, the Hawaii Medical Association, the Hawaii Nurses' Association, and the Hawaii Chapter of the American Academy of Pediatricians. The support of the medical community considerably strengthened the credibility of the coalition. The state director of health also supported the group's efforts.

The coalition decided to pursue an initial pilot syringe exchange program and to refrain from seeking state funding for the program in the legislation. Draft legislation also contained specific program evaluation criteria in an effort to respond to concerns about the impact of the program. The successful passage, during the 1990 legislative session, of an act establishing a 2-year pilot program was the result of dedicated efforts by supporters and compromise on several issues that concerned legislators. The pilot program began in July 1990 in what was known as the "Rubber Room" in downtown Honolulu. The Rubber Room was funded and operated by the Life Foundation, a private, nonprofit AIDS service organization.

In 1992, anticipating the end of the pilot program, the coalition returned to the legislature and proposed an act that would authorize the Department of Health to establish an ongoing syringe exchange program in Hawaii. In a separate action, specific funding for the syringe exchange program was first included in a 1992 AIDS omnibus bill.

In 1993, the legislature included language in the Department of Health's budget calling for the Community Health Outreach Work Project, an HIV prevention program involving the Department of Health and injection drug users throughout the state, to serve as the lead program for syringe exchange program services on a statewide basis. This included coordination, monitoring, and evaluation of all program activities. By the summer of 1994, the Community Health Outreach Work Project had completed expansion of the program to include all of the major Hawaiian islands. There is currently 1 fixed (walk-in) site in downtown Honolulu, which replaced the original Rubber Room, and 5 mobile van routes on the 4 major islands. The activities of the project outreach workers have been fully integrated with the statewide syringe exchange program. Currently, the Hawaii statewide syringe exchange program is one of the largest in the United States.[5]

From 1990 through 1995, the number of syringes exchanged through the program increased each year, peaking at 173 671. A moderate decrease, to 133 958 syringes exchanged, occurred in 1996. The decline appears to have been related to specific events at specific rural program sites, including the opening of a local methadone treatment program, staff turnover, and arrests and deaths of several drug users who were exchanging large volumes of syringes.

In 1995, the program developed a centralized drug treatment referral system that has proven successful in responding to exchange participants' requests for help in accessing drug treatment. Two factors have been critical in this effort: the provision of state-sponsored health insurance to low-income persons and the purchase of methadone treatment services by the Department of Health specifically for persons referred by the syringe exchange program.

The program originally had a limit of 5 syringes per exchange. This was expanded to 25 per exchange in 1993, and the limit was removed altogether in 1996. A syringe exchange program survey found that the great majority of "extra" syringes obtained by high-volume exchangers were simply being exchanged on behalf of others. In an effort to change risk behavior norms and to provide a link to syringe exchange program services for injection drug users not using the program, a peer education program was implemented in 1997. It is expected that if selected participants are trained as peer educators, effective program coverage should increase, especially in rural areas where drug injectors have limited access to the program.

The legislation mandated an annual evaluation of the syringe exchange program, including demographic and risk behavior information on clients. Data are collected through brief interviews conducted at exchange visits with a randomly selected sample of clients. Data are also collected from HIV counseling and testing clinics conducted both at the syringe exchange program and at Department of Health counseling and testing centers. Other communicable disease surveillance data collected by the state Department of Health are used for program evaluation as well.

Participants report relatively low frequencies of injection risk behavior. Of the 407 randomly selected participants interviewed between 1993 and 1996, 300 (74%) reported never injecting with syringes used by others in the month preceding the interview. Of the 107 participants who injected with used syringes, 47 (44%) reported always disinfecting them appropriately with bleach and water before injecting. Repeat interviews with 208 research participants showed a continued decline in reported high-risk drug behavior and, of particular interest, reported frequency of injection. Among the 208 participants with repeat interviews, 100 (48%) reported a decrease in frequency of injection from the first to the most recent interview, 81 (39%) reported no change in frequency of injection, and 27 (13%) reported an increase in frequency of injection.

Hawaii's syringe exchange program offers injection drug users education on reducing risk of transmitting HIV and other blood-borne pathogens through sexual contact. However, unsafe sexual behavior was much more frequent than injection risk behavior. Of those interviewed who had been sexually active, 66% reported never using condoms, and 32% reported having more than 1 sex partner during the month prior to the interview. These findings on injection and sexual risk behavior are consistent with HIV risk behavior among participants in other syringe exchange programs with very low HIV incidence.[3]

Eighty-five percent of the program participants report that they have been tested for HIV. Parallel declines have been observed in HIV-seropositive tests at both the community outreach/syringe exchange project and the Department of Health. At the syringe exchange, the rate of HIV seropositives fell from 5.0% (5/159) in 1989 to 1.1% (2/180) in 1994 through 1996. From January 1988 through June 1996, 8388 HIV tests were administered to persons who reported drug injecting as a risk behavior at the Department of Health sites. The proportion of positive HIV results among persons identified as injection drug users decreased from 1.9% in 1988 to 0.7% in 1996. The very high percentage of injection drug users who have been tested for HIV, the low percentage of seropositives among those tested, and, particularly, the low percentage of HIV seropositives among those recently tested all indicate a low rate of HIV infection among injection drug users in Hawaii.

The annual budget for the integrated community outreach/syringe exchange project is currently $625 600. The most recent benefit–cost analysis estimated that the combined programs would need to prevent 5 or more HIV infections per year in Hawaii in order to have a benefit–cost ratio greater than 1 and to represent a cost saving for the state.

Other states contemplating using syringe exchange programs to reduce HIV transmission among drug injectors and their sexual partners should, we believe, consider the following important characteristics of the Hawaii statewide program:

1. The development of broad-based political support for syringe exchange.
2. Allocation of public funds for a public health purpose. Private funding would not have been sufficient for a statewide system.
3. Flexibility to both expand the system and remove counterproductive aspects of the operation, such as the original limits on syringes that could be exchanged per visit.
4. The use of selected program participants as peer educators and behavior change agents for the remainder of the injection-drug–using community.
5. Coordination of exchange services with other services for drug users, particularly treatment programs for drug addiction.
6. The use of periodic formal evaluation reports, which both increase public confidence in the program and provide a means for problem identification and resolution. □

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Colombian Field Epidemiology Training Program

In 1991, the Division of Epidemiology at the Ministry of Health of Colombia (population 37 million) was eliminated in a period of major administrative government changes. Paradoxically, this occurred just prior to a major health crisis brought about by the reemergence of dengue and hemorrhagic dengue and by the spread of cholera eltor from Peru. In 1992, a health sector reform was launched in Colombia aimed at extending health insurance coverage, increasing competition among health care suppliers by introducing private investors, and further decentralizing health services through increased local self-sustainable financing capacities. At the same time, the emerging challenges underscored the need for reinvigorated public health leadership, particularly at the local level.

To contribute to meeting these national health needs and to provide a constant supply of highly qualified field epidemiologists, the Colombian National Institute of Health responded by establishing, in 1993, the *Servicio de Epidemiología Aplicada* (Applied Epidemiology Service) as a Colombian national field epidemiology training program. These programs are developed with the technical assistance of the US Centers for Disease Control and Prevention (CDC) and loosely patterned after the CDC's Epidemic Intelligence Service, a 2-year training residence in

applied epidemiology. During its initial 5 years, the Applied Epidemiology Service has trained 28 field epidemiologists, and 14 more are currently enrolled. Graduates of the program serve as mentors for current trainees.

Trainees are selected from a country-wide pool of applicants sponsored by their local health services. Training for the Applied Epidemiology Service begins with an intensive 3-week field practice followed by a 2-year apprenticeship conducted at the assigned trainee work site. During apprenticeship, participants are trained to acquire competencies in the areas of epidemiologic process, communication, and professional skills. The core activities of the training include conducting field investigations of acute public health problems; designing, operating, and evaluating a public health surveillance system/program; and analyzing epidemiologic data. Trainees present oral and written communications, including papers on their projects for public health surveillance bulletins.

Examples of service trainees' successfully developed projects include timely field investigations of cholera epidemics, collaboration in organizing the public health response that led to a remarkable laboratory-documented decline in the cholera incidence in Colombia, and field investigations highlighting the deterioration of dengue surveillance and control programs and the urgent need for an organized and well-funded public program to eliminate *Aedes aegypti*. Trainees have participated in national efforts to prevent injuries, the leading cause of morbidity and mortality in Colombia, and have contributed to the setting up of surveillance and control programs. They also have helped the Ministry of Health establish a hepatitis B vaccination program as part of the national immunization schedule, investigated the reemergence of beriberi, contributed to documenting the occurrence of nosocomial transmission of HIV in a dialysis unit, and helped to investigate and control the largest Venezuelan equine encephalitis epidemic since 1969. In 1996, Applied Epidemiology Service trainees assisted local health services in monitoring a nationwide influenza epidemic; as a result, routine influenza immunization for high-risk populations was established. Recently, a field investigation of trainees found telephone surveys useful in monitoring the performance of local chronic disease and injury prevention programs. During the period of 1993 through 1997, service trainees helped investigate more than 60 outbreaks or clusters.

The Applied Epidemiology Service also provides a national task force for immediate response in regard to disease outbreak investigation and control, as well as a network for surveillance and epidemiologic research. Among the surveillance outputs are the development of an injury surveillance system at the National Institute of Legal Medicine and Forensic Sciences and the publication of public health surveillance bulletins.

Factors key to the service's success are its systematic approach to a set of tasks traditionally undertaken at the National Institute of Health, such as assisting in the study and control of epidemics and providing technical assistance to local health services in the development of public health surveillance and disease control programs. The service's sustainability was secured early on by the National Institute of Health's commitment to funding. The service also promotes communication through existing public health education programs and teaches local health officials the importance of field investigations of epidemics in terms of controlling and preventing further disease. Very important for the institutionalization of the service has been the advocacy of public health leaders in Colombia, who serve ad honorem on the service's Advisory Committee. This steering group evaluates performance and provides specific policy recommendations. Among its members are a representative of the Ministry of Health and distinguished faculty of the National School of Public Health of Antioquia University (Medellín), the Master in Epidemiologic Science Program at the University of Valle (Cali), and other local university programs in Bogotá. Since the establishment of the service, the National Institute of Health has sponsored an annual international course involving faculty from national university programs (e.g., those in Cali and Medellín) and US schools of public health (University of Michigan, Emory University, Tulane University, and University of Texas), as well as CDC epidemiologists. These courses were attended by 289 health professionals during 1994 through 1997.

As is the case with field epidemiology training programs in other nations, Colombia's Applied Epidemiology Service has met the expectations of participating institutions and continues to contribute to advancing the agenda of public health in Colombia. The service is financed by local health services that sponsor potential trainee candidates; in return, most of the training takes place at the local health service, although trainees are asked to participate in response teams to investigate and control national epidemics. The direct cost of each trainee to the National Institute of Health is estimated at $7000 a year, excluding trainees' estimated salaries ($12 000 a year); each trainee remains employed and fully paid by each sponsoring organization.

In the wake of a prolonged national political crisis, the institutionalization of the Applied Epidemiology Service is still far from complete. However, the service has proven to be an essential national health program and a model for other countries. Many of the activities jointly developed by the service, Colombian and US schools of public health, and the CDC convey the spirit of international partnership needed to address global health. □

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Note. A video and examples of teaching materials can be obtained from Dr Cardenas.