

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, ESP Division, Burroughs Wellcome Co, 3030 Cornwallis Road, Research Triangle Park, NC 27709. This column presents information on newsworthy public health programs and project experiences at the community level. Guidelines for Contributors to Notes from the Field can be obtained from the Journal office. Further information on each article published should be sought from the author(s) listed at the end of the article.

Translating State Data into Local Programs: Targeted Research for Intervention Planning (TRIP)

Faculty in the Department of Community Medicine of the University of Connecticut School of Medicine, working with public health professionals, developed a method for effective translation of state data into programmatic action by local health departments. The method, termed "targeted research for intervention planning (TRIP)," was tested on sexually transmitted diseases in Bridgeport, Conn. Bridgeport is the largest city in Connecticut, with a 1990 population of 141 686 (4.3% of the state population). In the late 1980s, Bridgeport accounted for 11% of the statewide cases of gonorrhea and 20% of all syphilis cases. The rate of syphilis in Bridgeport is almost five times the rate in the state as a whole.

The method involved four steps:

1. *Locating subpopulations with the health problem.* State health data are provided to local health departments at

the town or multitype catchment area level. Although these data allow the state to broadly identify problem areas, they provide little programmatic guidance to local health departments. The first step was to disaggregate these data by subgeographic variables (e.g., age, ethnicity, and occupation) to more specifically define populations at risk. Reported cases were counted and mapped geographically to localize the problem within the neighborhoods of Bridgeport. State data sources for mapping other health "hot spots" include birth certificates, death certificates, and hospital discharge records.

2. *Ethnographic assessment of the targeted subpopulation.* Once a well-defined subpopulation was identified, face-to-face anthropological research techniques were used to discover the perception of the problem in the community and to identify community resources and strategies that could be mobilized to address the problem. These techniques included informal conversations, "key informant" interviewing, structured interviewing, and observation of key events and behaviors. Sources of data included neighborhood residents, service providers, local officials, and members of community service institutions and organizations.

3. *Quantitative data collection: the survey.* A survey instrument was used to test the degree to which the findings from the qualitative interviews and observations were representative of the neighborhood. The survey examined the variables identified in the ethnographic study as possible predictors of high-risk behavior. They included life-style, household composition, types of sexual relationships, condom use, self-perception of risk, and attitudes concerning risk reduction. The survey was administered to a small random sample of 85 members

of the defined subpopulation and to a purposive sample of commercial sex workers.

4. *Translating the data into a testable program model.* The results of the research process were disseminated to key informants, the Bridgeport Health Department staff, the State Health Department, and community-based service providers and leaders. Approaches to intervention were discussed with all participants. The ethnographically driven analysis of the problem led participants to consider intervention strategies beyond those on which they routinely relied. The researchers and key informants then designed an approach to the problem on the basis of the research findings and input from all involved sectors.

State data showed that adults aged 20 to 30 years in two primarily Puerto Rican and African-American neighborhoods accounted for 30% of Bridgeport's sexually transmitted disease cases in 1989. The qualitative and survey data showed the following:

- The relationship between unprotected sex and sexually transmitted diseases was well understood in these neighborhoods, yet there was minimal use of condoms. Neither service providers nor community residents were optimistic about condom promotion as an effective strategy for risk reduction.

- Specific high-risk subgroups included drug dealers and commercial sex workers, childless people on welfare, and childless people living with parents or other relatives.

- Ethnic and gender differences had only a limited impact on sexually transmitted diseases-related attitudinal and behavioral factors. The structure of an intervention program in these neighborhoods could involve mixed-gender and multiethnic groups.

● The central factor in increased risk was the high frequency of sexual relationships outside the regular partner relationship. These "steppin' out" relationships contributed to considerable "gamesmanship" in both women and men, covering up both the behavior and resulting sexually transmitted diseases. Yet the quantitative data indicated that people were far more optimistic about an intervention effort aimed at reducing sexual partners than they were about increasing condom use (although this result was stronger among women).

On the basis of these results, a community-based, peer-oriented program for small, mixed-gender groups was designed. The aim of the program is to reduce the number of sexual partners and to strengthen the primary relationship when one is present. Trained peer counselors will facilitate small group discussions, presentations, and activities aimed at increasing individual self-esteem, individual and mutual responsibility, and understanding between men and women. The intervention program will provide information about sex and sexual health and present positive role models and relationship models for men and women. Approximately \$100 000 in funding is being sought for a 2-year period to develop, test, evaluate, and modify three rounds of the intervention.

The delineation of focal subareas and subpopulations permits a broader range of methodological tools that can be used by local health department staff and can be linked more directly to program development. These tools include the collection of qualitative data directly from members of the target population, linked to the use of focused surveys with a relatively small sample size. The combination of qualitative and quantitative data provides mutual verification, stimulates new lines of discovery, and improves the specificity of data collection methods and instruments. It requires less time, personnel, and expense than more traditional methods of community health evaluation and need assessment. The development and testing of the method were carried out as part of a larger contract between the University of Connecticut and the Connecticut Department of Health Services and accounted for \$40 000 of the larger contract. Personnel included a half-time project coordinator, four part-time key informant interviewers who were members of the targeted subpopulation, and

three student data processors who abstracted information from the sexually transmitted disease reports.

The methodology encourages the participation of many sectors of the community, including the funding source, the sponsoring organization, other community-based service providers, and the focal population. Maximizing the participation of each of these sectors in the research process contributes to their commitment to the results and to the development and implementation of an intervention. The data collection procedures called for require input from a trained researcher (we would suggest the involvement of local university faculty) but maximize the involvement of health department and community people in design, data collection, and analysis.

This research approach can serve to redefine the role of the university as a community partner and the role of the local health department not only as an effective user of data but as a generator of data in its search for the local solutions that are so much a part of public health tradition. □

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The Rhode Island Sun Smart Project: Skin Cancer Prevention Reaches the Beaches

Skin cancer is by far the most common malignancy in the United States. More than 600 000 Americans will be affected this year, exceeding the number affected by the next four most common sites combined.¹ Solar ultraviolet radiation has been identified as the major cause of the epidemic. Because most ultraviolet radiation exposure is intentional, primary efforts to prevent skin cancer must focus on encouraging individual precautionary behaviors. The beach in summer is a site of special concern, inasmuch as exposure to solar ultraviolet radiation is particularly intense for many people at this time and place.

The purpose of the Rhode Island Sun Smart Project was to deliver skin cancer prevention and health promotion centers directly to sunbathers at Rhode Island (population: 1 000 000) beaches. A 1-year grant of \$35 000 from the National Cancer Institute provided initial funding for the development of measurement models and questionnaires based on the transtheoretical model of behavior change.²⁻⁴ A subsequent 2-year grant of \$50 000 from the Rhode Island Cancer Prevention Research Consortium provided funding for the development of interventions and feasibility testing of the beach as an intervention site. Interventions were conducted at one of three Rhode Island state beaches on 11 days during the summers of 1991 and 1992. Rain, forecasts of rain (resulting in poor beach attendance), cold weather, and a hurricane caused us to abandon attempts on 9 additional days in 1991 and 2 days in 1992. Project staff included a health psychologist, a dermatologist, a graduate research assistant, a project coordinator, and six trained interviewers.

Seven interventions were developed and tested:

1. An *educational pamphlet* (*Skin Care under the Sun*,⁵ developed by the American Academy of Dermatology) described the hazards of sun exposure and appropriate precautionary behaviors. Pamphlets were distributed in conjunction with all other interventions.

2. Free *sunscreen samples* were distributed to beachgoers with verbal instructions from the interviewers on proper use. The samples were donated to the American Cancer Society by the manufacturer and consisted of 4-oz bottles of a waterproof sunscreen in an emollient base with a sun protection factor (SPF) rating of 15.

3. The *sun sensitivity assessment and feedback* intervention consisted of a few simple questions that assessed intrinsic ("phenotypic") sun sensitivity, an important indicator of skin cancer risk.⁶ Feedback describing appropriate preventive actions specific to the participant's degree of risk (high, moderate, or low) was preprinted on adhesive labels and attached to the educational pamphlet.

4. The *sun scanner* intervention consisted of a mirror and a "black light" (Wood's light) in a cloth-enclosed box into which the participant looked. Wood's light is a low-intensity source of blue and near-ultraviolet light that accen-

tuates epidermal pigmentation, dramatizing the extent of ultraviolet damage and photoaging—the cosmetic consequences of chronic sun exposure on the face. The scanner was loaned to the Brown University Dermatoepidemiology Unit free of charge from the manufacturer through the American Academy of Dermatology.

5. Both *educational* and *dramatic videotape* interventions were used. *Skin Care under the Sun* (American Academy of Dermatology) is a 7-minute staged discussion between a mother and her teenaged daughter about the dangers of sun exposure and the necessity for precautions. *Goodbye Sunshine*, a 20-minute segment from the Australian *60 Minutes* television program, recounts the story of a young man who devoted himself to informing the public about the dangers of sun exposure and the importance of early detection of skin cancer until his death from melanoma.

6. The *skin microtopography* intervention required making a plastic impression, similar to a dental impression, of the skin in the crow's-foot area near the eye. These impressions can be graded according to the degree of wrinkling, a manifestation of sun-induced aging of the skin. We chose not to implement this intervention after pilot testing indicated that it would be very difficult to conduct in the beach environment.

7. The *ultraviolet* and *polarized light instant photography* interventions were developed for year 2 of the project to circumvent limitations of the sun scanner and microtopography interventions, respectively. The ultraviolet light camera was used to take a full frontal black-and-white photograph of the face, revealing epidermal pigmentation damage similar to that shown by the sun scanner. The polarized light camera was used to take a close-up color photograph of the crow's-foot area that revealed structural damage to the skin.

Each intervention was conducted at least twice at different beaches and on different days. The selected beaches had distinct "personalities": a teen beach, a family beach, and a community beach. Permission for beach access was obtained from the Rhode Island Department of Environmental Management. Beach staff at all sites were very supportive, often asking to participate in the interventions and volunteering to reorganize the available space to accommodate our needs.

A \$500 lottery incentive was offered to recruit participants, although many beachgoers reported that the lottery did not influence their decision to participate. The interviewers were easily spotted on the beach; they wore matching white hats, sunglasses, bright yellow T-shirts printed with the Sun Smart logo and the names of the project sponsors (the University of Rhode Island, Brown University, and the American Cancer Society). The T-shirts legitimized the project while serving as an additional informative intervention. The Sun Smart logo consists of a sun (located in the center of the T-shirt) that has in each ray a slogan or word associated with safe sun behavior (*sunglasses, Slip! Slop! Slap!, SPF15+, hat, shirt*). The intervention staff modeled appropriate sun behavior, captured attention, and promoted interaction. The local broadcast and print media took notice of the project, resulting in coverage on evening news broadcasts and follow-up newspaper stories.

A total of 1016 beachgoers were contacted during the 11 days of testing. Overall participation was high (62%, $n = 633$), with a median acceptance rate of 89% (range: 21%–96%). Participation was higher than 80% for all interventions except the videotapes (see Table 1). Although videotape would seem to be an important and convenient means of public health education, there are barriers to its use at the beach. These barriers include the need for access to electrical power in an area out of direct sunlight, the requirement that participants leave the beach and come to the pavilion area for an extended period of time, and the inevitable delays (which discouraged participation) for some individuals because the videotape cannot be shown until a reasonable number of people have gathered to watch. In addition, the only beach well-equipped for this intervention (the teen beach) also had the lowest acceptance rates for other interventions.

Participation was much higher for the remaining interventions. The acceptance rate for the sun scanner is especially noteworthy, as the scanner shared many of the limitations of the videotapes, such as the need for access to electrical power and the requirement that sunbathers leave their place on the beach to go to the pavilion area. The sun scanner drew much curiosity, dramatic reactions, and many questions from participants. The sun sensitivity assessment required only 2 minutes to com-

TABLE 1—Participation Rates for Beach-Based Interventions (n = 633)

| | No. | Acceptance, % ^a |
|----------------------------|-----|----------------------------|
| Intervention | | |
| Photographs | 80 | 95 |
| Pamphlets | 98 | 95 |
| Sun sensitivity assessment | 137 | 90 |
| Sun scanner | 76 | 83 |
| Sunscreen | 126 | 81 |
| Videotapes | 116 | 27 |
| Beaches | | |
| Community | 164 | 92 |
| Family | 121 | 86 |
| Teen | 348 | 50 |

^aPercentage of individuals offered the intervention who agreed to participate.

plete, was delivered directly to participants on the beach, and provided immediate feedback. The sunscreen intervention was also well accepted; it was easy to deliver, it was free to participants, and it gave immediate access to sun protection.

The highest participation rates were obtained for the pamphlet and photography interventions. The photography interventions, especially the ultraviolet light photographs, generated a great deal of interest among sunbathers. Although in some ways not quite as compelling as the "real time" image provided by the sun scanner, the photographs had several important advantages. In particular, the photos were directly deliverable to sunbathers on the beach and provided a convenient and highly personalized take-home reminder of the consequences of unprotected exposure to solar ultraviolet radiation. Furthermore, project participants who showed their photographs to family and friends help to disseminate an important public health message.

Participation rates also varied by beach site (see Table 1). The relatively low rate for the teen beach underscores the difficulty of reaching the adolescent population, an important target group for "safe sun" messages.

On the basis of our experience, we recommend a beach intervention package consisting of pamphlets, sunscreens, sun sensitivity assessments, and photographs. Excluding the research and

evaluation components of our project, we estimate a cost per participant of about \$30. Costs could be reduced by soliciting contributions of pamphlets and sunscreens and by enlisting the cooperation of local departments of health or volunteer agencies such as the American Cancer Society. Economy of scale would offset relatively costly one-time expenses (e.g., equipment). We are also exploring the development of computer-based expert systems to provide follow-up interventions for the home.⁷ Pending continued funding, we intend to conduct further pilot testing of our intervention package.

The Sun Smart Project has demonstrated the feasibility of the beach as a site for skin cancer prevention and health promotion efforts that reach individuals at high risk for skin cancer. Perhaps our biggest concern in conducting this project was that beachgoers would not want to be bothered while spending a relaxing day in the sun with family and friends. In fact, many sunbathers were bored and looking for something to do. The Sun Smart Project also provided valuable data pertinent to assessing which interventions are viable

at the beach and identifying barriers to implementation in larger public health efforts. Results continue to be analyzed to assess readiness of the interventions for public health dissemination. □

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More information about the project may be obtained from Dr Rossi.

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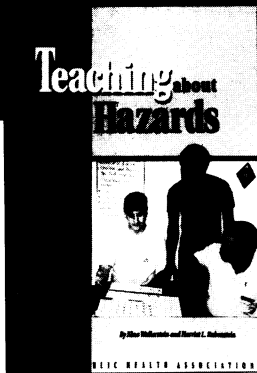
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The Practical Guide to Teaching Workers about Job Hazards



Teaching about Job Hazards: A Guide for Workers and Their Health Providers

By Nina Wallerstein, DrPH, and Harriet Rubenstein, JD, MPH.
170 pages, softcover, 1993

Occupational disease and injury are vast and growing health problems; however, they are almost 100% preventable with appropriate worker education in health and safety. This practical manual gives guidelines on providing health and safety education to workers who face on-the-job hazards. It contains actual worksheets, tips, case studies, and ideas that can be used immediately. Intended for readers who are already familiar with occupational health.

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